1.3.2.
Number of value-added courses for imparting transferable and life skills offered during last five years

INDEX

Brochure or any other document relating to value added courses

	Year	Page
1	2019-20	01 to 88
2	2018-19	89 to 168
3	2017-18	169 to 252
4	2016-17	253 to 338
5	2015-16	339 to 421

2019-20

Dept. of Mechanical Engg

ANDHRA PRADESH STATE SKILL DEVELOPMENT CORPORATION (APSSDC)

DesignTech
Technology for designing the future

SIEMENS

Technical Skill Developement Institutes

SKill Development, Entrepreneurship & Innovation Department (SDE & I Dept.)
Governement of Andhra Pradesh
Amaravati.

About t-SDI

The SIEMENS t-SDI aim to train ITI, Diploma Students, Unemployed Youth and School Dropouts on world class Siemens Equipment & Software's. This TSDIs provides training by Siemens certified training partners. t-SDIs benefits student community immensely as they trained on the same Equipment / Software used by Industry. Participants acquire industry best practices through this training. The globally valid Siemens Certification after completion of training increase student's employability.

Deliverables of SIEMENS t-SDI

- ☑ Impart technical skills, value based education to students, so as to enable them to face the demands of the industry through Industrial Oriented Training with Contemporary learning methodologies.
- ☑ Support the academicians who are looking forward to take the advantage of the open up global market and research in the contemporary technology.
- ☑ Benefit the researchers in considerate the industry related problems.
- ☑ Provide a platform for consultancy in various Technological areas such as fields like Mechanical, Instrumentation, Electrical, Electronics & Communication, Automobile and Biomedical Engineering.

The Objective of SIEMENS Project is to Bridge the Gap Between Institution & Industries

Weak Education System

- Out dated engineering concepts
- No vocational experience/interaction
- Outdated tools in labs
- Faculty not equipped with industry trends & practices

Challenges Faced by Industry

- Large investment in time, effort & money to train students
- 6–18 months before recruits become productive
- Affects competitiveness of companies

SIEMENS Project Initiatives

- Bridge the gap between industry needs and available Skills through industry oriented training
- Enable institutes to improve quality of education
- Provide state-of-the-art tools to match industry standards
- Student Training in Industry skills

TSDI Laboratories

Automotive: 2- Wheeler Lab	Automotive: 4- Wheeler Lab	Electrical-Home Lab	Refrigeration and Air Conditioning (R & AC) Lab	C B T LAB(Solid edge) Lab
Electronics: Home Lab	Electronics: Office Lab	CNC	Welding	Agro and Farm Equipment Lab

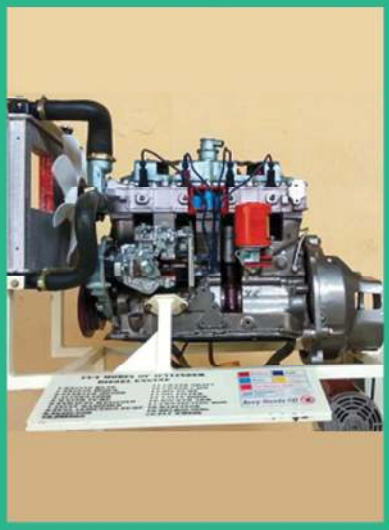
Automotive: 2- Wheeler Lab

- The Motorcycle Mechanic course is designed to help you to become a successful motorcycle mechanic.
- In-depth knowledge of various systems and SOPs will be covered supplemented with rich 3D visualization and application scenarios.

Modules Offered

- Basic Automotive Servicing
- Automobile Electrical system
- Automobile Body repair & Painting Repair of Engine System ,
- Repair and overhauling of engine
- system and Transmission Systems.

Automotive: 4- Wheeler Lab

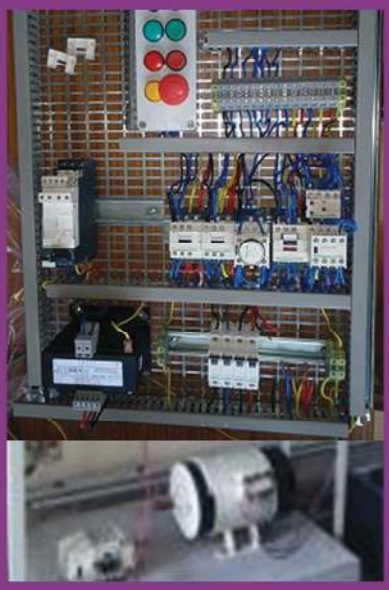


- This Module is designed so that you can gain knowledge about the basic maintenance of a passenger car and begin a career in the car repair and maintenance industry.

Modules Offered

- Basic Automotive Servicing , Repair & Overhauling
- Automobile Electrical system
- Automobile Body repair, denting & Painting
- Repair of Auto Air Conditioning system, Engine System , Automotive sensor and actuator technology Repair and overhauling of engine
- system (Petrol & Diesel) and Transmission Systems.

Electrical-Home Lab



- This Module is designed to get you started as an electrician for domestic purpose.
- It covers wiring procedures, earthing regulations and national electrical code (NEC) for both Domestic and Industrial with rich 3D visualization and application scenarios.

Modules Offered

- House Wiring
- Rules pertaining to Earthing
- The National Electrical Codes
- Testing of Domestic Wiring.
- Repair of Home Appliances

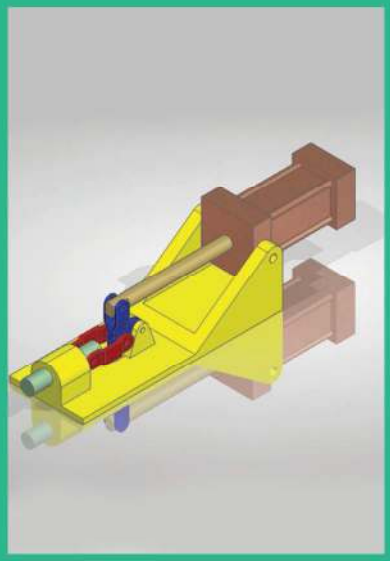
Refrigeration and Air Conditioning (R & AC) Lab

- This Course is designed so that Student can gain basic knowledge regarding the air conditioning process, its working principle, Installation and maintenance and the use of electrical tools needed to carry out these operations with rich 3D visualisation and application scenarios.

Modules Offered

- Installation of Refrigeration and Air Conditioning equipment
- Servicing and Maintenance of R & AC equipment

C B T LAB(Solid edge) Lab



- This course will be modular scalable from Foundation level to Expert level imparting the skill with respect to Design and test Part Modelling & Assembly, Drafting and sheet metal.

Modules Offered

- Introduction to Solid edge, sketching and practice of sketch drawing,
- Solid Modelling
- Part Modelling & Assembly
- Drafting and sheet metal

Electronics: Home Lab

- The Electorinc Home course is designed so that you are able to troubleshoot and diagnose the problem and identify the case for repair in Home Appliances.

Modules Offered

- Foundation Electronics
- Installtion & Maintenance of Home Theatre
- Repair & Maintenance of TVs-LCD/LED

Electronics: Office Lab

- The Electronic office course is designed to help you begin a career as Field Technician.
- This product provides an overview of the Installing the system and configuring the peripherals in an office, system troubleshooting, repair and its usage.

Modules Offered

- Installation & Maintenance of DTH System
- Installtion and Maintenance of Office Electronic Equipment - Network Devices
- Installtion and Maintenance of Office Electronic Equipment - Hardware Devices
- Repair & Maintenance of Smart Phones
- Installation & Maintenance of Office Application Software

Manufacturing: Production (CNC Machine) Lab

- This Course gives general information about different turning,Milling operations, machines used in turning, Milling operations, tools used in Milling,turning operations, components used in milling, turning machines, different types of defects that occur while working in milling, turning and their remedies.
- Subtractive manufacturing Process, TURNING-MILLING CNC Programming, Operating & Machining.

Modules Offered

- Introduction to CNC Technology - CNC Lathe
- Introduction to CNC Technology - VMC
- CNC Programming & Machining
- CNC Turning
- CNC Milling (VMC)
- CNC Machine Tool Maintenance - Mechanical
- CNC Machine Tool Maintenance - Electrical
- Machining Foundation
- Milling - Conventional
- Turning - Conventional
- Milling Master
- Turning Master
- CNC Milling Master
- CNC Turning Master
- Advance Forging &Heat Treatment Conventional

Manufacturing: Fabrication (Welding) Lab

- This Course imparts Skills about different welding processes, electricity and welding, types of arc welding, welding joints and symbols, oxy-fuel gas cutting, grinding, MMAW and MIG.

Modules Offered

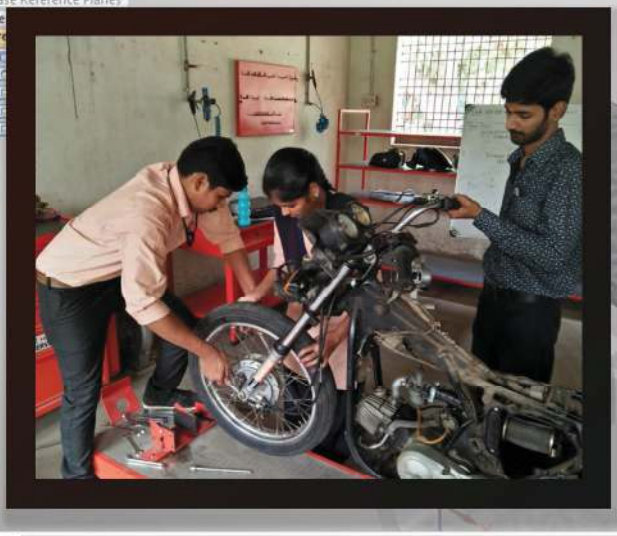
- Role of Electricity in Welding
- Basic Fitting work,
- Basic Sheet metal work
- Structural & Pipe Fabrication
- Different types of Welding Process and Gas Cutting

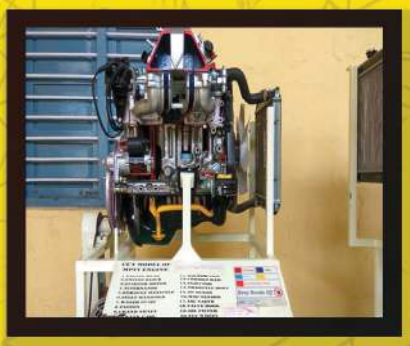
Agro and Farm Equipment Lab

- This Course Skills on Root Harvesting Equipment, Structure of Potato Digger, Structure of Peanut Digger, Types of Root Harvesting Equipment according to operation, mechanism and the location and functions of main components. Information regarding adjustment of Digger Blade, Digger's depth and Drive chains. Repair and Field operation of Tillage Equipment course is designed to help you become Tillage Equipment specialist.
- In-depth knowledge of various systems and SOPs will be covered, supplemented with rich 3D visualization and application scenarios. Repair and Maintenance of Tractor.

Specialized Modules

- Tractor Servicing Foundation
- Maintenance & Field Operation of Irrigation Equipment
- Maintenance & Field Operation of Seed Drills
- Repair And Field Operation Of Tractor
- Repair of Harvesting & Threshing Equipment
- Repair & Field Operation of Tillage Equipment
- Repair & Field Operation Of Root Harvesting Equipments
- Overhauling of Tractor
- Maintenance & operation of Power Tiller
- Repair of Power Tiller
- Repair, Maintenance & Field Operation of Potato Planters
- Repair, Maintenance & field operation of Rice Trans-planters





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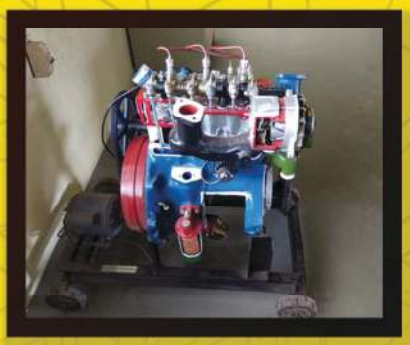

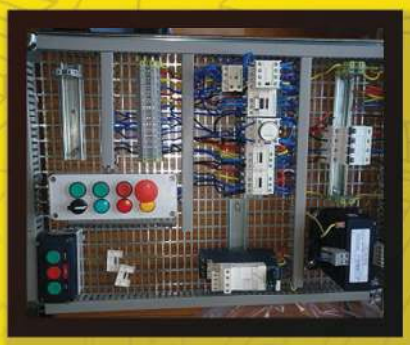

MICROWAVE TRAINER

SIEMENS Technical Skill Developement Institutes in Andhra Pradesh

SRIKAKULAM DISTRICT

1. Govt. Polytechnic, Srikakulam
2. Aditya Institute of Technology and Management, Tekkali
3. G M R Institute of Technology, Razam

VIZIANAGARAM DISTRICT

4. Maharaj Vijayaram Gajapathi Raj (MVGR) College of Engineering, Vizianagaram

VISAKHAPATNAM DISTRICT

5. Govt. Model Residential Polytechnic, Paderu
6. Indo-German Institute of Advanced Technology, Kancharapalem
7. Gayathri Vidya Parishad college of Engineering, Madhurawada

EAST GODAVARI DISTRICT

8. Pragathi Engineering college, Surampalem
9. Aditya Engineering college, Surampalem
10. Godavari Institute of Engineering and Technology, Rajahmundry

WEST GODAVARI DISTRICT

11. D N R College of Engg. and Technology, Bhimavaram
12. Sir C R Reddy College of Engineering, Eluru

KRISHNA DISTRICT

13. IIIT, Rajiv Gandhi University of Knowledge Technologies, Nuzvidu
14. Andhra Loyola Institute of Engineering and Technology, Vijayawada
15. Govt. Polytechnic, Vijayawada

GUNTUR DISTRICT

16. Vignan's Foundation for Science, Technology & Research University, Vadlamudi
17. R.V.R. & J.C.College of Engineering, Chowdavaram

PRAKASAM DISTRICT

18. Prakasam Engineering College, Kandukur
19. St. Ann's College of Engineering & Technology, Chirala

NELLORE DISTRICT

20. Audisankara College of Engineering & Technology, Gudur
21. Govt. Polytechnic, Nellore

CHITTOOR DISTRICT

22. Sree Vidyanikethan Engineering College, Sree Sainath Nagar, Tirupati
23. Madanapalle Institute of Technology and Science, Madanapalle
24. S V Govt. Polytechnic, Tirupati
25. Kuppam Engineering College, KES Nagar, Kuppam
26. Siddhaith Institute of Engineering & Technology(SIETK), Puttur
27. Sri City SEZ, Satyavedu

KURNOOL DISTRICT

28. Rajeev Gandhi Memorial College of Engineering and Technology, Nandyal
29. G Pulla Reddy Engineering College, Kurnool
30. Govt. Model Residential Polytechnic, Srisailam

ANANTAPUR DISTRICT

31. Govt. Polytechnic, Anantapuramu
32. Ananthalakshmi Institute of Technology and Sciences, Anantapuramu

KADAPA DISTRICT

33. IIIT Rajiv Knowledge Valley Campus, Idupulapaya
34. Annamacharya Institute of Technology & Sciences, Rajampet

Weblink: http://engineering.apssdc.in/siemens

APSSDC

ANDHRA PRADESH STATE SKILL DEVELOPMENT CORPORATION

3rd Floor, Infosight, Survey No. 78/2, Tadepalli, Vijayawada,
Andhra Pradesh - 522 501.

For More Details: 1800-425-2422

www.apssdc.in | facebook.com/apssdcskilldevelopment | linkedin.com/apssdcskilldevelopment | twitter.com/apssdcskilldevelopment

Dept. of EEE

HOD (MVGR EEE) <hod.eee@mvgrce.edu.in>

Internship training for MVGR Engineering college EEE Students

2 messages

Ravi Kumar a <ravikumar.a@apssdc.in> Fri, Nov 2, 2018 at 11:14 AM
To: eeehod@mvgrce.edu.in

Dear sir,
Thank you so much for your interest in imparting the training for your students under internship program for a period of one month for final year of Electrical Engg.students. Received the student lists.
we will start the training for 75 students from 26-11-2018,please find the attachment which contains ,schedule of training .For any further details you are free to contact me.

A Ravi Kumar,

Associate Project Director,

APSSDC-SIEMENS Project.

MVGR INTERNSHIP SCHEDULE.xlsx
14K

HOD (MVGR EEE) <eeehod@mvgrce.edu.in> Fri, Nov 2, 2018 at 12:01 PM
To: saratkumar sahu <sahu.sarat@gmail.com>

[Quoted text hidden]
--
With best regards.

Dr. Sarat Kumar Sahu
M.Tech, Ph.D., MIEEE, MIE(I),LMISTE
Professor &Head
Department of Electrical & Electronics Engineering
MVGR College of Engineering
Vizianagaram-535005
Andhra Pradesh, INDIA

E-mail: eeehod@mvgrce.edu.in

Office Phone No:91- 8922-241167

Cell: 91- 9490252044

MVGR INTERNSHIP SCHEDULE.xlsx
14K

Internship training for MVGR Engineering college E

Ravi Kumar a <ravikumar.a@apssdc.in>
to eeehod

Dear sir,
Thank you so much for your interest in imparting the training for your students under i
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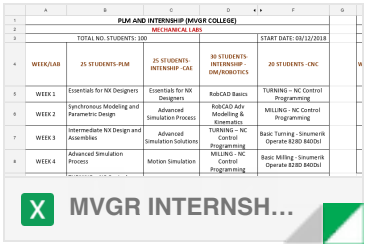
we will start the training for 75 students from 26-11-2018,please find the attachment w

A Ravi Kumar,

Associate Project Director,

APSSDC-SIEMENS Project.



PLM AND INTERNSHIP (MVGR COLLEGE)
MECHANICAL LABS
TOTAL NO. STUDENTS: 100 START DATE: 03/12/2018

WEEK/LAB	25 STUDENTS-PLM	25 STUDENTS-INTERNSHIP -CAE	30 STUDENTS INTERNSHIP - DM/ROBOTICS	20 STUDENTS -CNC
WEEK 1	Essentials for NX Designers	Essentials for NX Designers	RobCAD Basics	TURNING – NC Control Programming
WEEK 2	Synchronous Modeling and Parametric Design	Advanced Simulation Process	RobCAD Adv Modelling & Kinematics	MILLING - NC Control Programming
WEEK 3	Intermediate NX Design and Assemblies	Advanced Simulation Solutions	TURNING – NC Control Programming	Basic Turning - Sinumerik Operate 828D 840Dsl
WEEK 4	Advanced Simulation Process	Motion Simulation	MILLING - NC Control Programming	Basic Milling - Sinumerik Operate 828D 840Dsl

MVGR INTERNSH...

HOD (MVGR EEE) <eeehod@mvgrce.edu.in>
to saratkumar

--
With best regards.

Dr. Sarat Kumar Sahu
M.Tech, Ph.D., MIEEE, MIE(I),LMISTE
Professor &Head
Department of Electrical & Electronics Engineering
MVGR College of Engineering
Vizianagaram-535005

HOD (MVGR EEE) <hod.eee@mvgrce.edu.in>

Requirements for registration in APSSDC-SIEMENS CoE

3 messages

Ravi Kumar a <ravikumar.a@apssdc.in> Mon, Nov 19, 2018 at 11:20 AM
To: "aparna devi (MVGR Mech)" <aparna_devi@mvgrce.edu.in>, "Prof R Ramesh (MVGR Mech)" <dr.r.ramesh@mvgrce.edu.in>, eeehod@mvgrce.edu.in, mechhod@mvgrce.edu.in

Dear Sir/Madam,

As per our discussion please find the following procedure for registering the candidates in Skill development program of APSSDC-SIEMENS.

We require soft copy of students data in the format as enclosed (Document Name-Student List)

One faculty member from each branch must accompany the students during the training period.

Students must attend the classes from 9:00 AM to 5:00 PM (Lunch: 1PM to 2PM)

Students are advised to bring their lunch boxes (Canteen facility is not available in AU College of Engineering)

We require the following documents from each student :
1.Photo
2.Photo copy of Aadhaar
3.Photo copy of 10th
4.Photo copy of Caste certificate (BC/SC/ST)
5.College ID Card

Note:The student has to fill the application form and has to submit with the above documents on first day of training. Application form is here with enclosed

Warm Regards,

A Ravi Kumar,

Associate Project Director,

APSSDC-SIEMENS Project.

2 attachments

Student list (1).xlsx
13K

COE Application form.pdf
363K

HOD (MVGR EEE) <eeehod@mvgrce.edu.in> Fri, Nov 30, 2018 at 12:00 PM
To: ravikumar.a@apssdc.in

Sir,
I will upload the new students list by 2:30PM along with fees details.
The number of students till now registered are 60.
We will pay the fee for 60 students and give their fees details.
[Quoted text hidden]
--
With best regards.

Dr. Sarat Kumar Sahu
M.Tech, Ph.D., MIEEE, MIE(I),LMISTE

Professor &Head
Department of Electrical & Electronics Engineering
MVGR College of Engineering
Vizianagaram-535005
Andhra Pradesh, INDIA

E-mail: eeehod@mvgrce.edu.in

Office Phone No:91- 8922-241167

Cell: 91- 9490252044

HOD (MVGR EEE) <eeehod@mvgrce.edu.in> Fri, Nov 30, 2018 at 12:02 PM
To: "B.Jagannadh Ch Yadav" <badakalajagannath@gmail.com>

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2 attachments

Student list (1).xlsx
13K

COE Application form.pdf
363K

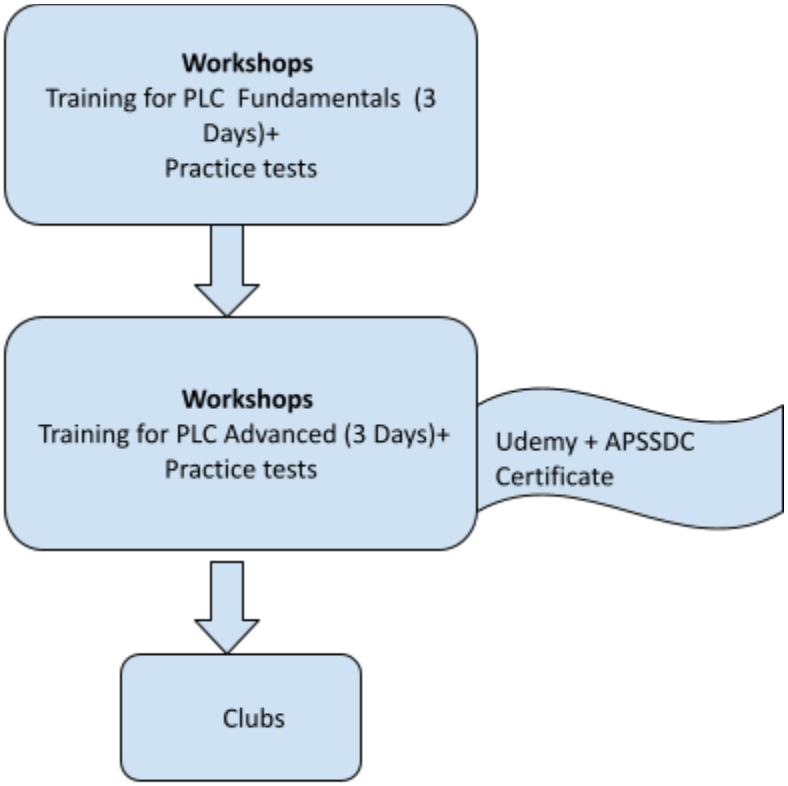
PLC

Course Overview

By providing Basics-on workshop to Students , A programmable logic controller (PLC) is an electronic device used in many industries to monitor and control building systems and production processes. Unlike PCs and Smartphones, which are designed to perform any number of roles, a PLC is designed to perform a single set of tasks, except under real-time constraints and with superior reliability and performance.

Intended audience : 2nd , 3rd Year & 4th Year

Training workflow :



Workshops:

The objective of workshop is to see that the students are well trained for the prerequisite courses of certification.

Duration: 6 days (Phase 1 + Phase -2)

Objective:

- To give basic knowledge on **PLC.**
- Projects on PLC.

Training Methodology:

- offline

Software & Kits:

- Delta WPL

Certification Agency:

Udemy +NFI : National Foundation For India

PLC Programming of Allen Bradley, Delta, Siemens, Omron & Schneider using LIVE Examples with HMI Interfacing

Assessments/Practice test: To ensure that students have understood the content covered during the session; a brief test will be conducted on LMS after every training session.This will help the student understand where he/she needs to improve . LMS (Learning and Management System) is built from OpenEdx. It contains all course related content such as hand-outs, videos and practice sessions. APSSDC will provide individual student account and Student/college wise analytics are also available

Clubs: After Workshops we will initiate clubs with one faculty and two merit students from each year in every College

Selection of the Merit students for the Club: At the end of the work shops we will select two merit students from every college based on Written Exam & Tool Test.

Advantages to be a member in Club

a. We will provide guidance for their Projects.
b. We will give priority for placement drives conducted by APSSDC.
c. Eligibility for University Innovation Fellows (UIF).
d. Priority for International programs conducted by APSSDC and etc..

Course Content & Day Wise Schedule for workshop:

PLC Fundamentals Phase 1

Day	Course content
Day-1	Introduction to Automation,History of Automation,Introduction to PLC, Introduction to PLC Programming types,Introduction about Ladder logic diagram, NO & NC switch based concept,Application problems based on NO & NC & Latching concepts,Application problems based on Latching concept.
Day-2	Introduction to Blinking concept,Application problems based on Blinking concept, Introduction to Memory coils,problems based on Memory coils & Application problems based on Memory coils, Sensor based problems.
Day-3	Introduction to Timers and Timer based Problems,Application problems based on Timers, NO&NC combination,Introduction to Counters,Counter based problems & Mini project based on all concepts like Traffic light controller.

PLC Advanced Phase 2

Day	Course content
Day-1	Introduction of Industrial Automation,Applications of Automation,History of Automation,Introduction to PLC,Introduction to PLC Programming types,Introduction about Ladder logic diagram, introduction about Basic Elements, Basic Rules Regarding Programming, Sample Program & Introduction of NO & NC switch based concept,explanation Regarding Basic Electrical Circuits Related to NO &NC,Application problems based on NO & NC
Day-2	Introduction to Latching,blinking,Application problems based on NO & NC with Latching,blinking,introduction About Memory Coils .Application problems based on Memory coils & Push button concepts, Sensor based problems & Introduction to Timers

Day-3	Real Time Applications Based On Timer concept,Application problems based on Timers,NO & NC combination,Introduction To Counter's Concept & Counter based problems,Real time Application problems based on NO & NC combination,Latches,Memory,Emergency Switches & Timers And Counters,traffic lights program by covering all the concepts.

PLC Competitions

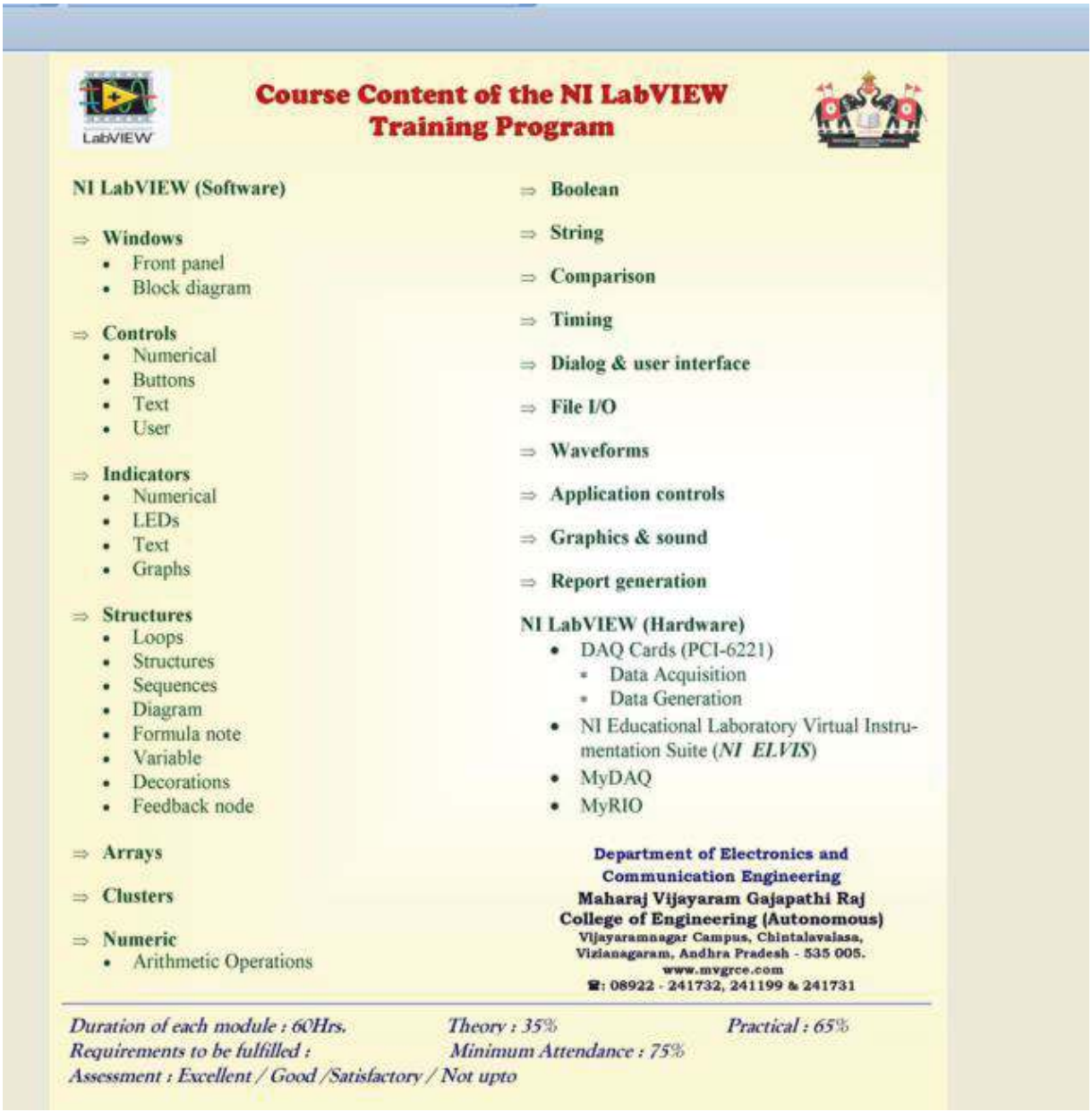
Mitsubishi Electric Cup(National Level Competition For Factory Automation):
https://www.mitsubishielectric.in/fa/mecup/about.php

Dept. of ECE

List of value added courses

1. NI Lab View
2. Embedded Systems

Brochure of NI Lab View:



Course Content of the NI LabVIEW Training Program

NI LabVIEW (Software)

⇒ **Windows**
- Front panel
- Block diagram

⇒ **Controls**
- Numerical
- Buttons
- Text
- User

⇒ **Indicators**
- Numerical
- LEDs
- Text
- Graphs

⇒ **Structures**
- Loops
- Structures
- Sequences
- Diagram
- Formula note
- Variable
- Decorations
- Feedback node

⇒ **Arrays**

⇒ **Clusters**

⇒ **Numeric**
- Arithmetic Operations

⇒ **Boolean**

⇒ **String**

⇒ **Comparison**

⇒ **Timing**

⇒ **Dialog & user interface**

⇒ **File I/O**

⇒ **Waveforms**

⇒ **Application controls**

⇒ **Graphics & sound**

⇒ **Report generation**

NI LabVIEW (Hardware)
- DAQ Cards (PCI-6221)
  - Data Acquisition
  - Data Generation
- NI Educational Laboratory Virtual Instrumentation Suite (*NI ELVIS*)
- MyDAQ
- MyRIO

Department of Electronics and Communication Engineering
Maharaj Vijayaram Gajapathi Raj College of Engineering (Autonomous)
Vijayaramnagar Campus, Chintalavalasa, Vizianagaram, Andhra Pradesh - 535 005.
www.mvgrce.com
☎: 08922 - 241732, 241199 & 241731

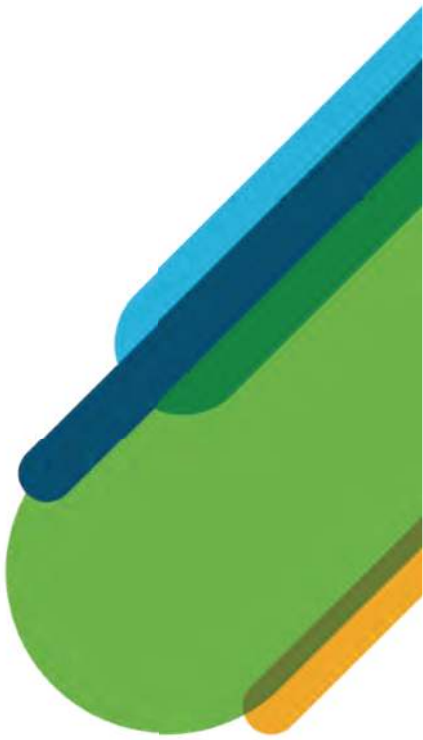
Duration of each module : 60Hrs. *Theory : 35%* *Practical : 65%*
Requirements to be fulfilled : *Minimum Attendance : 75%*
Assessment : Excellent / Good /Satisfactory / Not upto

Dept. of CSE

Networking Academy

Product Catalog

October 2020



Networking Academy

Prepare the workforce of the future

Leading-edge curriculum designed to educate students for jobs of today and tomorrow

Two Options for Course Modality

Instructor-Led

The majority of Networking Academy students take courses led by an instructor through an education institution in their local community.

Self-Paced

Online courses are self-paced and use the same curriculum taught in Networking Academy classrooms around the world.

Types of Course Offerings

Explore Courses

Easy starting points to explore opportunities in technology

- ✓ No prerequisites
- ✓ No cost
- ✓ Typically self–paced
- ✓ Between 8-30 hours

Career Courses

Equip students with real job skills for entry-level positions

- ✓ Aligned to industry-valued certifications
- ✓ Typically instructor-led and 70 hours of instruction time
- ✓ Integrated hands-on practice and interactive experiences

Complementary Offerings

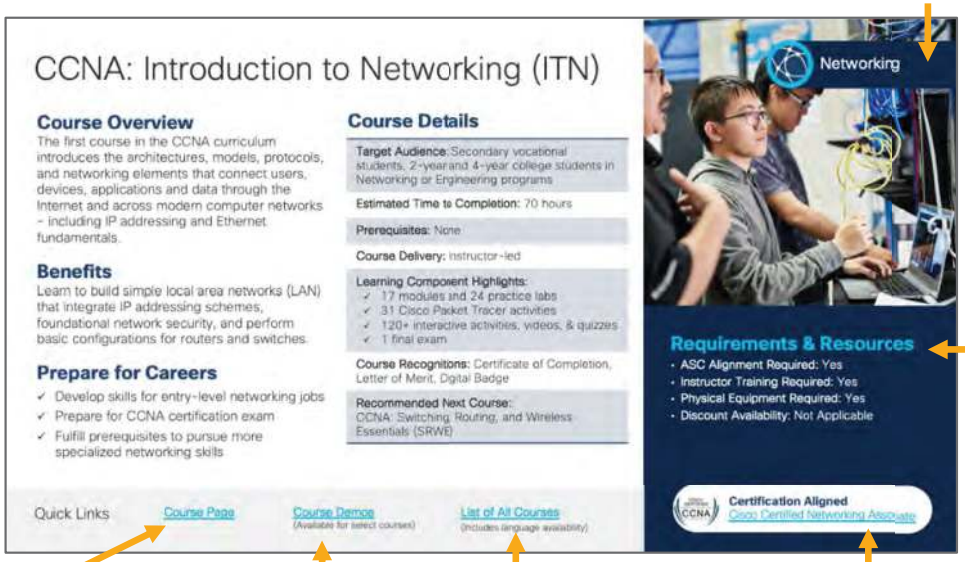
Extend your teaching with courses from Networking Academy partners

- ✓ Aligned to industry-valued certifications
- ✓ Some self-paced courses
- ✓ Some instructor-led courses for 70 hours of instruction time

Practice

Learning tools, hands-on labs, and interactive experiences are integrated into courses to build skills, not just knowledge

In This Catalog



Easy navigation by course category.

ASC Alignment Required: Due to the technical nature of some courses, Networking Academy may require that your institution receive support from an Academy Support Center (ASC).

Instructor Training Required: Some courses require accreditation or instructor training to ensure quality learning outcomes for your students.

Physical Equipment Required: Lab equipment may be required depending on the course.

Discount Availability: Discounts are available for select certification exams, for individuals meeting eligibility criteria.

Find the course page on NetAcad.com.

Course Demos are available for select courses to preview the content.

Explore the full Networking Academy course list online and filter by language. There is also a language summary matrix at the end of this catalog.

See which courses align with a certification, or get other tips about the course.

Networking Academy Curriculum Portfolio

October 2020

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Networking

Networking Essentials

Course Overview

Networking Essentials teaches networking based on environments students may encounter in daily life, including small office and home office networking. This course provides an engaging, self-paced learning experience using Packet Tracer simulation, interactive activities, and learning with your own devices at home.

Benefits

Develop a foundational understanding of the high-level network architecture and how a network operates.

Prepare for Careers

- ✓ For developers, cybersecurity, business analysts, or other professionals: gain essential networking knowledge
- ✓ For students: a launching point for many career pathways, from cybersecurity to software to business and more

Course Details

Target Audience: High school, secondary and 2-year college vocational students, college and university students studying IT and non-IT fields, career changers

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Self-Paced, Instructor-led

Learning Component Highlights:
- ✓ 20 modules and 19 practice labs
- ✓ 24 Cisco Packet Tracer activities
- ✓ 130+ interactive activities, videos, & quizzes
- ✓ 5 module exams
- ✓ 1 final exam and 1 skills assessment (Instructor-led only)

Course Recognitions: Certificate of Completion, Digital Badge (Instructor-led only)

Recommended Next Course:
CCNA: Introduction to Networks (ITN), Cybersecurity Essentials, or DevNet Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No (uses Packet Tracer and devices you already have at home)
- **Voucher Availability:** Not Applicable

Practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Introduction to Networking (ITN)

Course Overview

The first course in the CCNA curriculum introduces the architectures, models, protocols, and networking elements that connect users, devices, applications and data through the Internet and across modern computer networks – including IP addressing and Ethernet fundamentals.

Benefits

Learn to build simple local area networks (LAN) that integrate IP addressing schemes, foundational network security, and perform basic configurations for routers and switches.

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 17 modules and 24 practice labs
- ✓ 31 Cisco Packet Tracer activities
- ✓ 120+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNA: Switching, Routing, and Wireless Essentials (SRWE)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Switching, Routing, and Wireless Essentials (SRWE)

Course Overview

The second course in the CCNA curriculum focuses on switching technologies and router operations that support small-to-medium business networks and includes wireless local area networks (WLAN) and security concepts.

Benefits

Students learn key switching and routing concepts. They can perform basic network configuration and troubleshooting, identify and mitigate local area network (LAN) security threats, and configure and secure a basic WLAN.

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 16 modules and 14 practice labs
- ✓ 31 Cisco Packet Tracer activities
- ✓ 70+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNA: Enterprise Networking, Security, and Automation (ENSA)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Enterprise Networking, Security, and Automation (ENSA)

Course Overview

The final course in the CCNA series covers the architecture, security, and operation of an enterprise network, along with introducing the new ways in which network engineers interact with programmable infrastructure.

Benefits

Gain skills to configure and troubleshoot enterprise networks, learn to identify and protect against cybersecurity threats, and discover key concepts of software-defined networking, including controller-based architectures and application programming interfaces (APIs).

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 14 modules and 12 practice labs
- ✓ 29 Cisco Packet Tracer activities
- ✓ 100+ interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNP Enterprise: Core Networking (ENCOR)

Course Overview

This first course in the 2-course CCNP Enterprise series covers switching, routing, wireless, and related security topics, along with the technologies that support software-defined, programmable networks.

Benefits

Gain practical, hands-on experience and skills needed to configure, operate and troubleshoot large scale enterprise networks.

Prepare for Careers

- ✓ Develop skills for professional-level networking roles
- ✓ Prepare for the Cisco Enterprise Network Core Technologies exam (350-401 ENCOR) to earn an Enterprise Core Specialist certification
- ✓ Completion of both CCNP Enterprise courses prepares for CCNP Enterprise certification

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Recommended Preparation: CCNA or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 29 chapters and 41 practice labs
- ✓ 24 Cisco Packet Tracer activities (optional)
- ✓ 35+ interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNP Enterprise: Advance Routing (ENARSI)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Professional

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNP Enterprise: Advanced Routing (ENARSI)

Course Overview

This second of the 2-course CCNP Enterprise series focuses on implementation and troubleshooting of advanced routing and redistribution for OSPF, EIGRP and BGP along with VPN technologies, infrastructure security and management tools used in Enterprise networks.

Benefits

Gain practical, hands-on experience and skills needed to configure, operate and troubleshoot large scale enterprise networks.

Prepare for Careers

- ✓ Develop skills for professional-level networking roles
- ✓ Prepare for Cisco Enterprise Advanced Routing & Services exam (300-410 ENARSI) to earn a CCNP Specialist certification
- ✓ Completion of both CCNP Enterprise courses prepares for CCNP Enterprise certification

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Recommended Preparation: ENCOR or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 23 chapters and 40 practice labs
- ✓ 20 Cisco Packet Tracer activities (optional)
- ✓ 25+ videos & quizzes, 2 Skills Assessments
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
Broaden your skills with DevNet Associate, CyberOps Associate, Python, or Emerging Technologies Workshops

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Professional

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Operating Systems & Information Technology

Get Connected

Course Overview

Get Connected students are introduced to the Internet and experiment with various social networking sites. Talking characters and devices make this course a user-friendly environment for an audience new to Information Technology (IT).

Benefits

The digital world is upon us both personally and professionally. Gain essential skills like basic computer skills, such as how to use a computer, connect devices, and access search, email, and social media.

Explore Opportunities in Technology

- ✓ Develop your digital basics
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and general audience new to IT

Estimated Time to Completion: 30 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 chapters
- ✓ Illustrations and narrations guide students through topics
- ✓ Interactive activities, videos, & quizzes

Course Recognitions: Certificate of Completion

Recommended Next Course:
IT Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IT Essentials

Course Overview

IT Essentials covers fundamental computer and career skills for entry-level IT jobs. Students apply skills and procedures to install, configure, and troubleshoot computers, mobile devices, and software.

Benefits

Learn the fundamentals of connecting computers to networks. Plus, you'll enjoy working with Cisco Networking Academy's advanced simulation tools with hands-on labs to hone your troubleshooting skills and immediately practice what you learn!

Prepare for Careers

- ✓ Develop skills for entry-level technical support roles
- ✓ Prepare for CompTIA A+ certification exam
- ✓ Build your foundation for CCNA-level courses

Course Details

Target Audience: Secondary and 2-year college vocational students

Estimated Time to Completion: 70 hours

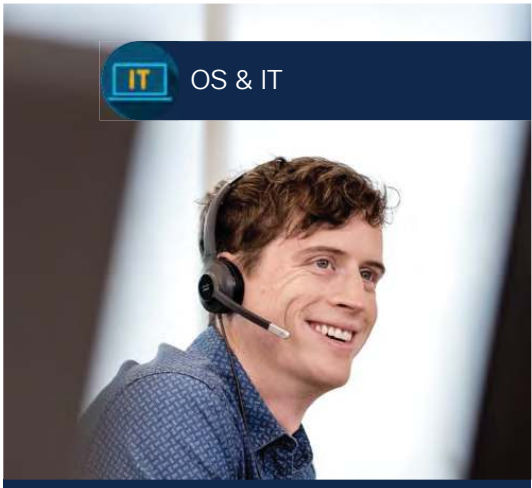
Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 14 chapters and 99 practice labs
- ✓ Cisco Packet Tracer, virtual laptop, and virtual desktop learning tools
- ✓ 29+ interactive activities
- ✓ 18+ assessments throughout the course
- ✓ 1 final and 2 practice certification exams

Course Recognitions: Certificate of Completion, Digital Badge, Letter of Merit

Recommended Next Course:
CCNA: Introduction to Networking (ITN)



Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
CompTIA A+ Certification

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux Unhatched

Course Overview

This course covers introductory back-end operating system knowledge by teaching basic installation and configuration of Linux and introducing the Linux command line.

Benefits

Learners ease into acquiring Linux knowledge without having to commit to more than 8 total hours of self-paced learning, guided step-by-step with a series of hands-on virtual machine activities.

Explore Opportunities in Technology

- ✓ Wade into the shallow end of Linux and see whether it's for you or not
- ✓ Develop your digital basics
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and general audience new to IT

Estimated Time to Completion: 6-8 hours

Prerequisites: None

Course Delivery: Self-paced

Learning Component Highlights:
- ✓ 1 module
- ✓ 20 pages
- ✓ Built-in Linux machine with activities
- ✓ 1 assessment

Course Recognitions: Letter of Completion

Recommended Next Course:
NDG Linux Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux Essentials

Course Overview

This course teaches fundamentals of the Linux operating system, command line, and open source programming concepts.

Benefits

Nearly every IT job requires some Linux knowledge. Gain hands-on practice with Linux commands through the Linux virtual machine embedded in the course.

Prepare for Careers

- ✓ Develop fundamental operating system skills for entry-level IT jobs
- ✓ Prepare for LPI certificate exam
- ✓ Fulfill prerequisites to pursue more specialized IT and networking skills

Course Details

Target Audience: Secondary and 2-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 16 chapters and 13 practice labs
- ✓ Built-in virtual machine to experiment with Linux commands
- ✓ Learner-directed activities
- ✓ Chapter, midterm, and final exams

Course Recognitions: Letter of Completion

Recommended Next Course:
NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
Linux Professional Institute (LPI) Linux Essentials Professional Development Certificate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux I and II

Course Overview

A 2-course series for aspiring Linux system administrators. Covers performing maintenance tasks on the command line, installing and configuring a computer running Linux, and configuring basic networking, using virtual machines running Linux.

Benefits

More rigorous and comprehensive than NDG Linux Essentials, this course develops your Linux mastery. Gain hands-on practice with Linux commands through the Linux virtual machine embedded in the course

Prepare for Careers

- ✓ Develop skills for careers in cloud computing, cybersecurity, information systems, networking, programming, software development, big data, and more
- ✓ Prepare for LPIC-1 certification exams

Course Details

Target Audience: 2-year and 4-year college students

Estimated Time to Completion: 140 hours

Recommended Preparation: NDG Linux Essentials or equivalent

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ Built-in virtual machine to experiment with Linux commands
- ✓ Practice labs and activities
- ✓ Chapter, midterm, and final exams

Course Recognitions: Letter of Completion

Recommended Next Course:
DevNet Associate

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required: No**
- **Discount Availability:** Yes
- **Cost:** Fee for self-paced classes. Cost for instructor-led classes is determined by the institution.

Certification Aligned
Linux Professional Institute LPIC-1

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programming

PCAP: Programming Essentials in Python

Course Overview

Designed as easy to understand and beginner-friendly course focusing on various data collections, manipulation tools, logic and bit operations and creating basic REST APIs.

Benefits

Learn to design, write, debug, and run programs encoded in the Python language. No prior programming knowledge is required. The course begins with the very basics guiding you step by step until you become adept at solving more complex problems.

Prepare for Careers

- ✓ Develop fundamental programming skills
- ✓ Prepare for PCEP and PCAP certification exam
- ✓ Build your foundation to pursue more specialized networking and software development skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 60-70 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 modules of interactive instructional content
- ✓ 30+ practice labs
- ✓ Built-in online tool for labs and practice
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
DevNet Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
PCEP: Certified Entry-Level Python Programmer
PCAP: Certified Associate in Python Programming

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CLA: Programming Essentials in C

Course Overview

This beginner course introduces the the universal concepts of computer programming using the C language, and teaches the syntax, semantics, and data types of the C language.

Benefits

Build transferable skills. When you learn C, you develop overarching fundamentals for all programming languages. Practice your skills through hands-on labs and write your own programs!

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CLA certification exam
- ✓ Fulfill prerequisites to pursue more advanced programming skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 9 modules of interactive instructional content
- ✓ 80+ practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, CCNA, NDG Linux Essentials

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CLA: C Programming Language Certified Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CLP: Advanced Programming in C

Course Overview

This advanced course teaches intermediate to advanced coding such as C handling variable number of parameters (<stdarg.h>), low level IO (<unistd.h>), memory and strings (<string.h> et al.), processes and threads, floats and ints (<math.h>, <fenv.h>, <inttypes.h> et al), and network sockets.

Benefits

Extend your programming knowledge and proficiency. Learn to think harder and deeper about programming concepts.

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CLP certification exam
- ✓ Set yourself up to succeed in jobs related to software development, network engineering, and system administration

Course Details

Target Audience: 2-year and 4-year college and university students

Estimated Time to Completion: 70 hours

Prerequisites: CLA: Programming Essentials in C course, CLA certification, or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules of interactive instructional content
- ✓ 18 practice labs
- ✓ Quizzes, chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CLP: C Certified Professional Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CPA: Programming Essentials in C++

Course Overview

This beginner course introduces the basics of programming in the C++ language and the fundamental notions and techniques used in object-oriented programming.

Benefits

Build transferable skills. When you learn C, you develop overarching fundamentals for all programming languages. Practice your skills through hands-on labs and write your own programs!

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CPA certification exam
- ✓ Fulfill prerequisites to pursue more advanced programming skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules of interactive instructional content
- ✓ 100+ practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, NDG Linux Essentials, DevNet Associate

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CPA: C++ Certified Associate Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CPP: Advanced Programming in C++

Course Overview

This advanced course teaches intermediate to advanced coding such as C++ template mechanism, understanding and using property template classes and methods, and the C++ STL library including solving common programming problems and the IO part.

Benefits

Extend your programming knowledge and proficiency. Learn to think harder and deeper about programming concepts.

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CPP certification exam
- ✓ Set yourself up to succeed in jobs related to software development, network engineering, and system administration

Course Details

Target Audience: 2-year and 4-year college and university students

Estimated Time to Completion: 70 hours

Prerequisites: CPA: Programming Essentials in C++ course, CPA certification, or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 9 modules of interactive instructional content
- ✓ 65 practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
CCNP Enterprise, NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Certification Aligned
CPP: C++ Certified Professional Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programmable Infrastructure

Internet of Things

Introduction to Internet of Things (IoT)

Course Overview

An introduction to the Internet of Things and how it enables Digital Transformation along with emerging technologies such as data analytics, artificial intelligence, and cybersecurity.

The course also highlights the importance of Intent-Based Networking using a software-driven approach and machine learning to be able to connect and secure tens of billions of new devices with ease.

Benefits

Gain a comprehensive view of how emerging technologies are shaping the digital business.

Explore Opportunities in Technology

- ✓ Develop your digital basics
- ✓ Explore the career opportunities in this new emerging technologies landscape

Course Details

Target Audience: Secondary, vocational, 2-year college, and general audience

Estimated Time to Completion: 20 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 6 chapters
- ✓ 17 practice labs (plus 4 optional labs)
- ✓ 7 Cisco Packet Tracer activities
- ✓ 40+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Insertion Points:
A great start for any learning path, and way to introduce the digital transformation before or during any Career course

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
  (Optional labs require additional hardware)
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Fundamentals: Connecting Things

Course Overview

This highly hands-on course introduces how to securely interconnect sensors, actuators, microcontrollers, single-board computers, and cloud services over Internet Protocol (IP) networks to create an end-to-end IoT system.

Benefits

Develop the interdisciplinary skillset required to prototype an IoT solution for a specific business case with a strong focus on the security considerations for emerging technologies.

Prepare for Careers

- ✓ Develop an entrepreneurial and design-thinking foundation for IoT job families that exist today and in the future
- ✓ Practice integrating hardware, software, data analytics, and security concepts
- ✓ Build your foundation to pursue more specialized networking, software development, and IoT skills

Course Details

Target Audience: Secondary, vocational, 2-year and 4-year college, 4-year university students

Estimated Time to Completion: 40-50 hours

Prerequisites: Basic programming, networking, and electronics

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 35 practice labs
- ✓ 9 Cisco Packet Tracer activities
- ✓ 32+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
IoT Fundamentals: Big Data & Analytics or Hackathon Playbook (Design Thinking)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Fundamentals: Big Data & Analytics

Course Overview

This highly hands-on course introduces how to use Python data libraries to create a pipeline to acquire, transform and visualize data collected from IoT sensors and machines.

Benefits

The transformative element of any IoT system is the data that can be collected from it. The ability to extract data and using data analytics techniques to gain insights are skills highly-valued by employers.

Prepare for Careers

- ✓ Develop entrepreneurial and design-thinking skills for IoT job families that exist today and in the future
- ✓ Practice integrating hardware, software, data analytics, and security concepts
- ✓ Build your foundation to pursue more specialized networking, software development, and IoT skills

Course Details

Target Audience: 2-year and 4-year college, 4-year university students

Estimated Time to Completion: 40-50 hours

Prerequisites: IoT Fundamentals: Connecting Things

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 11 practice labs
- ✓ 18 Jupyter Notebooks (with Python code)
- ✓ 35+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
IoT Fundamentals: Hackathon Playbook

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Hackathon Playbook (Design Thinking)

Course Overview

The Hackathon Playbook is a comprehensive framework of tools and templates to prepare and run a Hackathon as a result of best practices and lessons-learned collected from the global execution of IoT Hackathons within Networking Academy and by other organizers.

Benefits

Practice design thinking through a hands-on project. Deepen your multidisciplinary IoT and data skills by defining, designing, prototyping, and presenting an IoT solution to a panel of industry experts and peers.

Prepare for Careers

- ✓ Build a design thinking mindset
- ✓ Gain resume-worthy experience working on a real prototype
- ✓ Get feedback and mentorship from industry experts

Course Details

Target Audience: Secondary, vocational, 2-year and 4-year college, 4-Year university students

Estimated Time to Completion: 20-30 hours

Prerequisites: IoT Fundamentals: Connecting Things and/or Big Data and Analytics

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ Hands-on project

Course Recognitions: Certificate of Completion

Recommended Next Course:
Any Networking Academy Career course, or an industry IoT training program

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programmable Infrastructure

Infrastructure Automation

DevNet Associate

Course Overview

This course introduces the methodologies and tools of modern software development, applied to the IT and Network operations. It covers a 360 view of the domain including microservices, testing, containers and DevOps, as well as securely automating infrastructures with Application Programming Interfaces (APIs).

Benefits

Gain practical, relevant, hands-on lab experience, including programming in Python, using GIT and common data formats (JSON, XML and YAML), deploying applications as containers, using Continuous Integration/Continuous Deployment (CI/CD) pipelines, and automating infrastructure using code.

Prepare for Careers

- ✓ Develop skills for entry-level software development and infrastructure automation jobs
- ✓ Prepare for DevNet Associate certification exam

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students and participants of coding bootcamps

Estimated Time to Completion: 70 hours

Recommended Preparation:
Object-oriented coding skills, equivalent to:
PCAP: Programming Essentials in Python
Fundamental skills of networking, equivalent to:
CCNA: Introduction to Networks

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules and 23 practice labs
- ✓ 5 Cisco Packet Tracer activities
- ✓ 6 videos, 8 quizzes, 8 module exams
- ✓ 1 final exam, 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course: CCNA, CCNP Enterprise, or CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** No (Uses Virtual Machines on the student's computer)
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified DevNet Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Experimenting with REST APIs using Webex Teams

Course Overview

This workshop introduces the basic competencies needed to create applications and automate tasks using REST APIs, the most popular architecture for software integration in IT.

Benefits

Learn the value of the REST APIs architecture, practice Python programming skills, and perform basic software integration and automation using real-world APIs on an enterprise collaboration platform (Webex Teams).

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-Year University students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 9 practice labs
- ✓ 13 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Insertion Points:
PCAP Programming Essentials in Python, IoT Fundamentals: Connecting Things

Other Insertion Points:
IT Essentials, CCNA: Introduction to Networks

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Network Programmability with Cisco APIC-EM

Course Overview

This workshop introduces the basic competencies to operate and automate management tasks on a controller-based network.

Benefits

Understand the value of network programmability. Use the Cisco DevNet Sandbox to learn how to interact with programmable devices using real-world Application Programming Interfaces (APIs) on Cisco APIC-EM programmable controllers.

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-year University students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming, CCNA: Switching, Routing, and Wireless Essentials (SRWE) or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 5 practice labs
- ✓ 13 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Insertion Points:
- After CCNA: SRWE
- With CCNA Security or CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Model-Driven Programmability

Course Overview

This workshop introduces students to device level programmability. By defining standardized device models and APIs, network device configuration and management tasks can be automated, making it easier to manage network devices at scale.

Benefits

Learn key model-driven programmability concepts: YANG to model networking devices, RESTCONF and NETCONF for device-level APIs, and Python scripting to programmatically retrieve and update device configurations.

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-year university students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming, CCNA: Switching, Routing, and Wireless Essentials (SRWE) or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 10 practice labs
- ✓ 10 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Insertion Points:
- After CCNA: SRWE
- With CCNA Security or CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Cybersecurity

Introduction to Cybersecurity

Course Overview

This course explores cyber trends, threats, and staying safe in cyberspace, and protecting personal and company data.

Benefits

Today's interconnected world makes everyone more susceptible to cyber-attacks. Learn how to protect your personal data and privacy online and in social media, and why more and more IT jobs require cybersecurity awareness and understanding.

Explore Opportunities in Technology

- ✓ Explore the world of cybersecurity and how it relates to YOU
- ✓ Develop your cybersecurity basics for a secure and safe digital life
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and 2-Year college students, general audience

Estimated Time to Completion: 15 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 modules and 7 practice labs
- ✓ Interactive activities & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: Cybersecurity Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Career Advice
Tips for getting started in your career

Cybersecurity Essentials

Course Overview

This course covers essential knowledge for all cybersecurity domains including information security, systems security, network security, ethics and laws, and defense and mitigation techniques used in protecting businesses

Benefits

The demand for security professionals continues to grow. Develop a foundational understanding of cybercrime, security principles, technologies, and procedures used to defend networks.

Explore Opportunities in Technology

- ✓ Build your cybersecurity foundation
- ✓ Take the next step in exploring the many career possibilities in cybersecurity
- ✓ See if you want to pursue job roles in networking or cybersecurity

Course Details

Target Audience: Secondary and 2-year college vocational students

Estimated Time to Completion: 30 hours

Prerequisites: Introduction to Cybersecurity

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 8 chapters and 12 practice labs
- ✓ 10 Cisco Packet Tracer activities
- ✓ 40+ interactive activities & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CyberOps Associate

Course Overview

This course introduces the core security concepts and skills needed to monitor, detect, analyze, and respond to cybercrime, cyberespionage, insider threats, advanced persistent threats, regulatory requirements, and other cybersecurity issues facing organizations.

Benefits

Gain practical, hands-on skills needed to maintain and ensure security operational readiness of secure networked systems.

Prepare for Careers

- ✓ Develop skills for entry-level security operations center (SOC) jobs
- ✓ Prepare for CyberOps Associate certification
- ✓ Pursue a career in cybersecurity operations, a rapidly-growing, exciting new area that spans all industries

Course Details

Target Audience: Students enrolled in technology degree programs at higher education institutions; IT professionals who wants to pursue a career in Security Operations

Estimated Time to Completion: 70 hours

Recommended Preparation: Introduction to Cybersecurity, Cybersecurity Essentials

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 28 chapters and 46+ practice labs
- ✓ 6 Cisco Packet Tracer activities
- ✓ 113 interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course: CCNA Security, IoT Security

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** No (Uses Virtual Machines on the student's computer)
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified CyberOps Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA Security

Course Overview

This course introduces the core security concepts and skills needed to troubleshoot and monitor computer networks and help ensure the integrity of devices and data.

Benefits

Gain practical, hands-on skills to design, implement, and manage network security systems and ensure their integrity.

Prepare for Careers

- ✓ Build expertise in network security and data protection
- ✓ Develop skills for entry-level network security specialist roles
- ✓ Gain industry in-demand skills aligned with the National Institute for Standards and Technology (NIST) Cybersecurity Framework

Course Details

Target Audience: 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: CCNA: Switching, Routing, and Wireless Essentials (or equivalent)

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 11 chapters and 16 practice labs
- ✓ 13 Cisco Packet Tracer activities
- ✓ 65+ interactive activities, quizzes, chapter exams, and skills assessments
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit

Recommended Next Course: CyberOps Associate, IoT Security

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Security

Course Overview

The explosive growth of connected IoT devices also increases the exposure to security threats. Learn to perform vulnerability and risk assessments, and research and recommend risk mitigation strategies for common security threats in IoT systems.

Benefits

Learn practical tools for evaluating security vulnerabilities, perform threat modeling, and recommend threat mitigation measures. Gain hands-on, transferable skills relevant across IoT and other network architectures.

Prepare for Careers

- ✓ Develop skills for entry-level roles in the rapidly growing IoT and security domains
- ✓ Increase awareness of emerging technologies in the IoT Security space, such as Blockchain

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-Year University students

Estimated Time to Completion: 50 hours

Prerequisites:
- IoT Fundamentals: Connecting Things
- Networking Essentials and Cybersecurity Essentials (or equivalent)

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 24 practice labs
- ✓ 5 Cisco Packet Tracer activities
- ✓ 50+ interactive activities, videos, & quizzes
- ✓ 1 hands-on capstone activity
- ✓ 1 IoT Security game with 10 missions
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
CCNA Security or CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Yes

Features the IoT Security Game!

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Additional Courses

Entrepreneurship

Course Overview

This course teaches business and financial skills, behaviors, and attitudes, to help students develop an entrepreneurial mindset. Students learn by completing a series of interactive case studies that present realistic scenarios.

Benefits

Supplement your technical expertise with with entrepreneurial thinking, business development, and financial management skills.

Explore Opportunities in Technology

- ✓ Explore how to think like an entrepreneur
- ✓ Expand your mindset and employability with skills complementary to IT expertise
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: General audience

Estimated Time to Completion: 15 hours

Recommended Preparation:
CCNA: Introduction to Networks

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 7 modules with interactive, online case studies

Course Recognitions: Certificate of Completion

Recommended Next Course:
Hackathon Playbook (Design Thinking)

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Practice

Hands-on tools & interactive experiences
to build skills, not just knowledge

Hands-On Practice

A key pillar of Networking Academy

- Motivate your students with exciting experiences that make learning very real
- Accelerate and optimize each student's path to career-ready skills
- Build student confidence: "I can do this!"
- Developed by learning scientists & subject-matter experts

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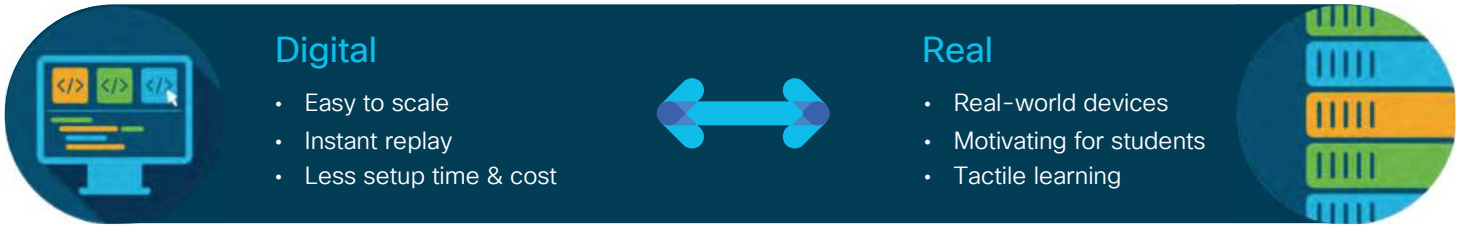
A Suite of Lab Environments

Options ranging from simulation to physical hardware



Simulation with Packet Tracer

Virtualized Equipment

Virtual Machines

Prototyping Lab

Remote Equipment

Physical Hardware

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Packet Tracer

Overview

Cisco Packet Tracer is a powerful simulation and visualization learning environment. Practice building simple and complex networks across a variety of devices and extend beyond routers and switches.

Benefits

Teach complex concepts without complex hardware. Leverage the versatility of simulation for lectures, labs, games, homework, assessments, and competitions.

Build Skills for Success

- ✓ Quickly try, experiment, learn, repeat
- ✓ Practice teamwork, critical thinking and creative problem solving skills
- ✓ Integration with online assessment engine prepares students for hands-on assessments

Details

Use it to:

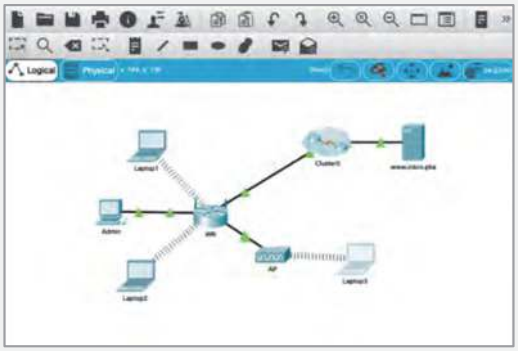
- Visualize networks using everyday examples
- Build your own simulated networks
- Investigate and troubleshoot network functionality using simulation mode
- Practice configuring network and IoT devices

How to Access:
Enroll in Intro to Packet Tracer course to download desktop version

Courses that use Packet Tracer include:

- Networking Essentials
- Cybersecurity Essentials
- IT Essentials
- Introduction to Internet of Things (IoT)
- CCNA
- CCNP Enterprise
- CCNA Security
- CyberOps Associate

Practice



Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Quick Links

Packet Tracer Landing Page

Introduction to Packet Tracer Course Page

Teaching with Packet Tracer

Introduction to Packet Tracer

Course Overview

The Introduction to Packet Tracer series is designed for new users of Packet Tracer for self-study and familiarization with the tool used in many Networking Academy courses. Packet Tracer courses are available for the desktop and for mobile (Android and iOS).

Benefits

The Introduction to Packet Tracer series introduces tips and best practices to help instructors and students use Cisco Packet Tracer as an effective and engaging learning and assessment tool.

Explore Opportunities in Technology

- ✓ Learn the power of simulation tools to build and investigate networks in software
- ✓ Get familiar using Cisco Packet Tracer, a key learning tool you will use in NetAcad courses

Course Details

Target Audience: General audience

Estimated Time to Completion: 10 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 8 chapters with instructional videos
- ✓ 13 Cisco Packet Tracer activities
- ✓ Sample files
- ✓ 2 quizzes

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: Networking Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Virtual Machines (VM)

Overview

Virtual machines are virtual environments that emulate a computer system. These self-contained virtual environments let students explore systems to the breaking point without causing actual damage.

Benefits

Experiment and explore in a low-risk environment. Deliberately test security threats and malware in a safe environment.

Build Skills for Success

- ✓ Hands-on cybersecurity practice
- ✓ Students become familiar with virtual machines to prepare for on-the-job skills

Details

Use it to:

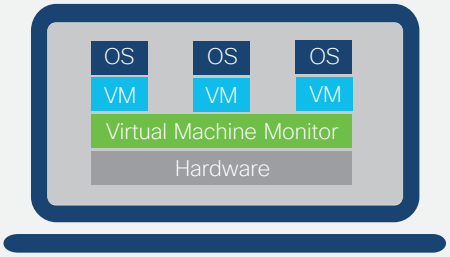
- Teach virtual machine technology
- Simulate real-world cybersecurity threat scenarios
- Create opportunities for ethical hacking, security monitoring, analysis, and resolution

How to Access:
Free software download from Oracle VirtualBox
https://www.oracle.com/virtualization/technologies/vm/downloads/virtualbox-downloads.html

Courses that use Virtual Machines include:

- CCNA
- CyberOps Associate
- Emerging Technologies Workshop: Model-Driven Programmability
- DevNet Associate

Practice



Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Prototyping Lab (PL App)

Overview

Dive into the world of sensors and connected things. The Prototyping Lab Kit uses a Raspberry Pi and Arduino setup to create an end-to-end IoT system on a lab table.

Benefits

Lab setup is easy with low-cost hardware and app download. Use real devices & code to collect, analyze, and present data from the physical world.

Build Skills for Success

- ✓ Spark entrepreneurial and systems thinking
- ✓ Students gain hands-on experience with an entire IoT system
- ✓ Build programming skills with Blockly visual programming or coding in Python

Details

Use it to:

- Acquire physical data with Arduino
- Collect and analyze data on Raspberry Pi
- Visualize data with Jupyter Notebook
- Connect to cloud applications with REST APIs

How to Access:

Prototyping Lab is comprised of the Prototyping Lab Kit (hardware) and Prototyping Lab App (software).

Find the hardware list and software download links on the Resources page: https://www.netacad.com/portal/resources/course-resources/cisco-prototyping-lab-resources

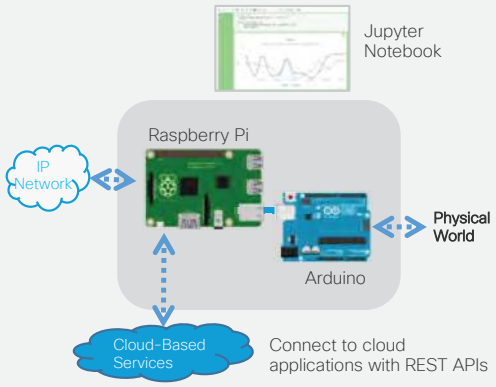
Courses that use Prototyping Lab include:

- IoT Fundamentals: Connecting Things
- IoT Fundamentals: Big Data & Analytics
- Hackathon Playbook (Design Thinking)
- IoT Security

Prototyping Lab Kit includes:

- Raspberry Pi 3 CanaKit Ultimate Starter Kit (or equivalent)
- Cables, sensors, and actuators
- SparkFun Inventor's Kit for Arduino v3.2 (or equivalent)
- Prototyping Lab App

Practice



Requirements & Resources

- **Cost:** Yes (for hardware); Free software download

Hands-on tools & interactive experiences to build skills, not just knowledge

Remote Equipment: NDG NETLAB+

Overview

Connect to real hardware through the web. Available through Networking Academy partnerships:

NDG NETLAB+ provides cloud-based, remote access to networking equipment and PCs.

Benefits

Reduce your setup time for complex labs with on-demand remote access to lab equipment when you need it.

Build Skills for Success

- ✓ Provide practice opportunities for students to complete labs from anywhere
- ✓ Supplement your lab offerings when physical hardware is not available at your institution

Details

Use it to:

- Access remote IT equipment through a web browser
- Reduce your lab setup time

How to Access:
Learn more at the NDG NETLAB+ page for Networking Academy.
https://www.netdevgroup.com/content/cnap/

Courses that use Remote Equipment include:

- CCNA
- CCNP Enterprise
- IT Essentials
- CyberOps Associate
- CCNA Security

Practice

In partnership with

NDG NETLAB+

Requirements & Resources

- **Cost:** Yes

Hands-on tools & interactive experiences to build skills, not just knowledge

Remote Equipment: DevNet Sandbox

Overview

Connect to real hardware through the web. Available through Networking Academy partnerships:

Cisco DevNet Sandbox offers packaged labs for software development, testing APIs, training, hackathons, and more.

Benefits

Reduce your setup time for complex labs with on-demand remote access to lab equipment when you need it.

Build Skills for Success

- ✓ Students get experience running their code against live network infrastructure
- ✓ Practice working in a sandbox environment just like on-the-job software developers

Details

Use it to:

- Interact with live network infrastructure and programmable devices using real-world Application Programming Interfaces (APIs)

How to Access:

Learn more at the Cisco DevNet Sandbox page https://developer.cisco.com/site/sandbox/

Courses that use Remote Equipment include:

- Workshop: Experimenting with REST APIs
- Workshop: Network Programmability
- Workshop: Model-Driven Programmability
- DevNet Associate

Practice

DEVNET DevNet Sandbox

Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Physical Hardware

Overview

Bring the real world inside the classroom so students can practice physical, sensory skills. Seeing and exploring with real equipment makes the abstract more tangible.

Benefits

Excite learners to consider career pathways in networking technology, and increase retention through tactile learning.

Build Skills for Success

- ✓ Provide hands-on practice with the same devices found in the work environment
- ✓ Students gain real experience even before on-the-job training
- ✓ Build transferable, career-ready skills

Details

How to Access:

1. Contact a local Cisco Reseller Partner for pricing and order fulfillment. Use Partner Finder to find one near you.
2. Consider working with an Academy Support Center (ASC) who can help you choose the best way to secure equipment needed for your location. They may offer loaner equipment or used equipment options

Courses that use Physical Hardware include:

- Networking Essentials
- IT Essentials
- CCNA
- CCNP Enterprise
- CCNA Security
- IoT Security

Requirements & Resources

- **Cost:** Yes

Discounts

Equipment discounts are available for Networking Academy institutions. Available for Cisco equipment needed for Networking Academy courses and labs when purchased through a Cisco Reseller Partner.

Hands-on tools & interactive experiences to build skills, not just knowledge

Language Availability

October 2020

Explore Course Languages

Explore	Arabic	Chinese-Simplified	Chinese-Traditional	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hindi	Hungarian	Indonesian	Italian	Japanese	Kazakh	Korean	Polish	Portuguese-Brazil	Portuguese-Portugal	Romanian	Russian	Spanish	Turkish	Ukrainian
Cybersecurity Essentials		✓				✓	✓		✓						✓				✓			✓	✓		✓
Entrepreneurship	✓	✓	✓			✓	✓			✓				✓					✓				✓		
Get Connected		✓	✓			✓	✓		✓		✓			✓					✓	✓			✓		
Introduction to Cybersecurity	✓	✓			✓	✓	✓		✓	✓			✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Introduction to IoT / Introduction to IoE	✓	✓	✓		✓	✓	✓		✓	✓				✓	✓	✓		✓	✓			✓	✓		✓
Introduction to Packet Tracer						✓																			✓
Networking Essentials 1.0	✓	✓				✓	✓		✓						✓				✓			✓	✓		
NDG Linux Unhatched						✓	✓		✓					✓									✓		

Career Course Languages

October 2020

Career	Arabic	Chinese-Simplified	Chinese-Traditional	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hindi	Hungarian	Indonesian	Italian	Japanese	Kazakh	Korean	Polish	Portuguese-Brazil	Portuguese-Portugal	Romanian	Russian	Spanish	Turkish	Ukrainian
CCNA Cybersecurity Operations		✓	✓			✓	✓								✓							✓	✓		
CCNA R&S: Connecting Networks	✓	✓		✓		✓	✓					✓			✓			✓	✓			✓	✓	✓	
CCNA R&S: Introduction to Networks	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓		✓	✓			✓	✓		✓	✓	✓	✓	
CCNA R&S: Routing and Switching Essentials	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓			✓			✓	✓		✓	✓	✓	✓	
CCNA R&S: Scaling Networks	✓	✓		✓		✓	✓					✓			✓			✓	✓			✓	✓	✓	
CCNA Security		✓				✓																✓			
CCNA: Enterprise Networking, Security, and Automation	✓	✓				✓	✓												✓			✓	✓		
CCNA: Introduction to Networks	✓	✓				✓	✓		✓									✓	✓			✓	✓		✓
CCNA: Switching, Routing, and Wireless Essentials	✓	✓				✓	✓												✓			✓	✓		
CCNP Enterprise: Advanced Routing						✓																			
CCNP Enterprise: Core Networking						✓																			
CyberOps Associate						✓																			
DevNet Associate						✓																			
Emerging Technologies Workshop - Experimenting with REST APIs using Webex Teams						✓																			
Emerging Technologies Workshop - Model Driven Programmability						✓																			
Emerging Technologies Workshop - Network Programmability with Cisco APIC-EM						✓																			
IoT Fundamentals: Big Data & Analytics		✓				✓	✓																✓		
IoT Fundamentals: Connecting Things		✓				✓	✓		✓														✓		✓
IoT Fundamentals: Hackathon Playbook						✓																	✓		✓
IoT Fundamentals: IoT Security		✓				✓																			
IT Essentials	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓		✓	✓		✓	✓	✓	✓	✓
Networking Essentials 2.0						✓																			
NDG Linux Essentials						✓																	✓		
PCAP - Programming Essentials in Python						✓												✓					✓		

October 2020

Complementary Offerings Languages

Complementary	Arabic	Chinese-S	Chinese-T	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hungarian	Italian	Japan.	Kazakh	Korean	Polish	Portuguese	Romanian	Russian	Spanish	Turkish	Ukrainian
NDG Linux I and II						✓																
CLA: Programming Essentials in C						✓																
CLP: Advanced Programming in C						✓																
CPA: Programming Essentials in C++						✓																
CPP: Advanced Programming in C++						✓																

Quick Links

- Networking Academy Website – netacad.com
- Networking Academy Program Overview
- Helpful Program Resources, including NetAcad Program FAQ
- Course Demos (available for select courses)
- Cisco Interactive Course Pathways
- Employment Opportunities (Talent Bridge)
- Remote Teaching & Learning – Tools and Tips

Dept. of MBA

EXCEL TRAINING

Investing In a Better Future

PREPARED FOR:

MVGR COLLEGE OF ENGINEERING, VZM

PREPARED BY:

S&S ACADEMY for CA, Vizag

DELIVERED ON:

09/01/2020

Covering Letter

To

Principal Sir,

MVGR College of Engineering,

Vijayanagaram.

Dear Sri KVL Raju Sir,

We would be thankful to you for providing this opportunity at MVGR colleges of Engineering to offer this course to students. We believe that job oriented skilful training programs would help the students to secure good jobs and perform their job efficiently. We have given complete details of our course as attachment to this covering letter for your kind perusal. The ideal batch size is determined as 30 students for the programme.

The fees for MS Excel programme for a batch of 30 students is quoted below-

Particulars	**No of Hours**	**Total (Rs)**
Total number hours **(Revised Estimated)**	**45**	**1,20,000**

Sincerely,

Partner

S&S Academy

About and Journey of S&S Academy:

The institution founded by two young Chartered Accountants after working in multinational companies with a motive to provide quality education to commerce students. The institution organizes the coaching classes for CA and CMA students in Visakhapatnam. We have seen that there is huge gap between the skill sets acquired by students and expectation from the prospective employers and understood that in the progressive world the job oriented training programs would help the students to bridge that gap and make them competitive. We have taken an initiate to organize practical training classes with our vast experience which will benefit the students to enhance their skill sets.

About the course module and approach:

The course module has been designed such that all students shall get equipped with the essential knowledge requirement of prospective employer. The course will also make the students more skilful and efficient in their job functions.

The initial proposal for providing the practical training classes on MS-Excel and Tally.ERP9 well received and we thank for your kind co-operation and support to make our programs successful. As per our initial meetings and subsequent further discussions, we have finalized the course program which would best serve all MBA students.

The team of two Chartered Accountants and with one support staff will organize this training program at premises of MVGR College of Engineering. The course program and time table of MS Excel has been presented below –

Day	Coverage areas
Day 1	1. Navigation through various excel options, ribbons, tabs and functions in MS Excel and understanding of Quick Access Tool bar, Dialog box and

	Customization, cool tips and tricks in ribbon 2. Data entry as Text, Numeric, Date, Formula etc. and Date edit, formatting, alignment, Fonts, size etc. 3. Selecting cells/ranges , Merge, Split or delete cells, wrap text, Moving cells/ ranges, Filter and Custom Filter 4. Find & Replace, Paste Special options, Moving/copying sheets, Adding/deleting work books 5. Freeze panes, Comparison work sheets side by side, Hiding/un-hiding sheets, Protecting workbook , Sorting the data, Filters, Drag and Drop, Auto fill data, Custom fill data and Flash fill data 6. Relative references v. Absolute references, Formulas v. Functions – Rules and Procedures 7. How to use commands, arguments etc. Understanding of various charts, chart layout, style etc. Data bars, Colour scales and Icon sets using Conditional formatting 8. Types of Sparklines, design and changes
Day 2	1. Sum, Sumif, Sumifs, Sumproduct, Autosum, 3D Sum Functions etc. 2. Count, counta, Countif, Countblank Functions etc. 3. Average, Averagea, Averageif, Averageifs Functions etc. 4. Minimum, Maximum, Large, Small Functions etc. 5. And, OR, NOT, TRUE, FALSE, IF Function, IFERROR Function, IS Function etc. 6. Vlookup, Hlookup Functions and Choose function 7. Vlook-up v. Index Match 8. Tranpose, Match, Offset, Hyperlink, etc. 9. Goal seek Functions
Day 3	1. Creating Pivot Table, Refreshing data 2. Filters, Selection, un-selection, grouping and ungrouping in Pivot table 3. Pivot Charts creation and auto updation

	4. Advanced Pivot Table – Calculated Fields, Relations etc. 5. Day, Hour, Date, Datevalue, Weekday, Network days, workday functions 6. Compare List, Get unique list, Get Close Match, Get last value of list, Last occurrence of item 7. Count number of words, Extract user name from email, Extract data using drop down list
Day 4	1. Creating named ranges, managing named ranges & creating dynamic named ranges using OFFSET and INDEX Formulas 2. Data validation criteria, Input Message, Circle invalid entries, Dependent validations, Disguide numbers as text and creating dynamic drop down 3. Formulas in conditional formatting 4. Creating dynamic search 5. Adding, modifying and deleting comments in Excel 6. Gauge, Water fall, Gantt, Waffle, Pareto Charts etc. 7. Dynamic Charts, Dynamic Target Line etc.
Day 5	1. Sorting or analysing data with different case studies using Goal seek, Data Table , Scenario Manager etc. 2. Problem solving with different powerful array formulas 3. Import of data from Word, XML, CSV file, MS Access, SQL data base etc. 4. Absolute References v. Relatives references 5. Recording and running Macros, Saving Macros, Importing Macros as add-in & Decoding Macros 6. Introduction to Visual Basic Editor
Day 6	1. Pooling the data from source file and auto updation on real time basis 2. Creation of excel templates and preparation/analysis of data using templates 3. Ratio, Trend, Comparison analysis using Advanced Excel

	4. How to use Formula auditing and its techniques 5. Preparation of Financial statements with Advanced Excel tools and analysis of Financial statements

We will provide the requisite the course material and assignments for the purpose of this course. We will conduct one pre-assessment test at the beginning of the course and one final assessment test at the end of the course. The students will be awarded a certificate on completion of this course and after successful passing the final assessment test.

Financial terms:

We are quoting the following fees for our professional services and keeping in mind the benefits of these courses to students and our long-term relations with MVGR colleges, the fees quoted below are negotiable.

Total training hours including the pre and post assessment test (estimated) for the course is 45 Hours for a batch size of **30 students**. We would like to quote fees of Rs. 1,500 each for Chartered Accountant per hour i.e 3,000 per hour for two trainers and no separate fees for support staff. Total fees proposed for batch of 30 students is Rs. 1,35,000/-. We have turnover less than threshold limit and accordingly, will not charge GST separately.

We look forward for your support and long term association.

Regards,

Partner
S&S Academy

2018-19

HOD (MVGR EEE) <hod.eee@mvgrce.edu.in>

Internship training for MVGR Engineering college EEE Students

2 messages

Ravi Kumar a <ravikumar.a@apssdc.in> Fri, Nov 2, 2018 at 11:14 AM
To: eeehod@mvgrce.edu.in

Dear sir,
Thank you so much for your interest in imparting the training for your students under internship program for a period of one month for final year of Electrical Engg.students. Received the student lists.
we will start the training for 75 students from 26-11-2018,please find the attachment which contains ,schedule of training .For any further details you are free to contact me.

A Ravi Kumar,

Associate Project Director,

APSSDC-SIEMENS Project.

MVGR INTERNSHIP SCHEDULE.xlsx
14K

HOD (MVGR EEE) <eeehod@mvgrce.edu.in> Fri, Nov 2, 2018 at 12:01 PM
To: saratkumar sahu <sahu.sarat@gmail.com>

[Quoted text hidden]
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With best regards.

Dr. Sarat Kumar Sahu
M.Tech, Ph.D., MIEEE, MIE(I),LMISTE
Professor &Head
Department of Electrical & Electronics Engineering
MVGR College of Engineering
Vizianagaram-535005
Andhra Pradesh, INDIA

E-mail: eeehod@mvgrce.edu.in

Office Phone No:91- 8922-241167

Cell: 91- 9490252044

MVGR INTERNSHIP SCHEDULE.xlsx
14K

Internship training for MVGR Engineering college E

Ravi Kumar a <ravikumar.a@apssdc.in>
to eeehod

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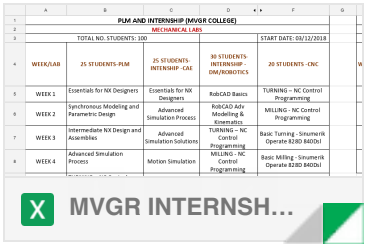
A Ravi Kumar,

Associate Project Director,

APSSDC-SIEMENS Project.



PLM AND INTERNSHIP (MVGR COLLEGE)
MECHANICAL LABS
TOTAL NO. STUDENTS: 100 START DATE: 03/12/2018

WEEK/LAB	25 STUDENTS-PLM	25 STUDENTS-INTERNSHIP -CAE	30 STUDENTS-INTERNSHIP -DM/ROBOTICS	20 STUDENTS -CNC
WEEK 1	Essentials for NX Designers	Essentials for NX Designers	RobCAD Basics	TURNING – NC Control Programming
WEEK 2	Synchronous Modeling and Parametric Design	Advanced Simulation Process	RobCAD Adv Modelling & Kinematics	MILLING - NC Control Programming
WEEK 3	Intermediate NX Design and Assemblies	Advanced Simulation Solutions	TURNING – NC Control Programming	Basic Turning - Sinumerik Operate 828D 840Dsl
WEEK 4	Advanced Simulation Process	Motion Simulation	MILLING - NC Control Programming	Basic Milling - Sinumerik Operate 828D 840Dsl

MVGR INTERNSH...

HOD (MVGR EEE) <eeehod@mvgrce.edu.in>
to saratkumar

--
With best regards.

Dr. Sarat Kumar Sahu
M.Tech, Ph.D., MIEEE, MIE(I),LMISTE
Professor &Head
Department of Electrical & Electronics Engineering
MVGR College of Engineering
Vizianagaram-535005

HOD (MVGR EEE) <hod.eee@mvgrce.edu.in>

Requirements for registration in APSSDC-SIEMENS CoE

3 messages

Ravi Kumar a <ravikumar.a@apssdc.in> Mon, Nov 19, 2018 at 11:20 AM
To: "aparna devi (MVGR Mech)" <aparna_devi@mvgrce.edu.in>, "Prof R Ramesh (MVGR Mech)" <dr.r.ramesh@mvgrce.edu.in>, eeehod@mvgrce.edu.in, mechhod@mvgrce.edu.in

Dear Sir/Madam,

As per our discussion please find the following procedure for registering the candidates in Skill development program of APSSDC-SIEMENS.

We require soft copy of students data in the format as enclosed (Document Name-Student List)

One faculty member from each branch must accompany the students during the training period.

Students must attend the classes from 9:00 AM to 5:00 PM (Lunch: 1PM to 2PM)

Students are advised to bring their lunch boxes (Canteen facility is not available in AU College of Engineering)

We require the following documents from each student :
1.Photo
2.Photo copy of Aadhaar
3.Photo copy of 10th
4.Photo copy of Caste certificate (BC/SC/ST)
5.College ID Card

Note:The student has to fill the application form and has to submit with the above documents on first day of training. Application form is here with enclosed

Warm Regards,

A Ravi Kumar,

Associate Project Director,

APSSDC-SIEMENS Project.

2 attachments

Student list (1).xlsx
13K

COE Application form.pdf
363K

HOD (MVGR EEE) <eeehod@mvgrce.edu.in> Fri, Nov 30, 2018 at 12:00 PM
To: ravikumar.a@apssdc.in

Sir,
I will upload the new students list by 2:30PM along with fees details.
The number of students till now registered are 60.
We will pay the fee for 60 students and give their fees details.
[Quoted text hidden]
--
With best regards.

Dr. Sarat Kumar Sahu
M.Tech, Ph.D., MIEEE, MIE(I),LMISTE

Professor &Head
Department of Electrical & Electronics Engineering
MVGR College of Engineering
Vizianagaram-535005
Andhra Pradesh, INDIA

E-mail: eeehod@mvgrce.edu.in

Office Phone No:91- 8922-241167

Cell: 91- 9490252044

HOD (MVGR EEE) <eeehod@mvgrce.edu.in> Fri, Nov 30, 2018 at 12:02 PM
To: "B.Jagannadh Ch Yadav" <badakalajagannath@gmail.com>

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2 attachments

Student list (1).xlsx
13K

COE Application form.pdf
363K

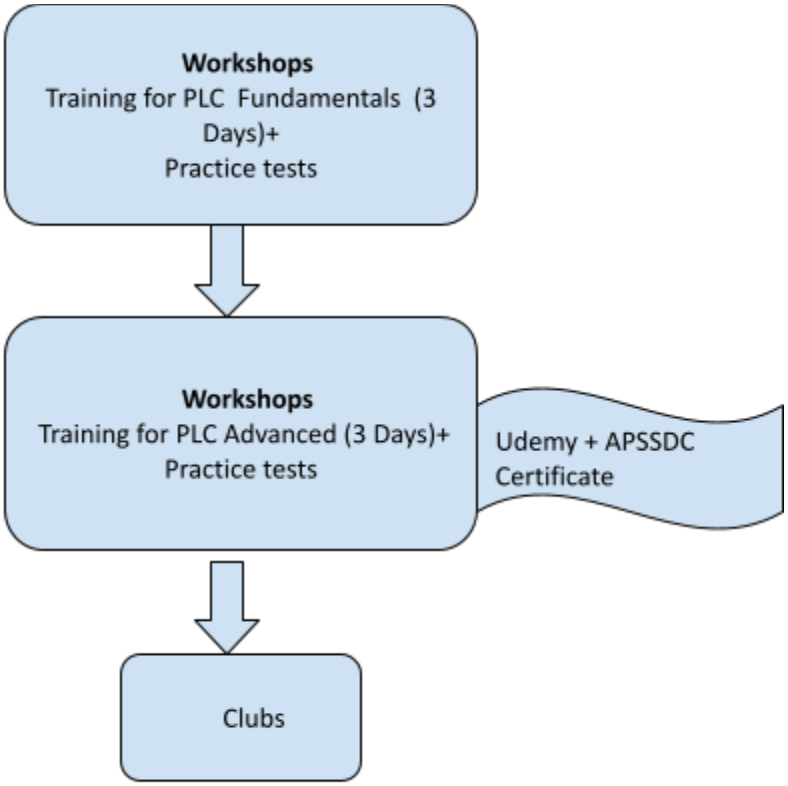
PLC

Course Overview

By providing Basics-on workshop to Students , A programmable logic controller (PLC) is an electronic device used in many industries to monitor and control building systems and production processes. Unlike PCs and Smartphones, which are designed to perform any number of roles, a PLC is designed to perform a single set of tasks, except under real-time constraints and with superior reliability and performance.

Intended audience : 2nd , 3rd Year & 4th Year

Training workflow :



Workshops:

The objective of workshop is to see that the students are well trained for the prerequisite courses of certification.

Duration: 6 days (Phase 1 + Phase -2)

Objective:

- To give basic knowledge on **PLC.**
- Projects on PLC.

Training Methodology:

- offline

Software & Kits:

- Delta WPL

Certification Agency:

Udemy +NFI : National Foundation For India

PLC Programming of Allen Bradley, Delta, Siemens, Omron & Schneider using LIVE Examples with HMI Interfacing

Assessments/Practice test: To ensure that students have understood the content covered during the session; a brief test will be conducted on LMS after every training session.This will help the student understand where he/she needs to improve . LMS (Learning and Management System) is built from OpenEdx. It contains all course related content such as hand-outs, videos and practice sessions. APSSDC will provide individual student account and Student/college wise analytics are also available

Clubs: After Workshops we will initiate clubs with one faculty and two merit students from each year in every College

Selection of the Merit students for the Club: At the end of the work shops we will select two merit students from every college based on Written Exam & Tool Test.

Advantages to be a member in Club

a. We will provide guidance for their Projects.
b. We will give priority for placement drives conducted by APSSDC.
c. Eligibility for University Innovation Fellows (UIF).
d. Priority for International programs conducted by APSSDC and etc..

Course Content & Day Wise Schedule for workshop:

PLC Fundamentals Phase 1

Day	Course content
Day-1	Introduction to Automation,History of Automation,Introduction to PLC, Introduction to PLC Programming types,Introduction about Ladder logic diagram, NO & NC switch based concept,Application problems based on NO & NC & Latching concepts,Application problems based on Latching concept.
Day-2	Introduction to Blinking concept,Application problems based on Blinking concept, Introduction to Memory coils,problems based on Memory coils & Application problems based on Memory coils, Sensor based problems.
Day-3	Introduction to Timers and Timer based Problems,Application problems based on Timers, NO&NC combination,Introduction to Counters,Counter based problems & Mini project based on all concepts like Traffic light controller.

PLC Advanced Phase 2

Day	Course content
Day-1	Introduction of Industrial Automation,Applications of Automation,History of Automation,Introduction to PLC,Introduction to PLC Programming types,Introduction about Ladder logic diagram, introduction about Basic Elements, Basic Rules Regarding Programming, Sample Program & Introduction of NO & NC switch based concept,explanation Regarding Basic Electrical Circuits Related to NO &NC,Application problems based on NO & NC
Day-2	Introduction to Latching,blinking,Application problems based on NO & NC with Latching,blinking,introduction About Memory Coils .Application problems based on Memory coils & Push button concepts, Sensor based problems & Introduction to Timers

Day-3	Real Time Applications Based On Timer concept,Application problems based on Timers,NO & NC combination,Introduction To Counter's Concept & Counter based problems,Real time Application problems based on NO & NC combination,Latches,Memory,Emergency Switches & Timers And Counters,traffic lights program by covering all the concepts.

PLC Competitions

Mitsubishi Electric Cup(National Level Competition For Factory Automation):
https://www.mitsubishielectric.in/fa/mecup/about.php

Dept. of Mechanical Engg

ANDHRA PRADESH STATE SKILL DEVELOPMENT CORPORATION (APSSDC)

DesignTech
Technology for designing the future

SIEMENS

Technical Skill Developement Institutes

SKill Development, Entrepreneurship & Innovation Department (SDE & I Dept.)
Governement of Andhra Pradesh
Amaravati.

About t-SDI

The SIEMENS t-SDI aim to train ITI, Diploma Students, Unemployed Youth and School Dropouts on world class Siemens Equipment & Software's. This TSDIs provides training by Siemens certified training partners. t-SDIs benefits student community immensely as they trained on the same Equipment / Software used by Industry. Participants acquire industry best practices through this training. The globally valid Siemens Certification after completion of training increase student's employability.

Deliverables of SIEMENS t-SDI

- ☑ Impart technical skills, value based education to students, so as to enable them to face the demands of the industry through Industrial Oriented Training with Contemporary learning methodologies.
- ☑ Support the academicians who are looking forward to take the advantage of the open up global market and research in the contemporary technology.
- ☑ Benefit the researchers in considerate the industry related problems.
- ☑ Provide a platform for consultancy in various Technological areas such as fields like Mechanical, Instrumentation, Electrical, Electronics & Communication, Automobile and Biomedical Engineering.

The Objective of SIEMENS Project is to Bridge the Gap Between Institution & Industries

Weak Education System

- Out dated engineering concepts
- No vocational experience/interaction
- Outdated tools in labs
- Faculty not equipped with industry trends & practices

Challenges Faced by Industry

- Large investment in time, effort & money to train students
- 6–18 months before recruits become productive
- Affects competitiveness of companies

SIEMENS Project Initiatives

- Bridge the gap between industry needs and available Skills through industry oriented training
- Enable institutes to improve quality of education
- Provide state-of-the-art tools to match industry standards
- Student Training in Industry skills

TSDI Laboratories

Automotive: 2- Wheeler Lab	Automotive: 4- Wheeler Lab	Electrical-Home Lab	Refrigeration and Air Conditioning (R & AC) Lab	C B T LAB(Solid edge) Lab
Electronics: Home Lab	Electronics: Office Lab	CNC	Welding	Agro and Farm Equipment Lab

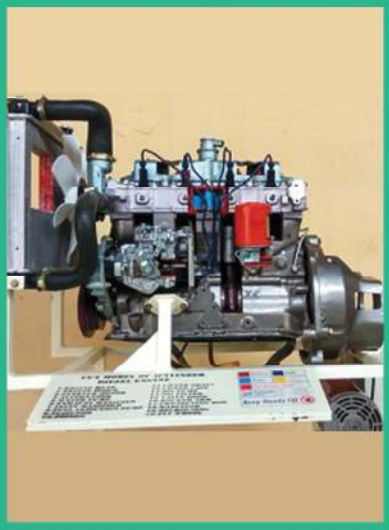
Automotive: 2- Wheeler Lab

- The Motorcycle Mechanic course is designed to help you to become a successful motorcycle mechanic.
- In-depth knowledge of various systems and SOPs will be covered supplemented with rich 3D visualization and application scenarios.

Modules Offered

- Basic Automotive Servicing
- Automobile Electrical system
- Automobile Body repair & Painting Repair of Engine System ,
- Repair and overhauling of engine
- system and Transmission Systems.

Automotive: 4- Wheeler Lab

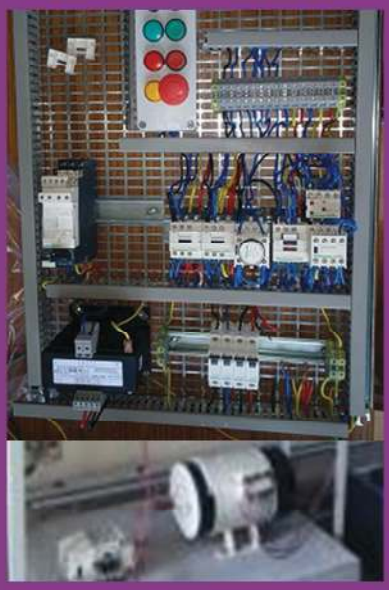


- This Module is designed so that you can gain knowledge about the basic maintenance of a passenger car and begin a career in the car repair and maintenance industry.

Modules Offered

- Basic Automotive Servicing , Repair & Overhauling
- Automobile Electrical system
- Automobile Body repair, denting & Painting
- Repair of Auto Air Conditioning system, Engine System , Automotive sensor and actuator technology Repair and overhauling of engine
- system (Petrol & Diesel) and Transmission Systems.

Electrical-Home Lab



- This Module is designed to get you started as an electrician for domestic purpose.
- It covers wiring procedures, earthing regulations and national electrical code (NEC) for both Domestic and Industrial with rich 3D visualization and application scenarios.

Modules Offered

- House Wiring
- Rules pertaining to Earthing
- The National Electrical Codes
- Testing of Domestic Wiring.
- Repair of Home Appliances

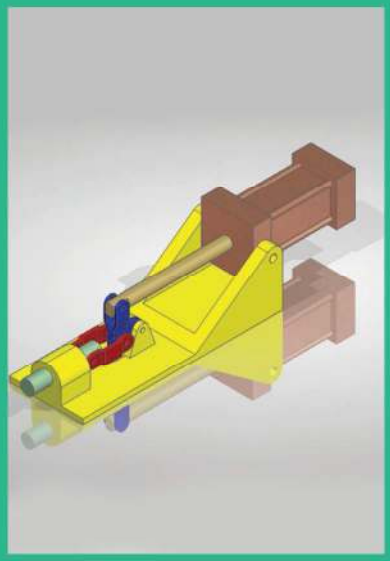
Refrigeration and Air Conditioning (R & AC) Lab

- This Course is designed so that Student can gain basic knowledge regarding the air conditioning process, its working principle, Installation and maintenance and the use of electrical tools needed to carry out these operations with rich 3D visualisation and application scenarios.

Modules Offered

- Installation of Refrigeration and Air Conditioning equipment
- Servicing and Maintenance of R & AC equipment

C B T LAB(Solid edge) Lab



- This course will be modular scalable from Foundation level to Expert level imparting the skill with respect to Design and test Part Modelling & Assembly, Drafting and sheet metal.

Modules Offered

- Introduction to Solid edge, sketching and practice of sketch drawing,
- Solid Modelling
- Part Modelling & Assembly
- Drafting and sheet metal

Electronics: Home Lab

- The Electorinc Home course is designed so that you are able to troubleshoot and diagnose the problem and identify the case for repair in Home Appliances.

Modules Offered

- Foundation Electronics
- Installtion & Maintenance of Home Theatre
- Repair & Maintenance of TVs-LCD/LED

Electronics: Office Lab

- The Electronic office course is designed to help you begin a career as Field Technician.
- This product provides an overview of the Installing the system and configuring the peripherals in an office, system troubleshooting, repair and its usage.

Modules Offered

- Installation & Maintenance of DTH System
- Installtion and Maintenance of Office Electronic Equipment - Network Devices
- Installtion and Maintenance of Office Electronic Equipment - Hardware Devices
- Repair & Maintenance of Smart Phones
- Installation & Maintenance of Office Application Software

Manufacturing: Production (CNC Machine) Lab

- This Course gives general information about different turning,Milling operations, machines used in turning, Milling operations, tools used in Milling,turning operations, components used in milling, turning machines, different types of defects that occur while working in milling, turning and their remedies.
- Subtractive manufacturing Process, TURNING-MILLING CNC Programming, Operating & Machining.

Modules Offered

- Introduction to CNC Technology - CNC Lathe
- Introduction to CNC Technology - VMC
- CNC Programming & Machining
- CNC Turning
- CNC Milling (VMC)
- CNC Machine Tool Maintenance - Mechanical
- CNC Machine Tool Maintenance - Electrical
- Machining Foundation
- Milling - Conventional
- Turning - Conventional
- Milling Master
- Turning Master
- CNC Milling Master
- CNC Turning Master
- Advance Forging &Heat Treatment Conventional

Manufacturing: Fabrication (Welding) Lab

- This Course imparts Skills about different welding processes, electricity and welding, types of arc welding, welding joints and symbols, oxy-fuel gas cutting, grinding, MMAW and MIG.

Modules Offered

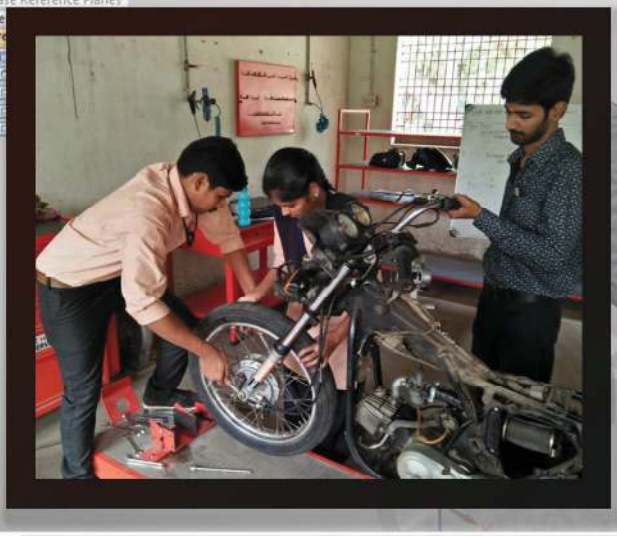
- Role of Electricity in Welding
- Basic Fitting work,
- Basic Sheet metal work
- Structural & Pipe Fabrication
- Different types of Welding Process and Gas Cutting

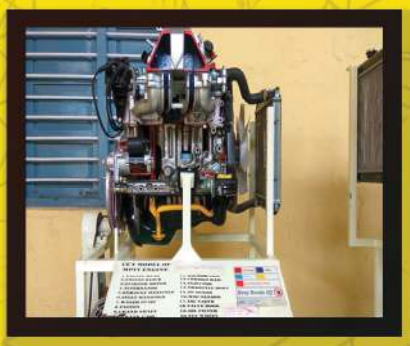
Agro and Farm Equipment Lab

- This Course Skills on Root Harvesting Equipment, Structure of Potato Digger, Structure of Peanut Digger, Types of Root Harvesting Equipment according to operation, mechanism and the location and functions of main components. Information regarding adjustment of Digger Blade, Digger's depth and Drive chains. Repair and Field operation of Tillage Equipment course is designed to help you become Tillage Equipment specialist.
- In-depth knowledge of various systems and SOPs will be covered, supplemented with rich 3D visualization and application scenarios. Repair and Maintenance of Tractor.

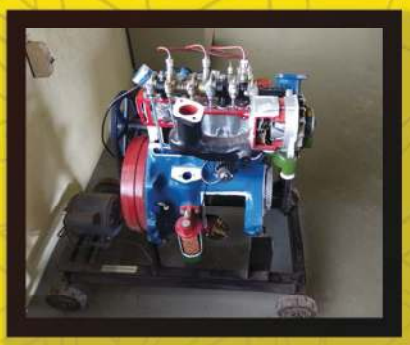
Specialized Modules

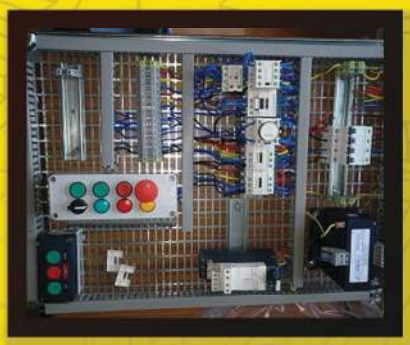
- Tractor Servicing Foundation
- Maintenance & Field Operation of Irrigation Equipment
- Maintenance & Field Operation of Seed Drills
- Repair And Field Operation Of Tractor
- Repair of Harvesting & Threshing Equipment
- Repair & Field Operation of Tillage Equipment
- Repair & Field Operation Of Root Harvesting Equipments
- Overhauling of Tractor
- Maintenance & operation of Power Tiller
- Repair of Power Tiller
- Repair, Maintenance & Field Operation of Potato Planters
- Repair, Maintenance & field operation of Rice Trans-planters





SD1009





MICROWAVE TRAINER

SIEMENS Technical Skill Developement Institutes in Andhra Pradesh

SRIKAKULAM DISTRICT

1. Govt. Polytechnic, Srikakulam
2. Aditya Institute of Technology and Management, Tekkali
3. G M R Institute of Technology, Razam

VIZIANAGARAM DISTRICT

4. Maharaj Vijayaram Gajapathi Raj (MVGR) College of Engineering, Vizianagaram

VISAKHAPATNAM DISTRICT

5. Govt. Model Residential Polytechnic, Paderu
6. Indo-German Institute of Advanced Technology, Kancharapalem
7. Gayathri Vidya Parishad college of Engineering, Madhurawada

EAST GODAVARI DISTRICT

8. Pragathi Engineering college, Surampalem
9. Aditya Engineering college, Surampalem
10. Godavari Institute of Engineering and Technology, Rajahmundry

WEST GODAVARI DISTRICT

11. D N R College of Engg. and Technology, Bhimavaram
12. Sir C R Reddy College of Engineering, Eluru

KRISHNA DISTRICT

13. IIIT, Rajiv Gandhi University of Knowledge Technologies, Nuzvidu
14. Andhra Loyola Institute of Engineering and Technology, Vijayawada
15. Govt. Polytechnic, Vijayawada

GUNTUR DISTRICT

16. Vignan's Foundation for Science, Technology & Research University, Vadlamudi
17. R.V.R. & J.C.College of Engineering, Chowdavaram

PRAKASAM DISTRICT

18. Prakasam Engineering College, Kandukur
19. St. Ann's College of Engineering & Technology, Chirala

NELLORE DISTRICT

20. Audisankara College of Engineering & Technology, Gudur
21. Govt. Polytechnic, Nellore

CHITTOOR DISTRICT

22. Sree Vidyanikethan Engineering College, Sree Sainath Nagar, Tirupati
23. Madanapalle Institute of Technology and Science, Madanapalle
24. S V Govt. Polytechnic, Tirupati
25. Kuppam Engineering College, KES Nagar, Kuppam
26. Siddhaith Institute of Engineering & Technology(SIETK), Puttur
27. Sri City SEZ, Satyavedu

KURNOOL DISTRICT

28. Rajeev Gandhi Memorial College of Engineering and Technology, Nandyal
29. G Pulla Reddy Engineering College, Kurnool
30. Govt. Model Residential Polytechnic, Srisailam

ANANTAPUR DISTRICT

31. Govt. Polytechnic, Anantapuramu
32. Ananthalakshmi Institute of Technology and Sciences, Anantapuramu

KADAPA DISTRICT

33. IIIT Rajiv Knowledge Valley Campus, Idupulapaya
34. Annamacharya Institute of Technology & Sciences, Rajampet

Weblink: http://engineering.apssdc.in/siemens

APSSDC

ANDHRA PRADESH STATE SKILL DEVELOPMENT CORPORATION

3rd Floor, Infosight, Survey No. 78/2, Tadepalli, Vijayawada,
Andhra Pradesh - 522 501.

For More Details: 1800-425-2422

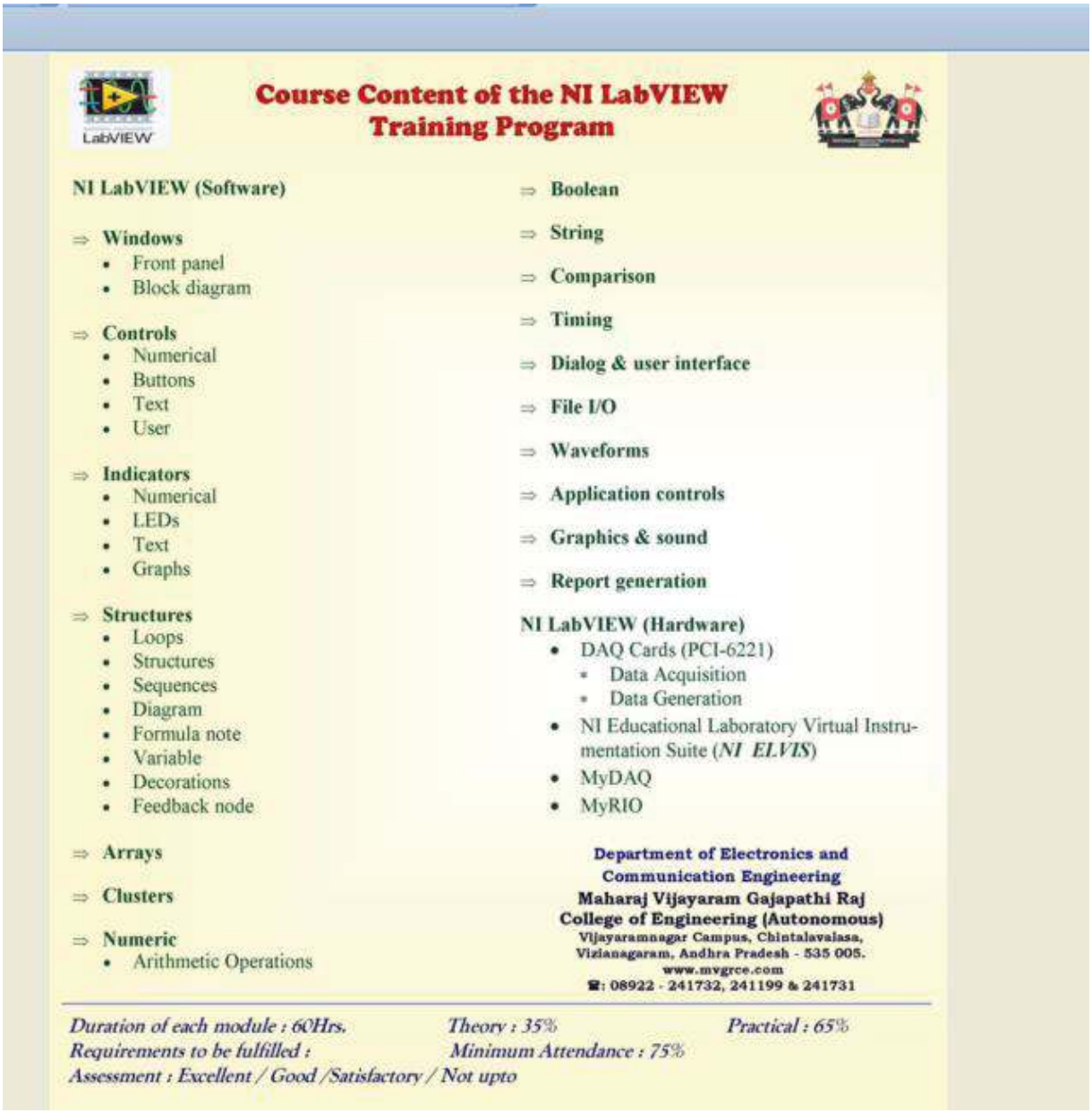
www.apssdc.in | facebook.com/apssdcskilldevelopment | linkedin.com/apssdcskilldevelopment | twitter.com/apssdcskilldevelopment

Dept. of ECE

List of value added courses

1. NI Lab View
2. Embedded Systems

Brochure of NI Lab View:



Course Content of the NI LabVIEW Training Program

NI LabVIEW (Software)

⇒ **Windows**
- Front panel
- Block diagram

⇒ **Controls**
- Numerical
- Buttons
- Text
- User

⇒ **Indicators**
- Numerical
- LEDs
- Text
- Graphs

⇒ **Structures**
- Loops
- Structures
- Sequences
- Diagram
- Formula note
- Variable
- Decorations
- Feedback node

⇒ **Arrays**

⇒ **Clusters**

⇒ **Numeric**
- Arithmetic Operations

⇒ **Boolean**

⇒ **String**

⇒ **Comparison**

⇒ **Timing**

⇒ **Dialog & user interface**

⇒ **File I/O**

⇒ **Waveforms**

⇒ **Application controls**

⇒ **Graphics & sound**

⇒ **Report generation**

NI LabVIEW (Hardware)
- DAQ Cards (PCI-6221)
  - Data Acquisition
  - Data Generation
- NI Educational Laboratory Virtual Instrumentation Suite (*NI ELVIS*)
- MyDAQ
- MyRIO

Department of Electronics and Communication Engineering
Maharaj Vijayaram Gajapathi Raj College of Engineering (Autonomous)
Vijayaramnagar Campus, Chintalavalasa, Vizianagaram, Andhra Pradesh - 535 005.
www.mvgrce.com
☎: 08922 - 241732, 241199 & 241731

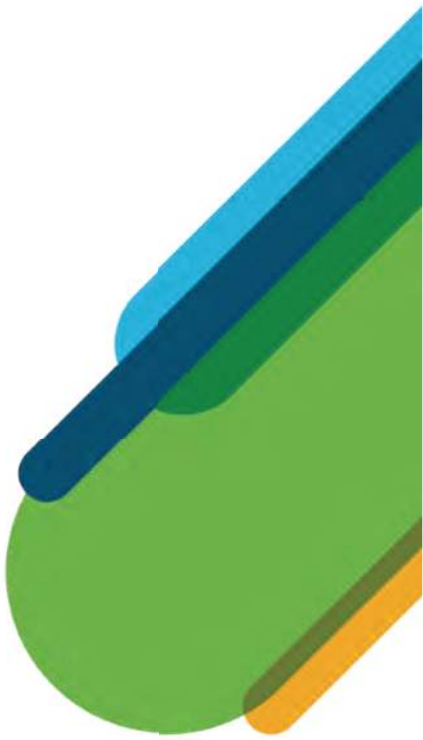
Duration of each module : 60Hrs. *Theory : 35%* *Practical : 65%*
Requirements to be fulfilled : *Minimum Attendance : 75%*
Assessment : Excellent / Good /Satisfactory / Not upto

Dept. of CSE

Networking Academy

Product Catalog

October 2020



Networking Academy

Prepare the workforce of the future

Leading-edge curriculum designed to educate students for jobs of today and tomorrow

Two Options for Course Modality

Instructor-Led

The majority of Networking Academy students take courses led by an instructor through an education institution in their local community.

Self-Paced

Online courses are self-paced and use the same curriculum taught in Networking Academy classrooms around the world.

Types of Course Offerings

Explore Courses

Easy starting points to explore opportunities in technology

- No prerequisites
- No cost
- Typically self–paced
- Between 8-30 hours

Career Courses

Equip students with real job skills for entry-level positions

- Aligned to industry-valued certifications
- Typically instructor-led and 70 hours of instruction time
- Integrated hands-on practice and interactive experiences

Complementary Offerings

Extend your teaching with courses from Networking Academy partners

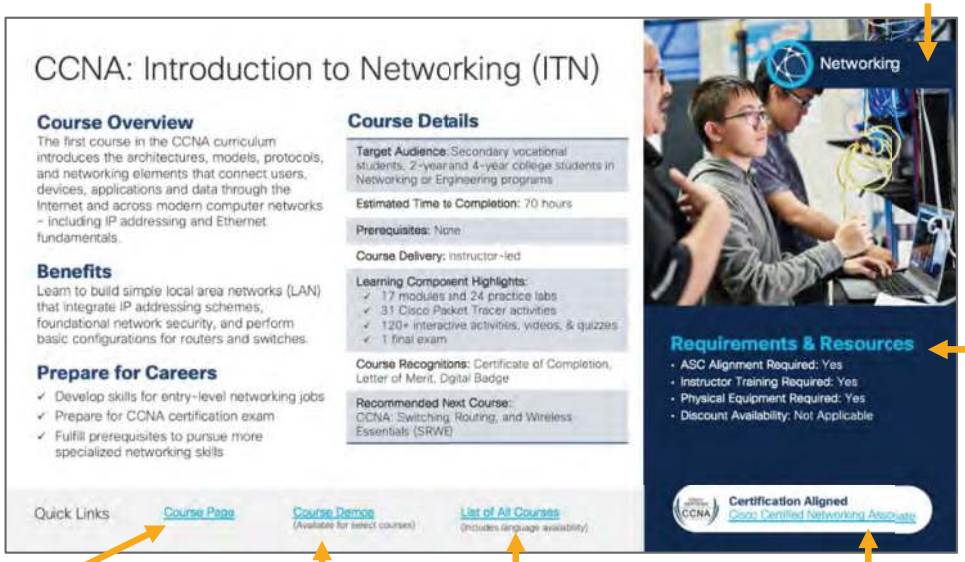
- Aligned to industry-valued certifications
- Some self-paced courses
- Some instructor-led courses for 70 hours of instruction time

Practice

Learning tools, hands-on labs, and interactive experiences are integrated into courses to build skills, not just knowledge

In This Catalog

Easy navigation by course category.



ASC Alignment Required: Due to the technical nature of some courses, Networking Academy may require that your institution receive support from an Academy Support Center (ASC).

Instructor Training Required: Some courses require accreditation or instructor training to ensure quality learning outcomes for your students.

Physical Equipment Required: Lab equipment may be required depending on the course.

Discount Availability: Discounts are available for select certification exams, for individuals meeting eligibility criteria.

Find the course page on NetAcad.com.

Course Demos are available for select courses to preview the content.

Explore the full Networking Academy course list online and filter by language. There is also a language summary matrix at the end of this catalog.

See which courses align with a certification, or get other tips about the course.

Networking Academy Curriculum Portfolio

October 2020

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Networking

Networking Essentials

Course Overview

Networking Essentials teaches networking based on environments students may encounter in daily life, including small office and home office networking. This course provides an engaging, self-paced learning experience using Packet Tracer simulation, interactive activities, and learning with your own devices at home.

Benefits

Develop a foundational understanding of the high-level network architecture and how a network operates.

Prepare for Careers

- ✓ For developers, cybersecurity, business analysts, or other professionals: gain essential networking knowledge
- ✓ For students: a launching point for many career pathways, from cybersecurity to software to business and more

Course Details

Target Audience: High school, secondary and 2-year college vocational students, college and university students studying IT and non-IT fields, career changers

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Self-Paced, Instructor-led

Learning Component Highlights:
- ✓ 20 modules and 19 practice labs
- ✓ 24 Cisco Packet Tracer activities
- ✓ 130+ interactive activities, videos, & quizzes
- ✓ 5 module exams
- ✓ 1 final exam and 1 skills assessment (Instructor-led only)

Course Recognitions: Certificate of Completion, Digital Badge (Instructor-led only)

Recommended Next Course:
CCNA: Introduction to Networks (ITN), Cybersecurity Essentials, or DevNet Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No (uses Packet Tracer and devices you already have at home)
- **Voucher Availability:** Not Applicable

Practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Introduction to Networking (ITN)

Course Overview

The first course in the CCNA curriculum introduces the architectures, models, protocols, and networking elements that connect users, devices, applications and data through the Internet and across modern computer networks – including IP addressing and Ethernet fundamentals.

Benefits

Learn to build simple local area networks (LAN) that integrate IP addressing schemes, foundational network security, and perform basic configurations for routers and switches.

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 17 modules and 24 practice labs
- ✓ 31 Cisco Packet Tracer activities
- ✓ 120+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNA: Switching, Routing, and Wireless Essentials (SRWE)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Switching, Routing, and Wireless Essentials (SRWE)

Course Overview

The second course in the CCNA curriculum focuses on switching technologies and router operations that support small-to-medium business networks and includes wireless local area networks (WLAN) and security concepts.

Benefits

Students learn key switching and routing concepts. They can perform basic network configuration and troubleshooting, identify and mitigate local area network (LAN) security threats, and configure and secure a basic WLAN.

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 16 modules and 14 practice labs
- ✓ 31 Cisco Packet Tracer activities
- ✓ 70+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNA: Enterprise Networking, Security, and Automation (ENSA)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Enterprise Networking, Security, and Automation (ENSA)

Course Overview

The final course in the CCNA series covers the architecture, security, and operation of an enterprise network, along with introducing the new ways in which network engineers interact with programmable infrastructure.

Benefits

Gain skills to configure and troubleshoot enterprise networks, learn to identify and protect against cybersecurity threats, and discover key concepts of software-defined networking, including controller-based architectures and application programming interfaces (APIs).

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 14 modules and 12 practice labs
- ✓ 29 Cisco Packet Tracer activities
- ✓ 100+ interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNP Enterprise: Core Networking (ENCOR)

Course Overview

This first course in the 2-course CCNP Enterprise series covers switching, routing, wireless, and related security topics, along with the technologies that support software-defined, programmable networks.

Benefits

Gain practical, hands-on experience and skills needed to configure, operate and troubleshoot large scale enterprise networks.

Prepare for Careers

- ✓ Develop skills for professional-level networking roles
- ✓ Prepare for the Cisco Enterprise Network Core Technologies exam (350-401 ENCOR) to earn an Enterprise Core Specialist certification
- ✓ Completion of both CCNP Enterprise courses prepares for CCNP Enterprise certification

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Recommended Preparation: CCNA or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 29 chapters and 41 practice labs
- ✓ 24 Cisco Packet Tracer activities (optional)
- ✓ 35+ interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNP Enterprise: Advance Routing (ENARSI)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Professional

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNP Enterprise: Advanced Routing (ENARSI)

Course Overview

This second of the 2-course CCNP Enterprise series focuses on implementation and troubleshooting of advanced routing and redistribution for OSPF, EIGRP and BGP along with VPN technologies, infrastructure security and management tools used in Enterprise networks.

Benefits

Gain practical, hands-on experience and skills needed to configure, operate and troubleshoot large scale enterprise networks.

Prepare for Careers

- ✓ Develop skills for professional-level networking roles
- ✓ Prepare for Cisco Enterprise Advanced Routing & Services exam (300-410 ENARSI) to earn a CCNP Specialist certification
- ✓ Completion of both CCNP Enterprise courses prepares for CCNP Enterprise certification

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Recommended Preparation: ENCOR or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 23 chapters and 40 practice labs
- ✓ 20 Cisco Packet Tracer activities (optional)
- ✓ 25+ videos & quizzes, 2 Skills Assessments
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
Broaden your skills with DevNet Associate, CyberOps Associate, Python, or Emerging Technologies Workshops

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Professional

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Operating Systems & Information Technology

Get Connected

Course Overview

Get Connected students are introduced to the Internet and experiment with various social networking sites. Talking characters and devices make this course a user-friendly environment for an audience new to Information Technology (IT).

Benefits

The digital world is upon us both personally and professionally. Gain essential skills like basic computer skills, such as how to use a computer, connect devices, and access search, email, and social media.

Explore Opportunities in Technology

- ✓ Develop your digital basics
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and general audience new to IT

Estimated Time to Completion: 30 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 chapters
- ✓ Illustrations and narrations guide students through topics
- ✓ Interactive activities, videos, & quizzes

Course Recognitions: Certificate of Completion

Recommended Next Course:
IT Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IT Essentials

Course Overview

IT Essentials covers fundamental computer and career skills for entry-level IT jobs. Students apply skills and procedures to install, configure, and troubleshoot computers, mobile devices, and software.

Benefits

Learn the fundamentals of connecting computers to networks. Plus, you'll enjoy working with Cisco Networking Academy's advanced simulation tools with hands-on labs to hone your troubleshooting skills and immediately practice what you learn!

Prepare for Careers

- ✓ Develop skills for entry-level technical support roles
- ✓ Prepare for CompTIA A+ certification exam
- ✓ Build your foundation for CCNA-level courses

Course Details

Target Audience: Secondary and 2-year college vocational students

Estimated Time to Completion: 70 hours

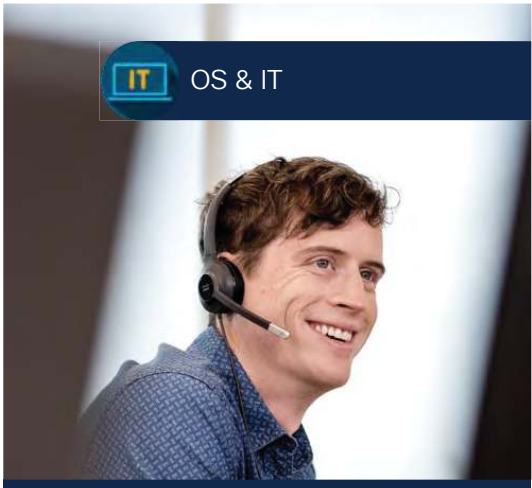
Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 14 chapters and 99 practice labs
- ✓ Cisco Packet Tracer, virtual laptop, and virtual desktop learning tools
- ✓ 29+ interactive activities
- ✓ 18+ assessments throughout the course
- ✓ 1 final and 2 practice certification exams

Course Recognitions: Certificate of Completion, Digital Badge, Letter of Merit

Recommended Next Course:
CCNA: Introduction to Networking (ITN)



Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
CompTIA A+ Certification

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux Unhatched

Course Overview

This course covers introductory back-end operating system knowledge by teaching basic installation and configuration of Linux and introducing the Linux command line.

Benefits

Learners ease into acquiring Linux knowledge without having to commit to more than 8 total hours of self-paced learning, guided step-by-step with a series of hands-on virtual machine activities.

Explore Opportunities in Technology

- ✓ Wade into the shallow end of Linux and see whether it's for you or not
- ✓ Develop your digital basics
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and general audience new to IT

Estimated Time to Completion: 6-8 hours

Prerequisites: None

Course Delivery: Self-paced

Learning Component Highlights:
- ✓ 1 module
- ✓ 20 pages
- ✓ Built-in Linux machine with activities
- ✓ 1 assessment

Course Recognitions: Letter of Completion

Recommended Next Course:
NDG Linux Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux Essentials

Course Overview

This course teaches fundamentals of the Linux operating system, command line, and open source programming concepts.

Benefits

Nearly every IT job requires some Linux knowledge. Gain hands-on practice with Linux commands through the Linux virtual machine embedded in the course.

Prepare for Careers

- ✓ Develop fundamental operating system skills for entry-level IT jobs
- ✓ Prepare for LPI certificate exam
- ✓ Fulfill prerequisites to pursue more specialized IT and networking skills

Course Details

Target Audience: Secondary and 2-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 16 chapters and 13 practice labs
- ✓ Built-in virtual machine to experiment with Linux commands
- ✓ Learner-directed activities
- ✓ Chapter, midterm, and final exams

Course Recognitions: Letter of Completion

Recommended Next Course:
NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
Linux Professional Institute (LPI) Linux Essentials Professional Development Certificate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux I and II

Course Overview

A 2-course series for aspiring Linux system administrators. Covers performing maintenance tasks on the command line, installing and configuring a computer running Linux, and configuring basic networking, using virtual machines running Linux.

Benefits

More rigorous and comprehensive than NDG Linux Essentials, this course develops your Linux mastery. Gain hands-on practice with Linux commands through the Linux virtual machine embedded in the course

Prepare for Careers

- ✓ Develop skills for careers in cloud computing, cybersecurity, information systems, networking, programming, software development, big data, and more
- ✓ Prepare for LPIC-1 certification exams

Course Details

Target Audience: 2-year and 4-year college students

Estimated Time to Completion: 140 hours

Recommended Preparation: NDG Linux Essentials or equivalent

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ Built-in virtual machine to experiment with Linux commands
- ✓ Practice labs and activities
- ✓ Chapter, midterm, and final exams

Course Recognitions: Letter of Completion

Recommended Next Course: DevNet Associate

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required: No**
- **Discount Availability:** Yes
- **Cost:** Fee for self-paced classes. Cost for instructor-led classes is determined by the institution.

Certification Aligned
Linux Professional Institute LPIC-1

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programming

PCAP: Programming Essentials in Python

Course Overview

Designed as easy to understand and beginner-friendly course focusing on various data collections, manipulation tools, logic and bit operations and creating basic REST APIs.

Benefits

Learn to design, write, debug, and run programs encoded in the Python language. No prior programming knowledge is required. The course begins with the very basics guiding you step by step until you become adept at solving more complex problems.

Prepare for Careers

- ✓ Develop fundamental programming skills
- ✓ Prepare for PCEP and PCAP certification exam
- ✓ Build your foundation to pursue more specialized networking and software development skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 60-70 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 modules of interactive instructional content
- ✓ 30+ practice labs
- ✓ Built-in online tool for labs and practice
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
DevNet Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
PCEP: Certified Entry-Level Python Programmer
PCAP: Certified Associate in Python Programming

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CLA: Programming Essentials in C

Course Overview

This beginner course introduces the the universal concepts of computer programming using the C language, and teaches the syntax, semantics, and data types of the C language.

Benefits

Build transferable skills. When you learn C, you develop overarching fundamentals for all programming languages. Practice your skills through hands-on labs and write your own programs!

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CLA certification exam
- ✓ Fulfill prerequisites to pursue more advanced programming skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 9 modules of interactive instructional content
- ✓ 80+ practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, CCNA, NDG Linux Essentials

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CLA: C Programming Language Certified Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CLP: Advanced Programming in C

Course Overview

This advanced course teaches intermediate to advanced coding such as C handling variable number of parameters (<stdarg.h>), low level IO (<unistd.h>), memory and strings (<string.h> et al.), processes and threads, floats and ints (<math.h>, <fenv.h>, <inttypes.h> et al), and network sockets.

Benefits

Extend your programming knowledge and proficiency. Learn to think harder and deeper about programming concepts.

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CLP certification exam
- ✓ Set yourself up to succeed in jobs related to software development, network engineering, and system administration

Course Details

Target Audience: 2-year and 4-year college and university students

Estimated Time to Completion: 70 hours

Prerequisites: CLA: Programming Essentials in C course, CLA certification, or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules of interactive instructional content
- ✓ 18 practice labs
- ✓ Quizzes, chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CLP: C Certified Professional Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CPA: Programming Essentials in C++

Course Overview

This beginner course introduces the basics of programming in the C++ language and the fundamental notions and techniques used in object-oriented programming.

Benefits

Build transferable skills. When you learn C, you develop overarching fundamentals for all programming languages. Practice your skills through hands-on labs and write your own programs!

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CPA certification exam
- ✓ Fulfill prerequisites to pursue more advanced programming skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules of interactive instructional content
- ✓ 100+ practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, NDG Linux Essentials, DevNet Associate

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CPA: C++ Certified Associate Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CPP: Advanced Programming in C++

Course Overview

This advanced course teaches intermediate to advanced coding such as C++ template mechanism, understanding and using property template classes and methods, and the C++ STL library including solving common programming problems and the IO part.

Benefits

Extend your programming knowledge and proficiency. Learn to think harder and deeper about programming concepts.

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CPP certification exam
- ✓ Set yourself up to succeed in jobs related to software development, network engineering, and system administration

Course Details

Target Audience: 2-year and 4-year college and university students

Estimated Time to Completion: 70 hours

Prerequisites: CPA: Programming Essentials in C++ course, CPA certification, or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 9 modules of interactive instructional content
- ✓ 65 practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
CCNP Enterprise, NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Certification Aligned
CPP: C++ Certified Professional Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programmable Infrastructure

Internet of Things

Introduction to Internet of Things (IoT)

Course Overview

An introduction to the Internet of Things and how it enables Digital Transformation along with emerging technologies such as data analytics, artificial intelligence, and cybersecurity.

The course also highlights the importance of Intent-Based Networking using a software-driven approach and machine learning to be able to connect and secure tens of billions of new devices with ease.

Benefits

Gain a comprehensive view of how emerging technologies are shaping the digital business.

Explore Opportunities in Technology

- ✓ Develop your digital basics
- ✓ Explore the career opportunities in this new emerging technologies landscape

Course Details

Target Audience: Secondary, vocational, 2-year college, and general audience

Estimated Time to Completion: 20 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 6 chapters
- ✓ 17 practice labs (plus 4 optional labs)
- ✓ 7 Cisco Packet Tracer activities
- ✓ 40+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Insertion Points:
A great start for any learning path, and way to introduce the digital transformation before or during any Career course

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
  (Optional labs require additional hardware)
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Fundamentals: Connecting Things

Course Overview

This highly hands-on course introduces how to securely interconnect sensors, actuators, microcontrollers, single-board computers, and cloud services over Internet Protocol (IP) networks to create an end-to-end IoT system.

Benefits

Develop the interdisciplinary skillset required to prototype an IoT solution for a specific business case with a strong focus on the security considerations for emerging technologies.

Prepare for Careers

- ✓ Develop an entrepreneurial and design-thinking foundation for IoT job families that exist today and in the future
- ✓ Practice integrating hardware, software, data analytics, and security concepts
- ✓ Build your foundation to pursue more specialized networking, software development, and IoT skills

Course Details

Target Audience: Secondary, vocational, 2-year and 4-year college, 4-year university students

Estimated Time to Completion: 40-50 hours

Prerequisites: Basic programming, networking, and electronics

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 35 practice labs
- ✓ 9 Cisco Packet Tracer activities
- ✓ 32+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
IoT Fundamentals: Big Data & Analytics or Hackathon Playbook (Design Thinking)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Fundamentals: Big Data & Analytics

Course Overview

This highly hands-on course introduces how to use Python data libraries to create a pipeline to acquire, transform and visualize data collected from IoT sensors and machines.

Benefits

The transformative element of any IoT system is the data that can be collected from it. The ability to extract data and using data analytics techniques to gain insights are skills highly-valued by employers.

Prepare for Careers

- ✓ Develop entrepreneurial and design-thinking skills for IoT job families that exist today and in the future
- ✓ Practice integrating hardware, software, data analytics, and security concepts
- ✓ Build your foundation to pursue more specialized networking, software development, and IoT skills

Course Details

Target Audience: 2-year and 4-year college, 4-year university students

Estimated Time to Completion: 40-50 hours

Prerequisites: IoT Fundamentals: Connecting Things

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 11 practice labs
- ✓ 18 Jupyter Notebooks (with Python code)
- ✓ 35+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
IoT Fundamentals: Hackathon Playbook

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Hackathon Playbook (Design Thinking)

Course Overview

The Hackathon Playbook is a comprehensive framework of tools and templates to prepare and run a Hackathon as a result of best practices and lessons-learned collected from the global execution of IoT Hackathons within Networking Academy and by other organizers.

Benefits

Practice design thinking through a hands-on project. Deepen your multidisciplinary IoT and data skills by defining, designing, prototyping, and presenting an IoT solution to a panel of industry experts and peers.

Prepare for Careers

- ✓ Build a design thinking mindset
- ✓ Gain resume-worthy experience working on a real prototype
- ✓ Get feedback and mentorship from industry experts

Course Details

Target Audience: Secondary, vocational, 2-year and 4-year college, 4-Year university students

Estimated Time to Completion: 20-30 hours

Prerequisites: IoT Fundamentals: Connecting Things and/or Big Data and Analytics

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ Hands-on project

Course Recognitions: Certificate of Completion

Recommended Next Course:
Any Networking Academy Career course, or an industry IoT training program

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programmable Infrastructure

Infrastructure Automation

DevNet Associate

Course Overview

This course introduces the methodologies and tools of modern software development, applied to the IT and Network operations. It covers a 360 view of the domain including microservices, testing, containers and DevOps, as well as securely automating infrastructures with Application Programming Interfaces (APIs).

Benefits

Gain practical, relevant, hands-on lab experience, including programming in Python, using GIT and common data formats (JSON, XML and YAML), deploying applications as containers, using Continuous Integration/Continuous Deployment (CI/CD) pipelines, and automating infrastructure using code.

Prepare for Careers

- ✓ Develop skills for entry-level software development and infrastructure automation jobs
- ✓ Prepare for DevNet Associate certification exam

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students and participants of coding bootcamps

Estimated Time to Completion: 70 hours

Recommended Preparation:
Object-oriented coding skills, equivalent to:
PCAP: Programming Essentials in Python
Fundamental skills of networking, equivalent to:
CCNA: Introduction to Networks

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules and 23 practice labs
- ✓ 5 Cisco Packet Tracer activities
- ✓ 6 videos, 8 quizzes, 8 module exams
- ✓ 1 final exam, 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course: CCNA, CCNP Enterprise, or CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** No (Uses Virtual Machines on the student's computer)
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified DevNet Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Experimenting with REST APIs using Webex Teams

Course Overview

This workshop introduces the basic competencies needed to create applications and automate tasks using REST APIs, the most popular architecture for software integration in IT.

Benefits

Learn the value of the REST APIs architecture, practice Python programming skills, and perform basic software integration and automation using real-world APIs on an enterprise collaboration platform (Webex Teams).

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-Year University students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 9 practice labs
- ✓ 13 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Insertion Points:
PCAP Programming Essentials in Python, IoT Fundamentals: Connecting Things

Other Insertion Points:
IT Essentials, CCNA: Introduction to Networks

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Network Programmability with Cisco APIC-EM

Course Overview

This workshop introduces the basic competencies to operate and automate management tasks on a controller-based network.

Benefits

Understand the value of network programmability. Use the Cisco DevNet Sandbox to learn how to interact with programmable devices using real-world Application Programming Interfaces (APIs) on Cisco APIC-EM programmable controllers.

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-year University students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming, CCNA: Switching, Routing, and Wireless Essentials (SRWE) or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 5 practice labs
- ✓ 13 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Insertion Points:
- After CCNA: SRWE
- With CCNA Security or CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Model-Driven Programmability

Course Overview

This workshop introduces students to device level programmability. By defining standardized device models and APIs, network device configuration and management tasks can be automated, making it easier to manage network devices at scale.

Benefits

Learn key model-driven programmability concepts: YANG to model networking devices, RESTCONF and NETCONF for device-level APIs, and Python scripting to programmatically retrieve and update device configurations.

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-year university students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming, CCNA: Switching, Routing, and Wireless Essentials (SRWE) or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 10 practice labs
- ✓ 10 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Insertion Points:
- After CCNA: SRWE
- With CCNA Security or CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Cybersecurity

Introduction to Cybersecurity

Course Overview

This course explores cyber trends, threats, and staying safe in cyberspace, and protecting personal and company data.

Benefits

Today's interconnected world makes everyone more susceptible to cyber-attacks. Learn how to protect your personal data and privacy online and in social media, and why more and more IT jobs require cybersecurity awareness and understanding.

Explore Opportunities in Technology

- ✓ Explore the world of cybersecurity and how it relates to YOU
- ✓ Develop your cybersecurity basics for a secure and safe digital life
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and 2-Year college students, general audience

Estimated Time to Completion: 15 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 modules and 7 practice labs
- ✓ Interactive activities & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: Cybersecurity Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Career Advice
Tips for getting started in your career

Cybersecurity Essentials

Course Overview

This course covers essential knowledge for all cybersecurity domains including information security, systems security, network security, ethics and laws, and defense and mitigation techniques used in protecting businesses

Benefits

The demand for security professionals continues to grow. Develop a foundational understanding of cybercrime, security principles, technologies, and procedures used to defend networks.

Explore Opportunities in Technology

- ✓ Build your cybersecurity foundation
- ✓ Take the next step in exploring the many career possibilities in cybersecurity
- ✓ See if you want to pursue job roles in networking or cybersecurity

Course Details

Target Audience: Secondary and 2-year college vocational students

Estimated Time to Completion: 30 hours

Prerequisites: Introduction to Cybersecurity

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 8 chapters and 12 practice labs
- ✓ 10 Cisco Packet Tracer activities
- ✓ 40+ interactive activities & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CyberOps Associate

Course Overview

This course introduces the core security concepts and skills needed to monitor, detect, analyze, and respond to cybercrime, cyberespionage, insider threats, advanced persistent threats, regulatory requirements, and other cybersecurity issues facing organizations.

Benefits

Gain practical, hands-on skills needed to maintain and ensure security operational readiness of secure networked systems.

Prepare for Careers

- ✓ Develop skills for entry-level security operations center (SOC) jobs
- ✓ Prepare for CyberOps Associate certification
- ✓ Pursue a career in cybersecurity operations, a rapidly-growing, exciting new area that spans all industries

Course Details

Target Audience: Students enrolled in technology degree programs at higher education institutions; IT professionals who wants to pursue a career in Security Operations

Estimated Time to Completion: 70 hours

Recommended Preparation: Introduction to Cybersecurity, Cybersecurity Essentials

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 28 chapters and 46+ practice labs
- ✓ 6 Cisco Packet Tracer activities
- ✓ 113 interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course: CCNA Security, IoT Security

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** No (Uses Virtual Machines on the student's computer)
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified CyberOps Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA Security

Course Overview

This course introduces the core security concepts and skills needed to troubleshoot and monitor computer networks and help ensure the integrity of devices and data.

Benefits

Gain practical, hands-on skills to design, implement, and manage network security systems and ensure their integrity.

Prepare for Careers

- ✓ Build expertise in network security and data protection
- ✓ Develop skills for entry-level network security specialist roles
- ✓ Gain industry in-demand skills aligned with the National Institute for Standards and Technology (NIST) Cybersecurity Framework

Course Details

Target Audience: 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: CCNA: Switching, Routing, and Wireless Essentials (or equivalent)

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 11 chapters and 16 practice labs
- ✓ 13 Cisco Packet Tracer activities
- ✓ 65+ interactive activities, quizzes, chapter exams, and skills assessments
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit

Recommended Next Course: CyberOps Associate, IoT Security

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Security

Course Overview

The explosive growth of connected IoT devices also increases the exposure to security threats. Learn to perform vulnerability and risk assessments, and research and recommend risk mitigation strategies for common security threats in IoT systems.

Benefits

Learn practical tools for evaluating security vulnerabilities, perform threat modeling, and recommend threat mitigation measures. Gain hands-on, transferable skills relevant across IoT and other network architectures.

Prepare for Careers

- ✓ Develop skills for entry-level roles in the rapidly growing IoT and security domains
- ✓ Increase awareness of emerging technologies in the IoT Security space, such as Blockchain

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-Year University students

Estimated Time to Completion: 50 hours

Prerequisites:
- IoT Fundamentals: Connecting Things
- Networking Essentials and Cybersecurity Essentials (or equivalent)

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 24 practice labs
- ✓ 5 Cisco Packet Tracer activities
- ✓ 50+ interactive activities, videos, & quizzes
- ✓ 1 hands-on capstone activity
- ✓ 1 IoT Security game with 10 missions
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
CCNA Security or CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Yes

Features the IoT Security Game!

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Additional Courses

Entrepreneurship

Course Overview

This course teaches business and financial skills, behaviors, and attitudes, to help students develop an entrepreneurial mindset. Students learn by completing a series of interactive case studies that present realistic scenarios.

Benefits

Supplement your technical expertise with with entrepreneurial thinking, business development, and financial management skills.

Explore Opportunities in Technology

- ✓ Explore how to think like an entrepreneur
- ✓ Expand your mindset and employability with skills complementary to IT expertise
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: General audience

Estimated Time to Completion: 15 hours

Recommended Preparation:
CCNA: Introduction to Networks

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 7 modules with interactive, online case studies

Course Recognitions: Certificate of Completion

Recommended Next Course:
Hackathon Playbook (Design Thinking)

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Practice

Hands-on tools & interactive experiences
to build skills, not just knowledge

Hands-On Practice

A key pillar of Networking Academy

- Motivate your students with exciting experiences that make learning very real
- Accelerate and optimize each student's path to career-ready skills
- Build student confidence: "I can do this!"
- Developed by learning scientists & subject-matter experts

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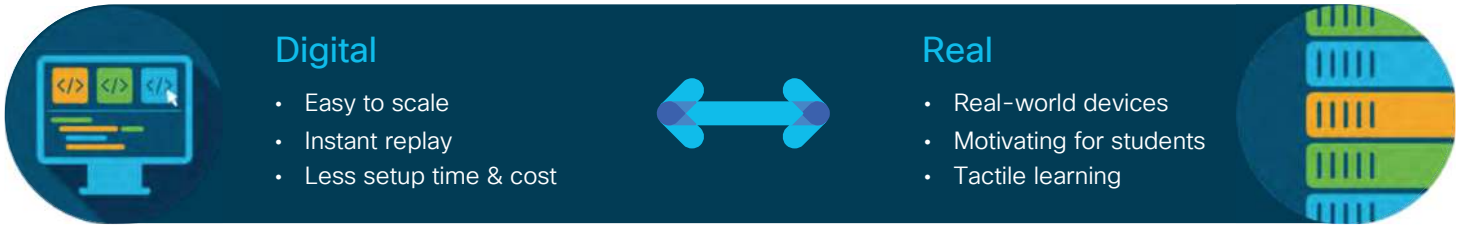
A Suite of Lab Environments

Options ranging from simulation to physical hardware



Simulation with Packet Tracer

Virtualized Equipment

Virtual Machines

Prototyping Lab

Remote Equipment

Physical Hardware

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Packet Tracer

Overview

Cisco Packet Tracer is a powerful simulation and visualization learning environment. Practice building simple and complex networks across a variety of devices and extend beyond routers and switches.

Benefits

Teach complex concepts without complex hardware. Leverage the versatility of simulation for lectures, labs, games, homework, assessments, and competitions.

Build Skills for Success

- ✓ Quickly try, experiment, learn, repeat
- ✓ Practice teamwork, critical thinking and creative problem solving skills
- ✓ Integration with online assessment engine prepares students for hands-on assessments

Details

Use it to:

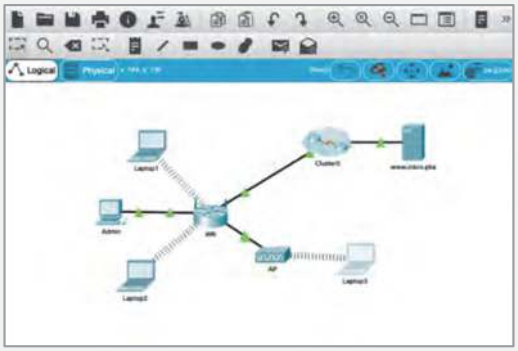
- Visualize networks using everyday examples
- Build your own simulated networks
- Investigate and troubleshoot network functionality using simulation mode
- Practice configuring network and IoT devices

How to Access:
Enroll in Intro to Packet Tracer course to download desktop version

Courses that use Packet Tracer include:

- Networking Essentials
- Cybersecurity Essentials
- IT Essentials
- Introduction to Internet of Things (IoT)
- CCNA
- CCNP Enterprise
- CCNA Security
- CyberOps Associate

Practice



Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Quick Links

Packet Tracer Landing Page

Introduction to Packet Tracer Course Page

Teaching with Packet Tracer

Introduction to Packet Tracer

Course Overview

The Introduction to Packet Tracer series is designed for new users of Packet Tracer for self-study and familiarization with the tool used in many Networking Academy courses. Packet Tracer courses are available for the desktop and for mobile (Android and iOS).

Benefits

The Introduction to Packet Tracer series introduces tips and best practices to help instructors and students use Cisco Packet Tracer as an effective and engaging learning and assessment tool.

Explore Opportunities in Technology

- ✓ Learn the power of simulation tools to build and investigate networks in software
- ✓ Get familiar using Cisco Packet Tracer, a key learning tool you will use in NetAcad courses

Course Details

Target Audience: General audience

Estimated Time to Completion: 10 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 8 chapters with instructional videos
- ✓ 13 Cisco Packet Tracer activities
- ✓ Sample files
- ✓ 2 quizzes

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: Networking Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Virtual Machines (VM)

Overview

Virtual machines are virtual environments that emulate a computer system. These self-contained virtual environments let students explore systems to the breaking point without causing actual damage.

Benefits

Experiment and explore in a low-risk environment. Deliberately test security threats and malware in a safe environment.

Build Skills for Success

- ✓ Hands-on cybersecurity practice
- ✓ Students become familiar with virtual machines to prepare for on-the-job skills

Details

Use it to:

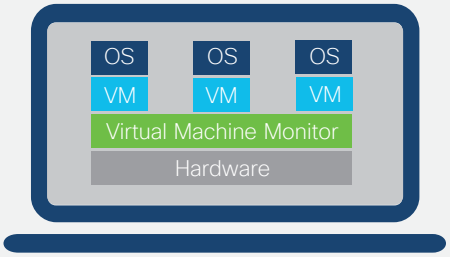
- Teach virtual machine technology
- Simulate real-world cybersecurity threat scenarios
- Create opportunities for ethical hacking, security monitoring, analysis, and resolution

How to Access:
Free software download from Oracle VirtualBox
https://www.oracle.com/virtualization/technologies/vm/downloads/virtualbox-downloads.html

Courses that use Virtual Machines include:

- CCNA
- CyberOps Associate
- Emerging Technologies Workshop: Model-Driven Programmability
- DevNet Associate

Practice



Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Prototyping Lab (PL App)

Overview

Dive into the world of sensors and connected things. The Prototyping Lab Kit uses a Raspberry Pi and Arduino setup to create an end-to-end IoT system on a lab table.

Benefits

Lab setup is easy with low-cost hardware and app download. Use real devices & code to collect, analyze, and present data from the physical world.

Build Skills for Success

- ✓ Spark entrepreneurial and systems thinking
- ✓ Students gain hands-on experience with an entire IoT system
- ✓ Build programming skills with Blockly visual programming or coding in Python

Details

Use it to:

- Acquire physical data with Arduino
- Collect and analyze data on Raspberry Pi
- Visualize data with Jupyter Notebook
- Connect to cloud applications with REST APIs

How to Access:

Prototyping Lab is comprised of the Prototyping Lab Kit (hardware) and Prototyping Lab App (software).

Find the hardware list and software download links on the Resources page: https://www.netacad.com/portal/resources/course-resources/cisco-prototyping-lab-resources

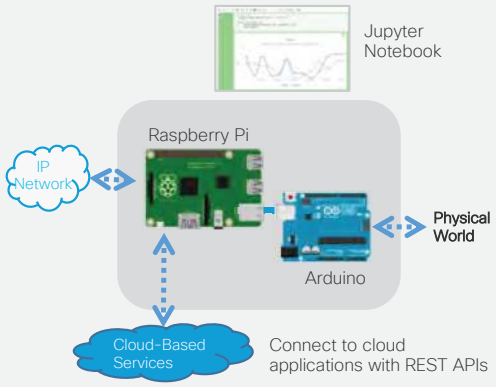
Courses that use Prototyping Lab include:

- IoT Fundamentals: Connecting Things
- IoT Fundamentals: Big Data & Analytics
- Hackathon Playbook (Design Thinking)
- IoT Security

Prototyping Lab Kit includes:

- Raspberry Pi 3 CanaKit Ultimate Starter Kit (or equivalent)
- Cables, sensors, and actuators
- SparkFun Inventor's Kit for Arduino v3.2 (or equivalent)
- Prototyping Lab App

Practice



Requirements & Resources

- **Cost:** Yes (for hardware); Free software download

Hands-on tools & interactive experiences to build skills, not just knowledge

Remote Equipment: NDG NETLAB+

Overview

Connect to real hardware through the web. Available through Networking Academy partnerships:

NDG NETLAB+ provides cloud-based, remote access to networking equipment and PCs.

Benefits

Reduce your setup time for complex labs with on-demand remote access to lab equipment when you need it.

Build Skills for Success

- ✓ Provide practice opportunities for students to complete labs from anywhere
- ✓ Supplement your lab offerings when physical hardware is not available at your institution

Details

Use it to:

- Access remote IT equipment through a web browser
- Reduce your lab setup time

How to Access:
Learn more at the NDG NETLAB+ page for Networking Academy.
https://www.netdevgroup.com/content/cnap/

Courses that use Remote Equipment include:

- CCNA
- CCNP Enterprise
- IT Essentials
- CyberOps Associate
- CCNA Security

Practice

In partnership with

NDG NETLAB+

Requirements & Resources

- **Cost:** Yes

Hands-on tools & interactive experiences to build skills, not just knowledge

Remote Equipment: DevNet Sandbox

Overview

Connect to real hardware through the web. Available through Networking Academy partnerships:

Cisco DevNet Sandbox offers packaged labs for software development, testing APIs, training, hackathons, and more.

Benefits

Reduce your setup time for complex labs with on-demand remote access to lab equipment when you need it.

Build Skills for Success

- ✓ Students get experience running their code against live network infrastructure
- ✓ Practice working in a sandbox environment just like on-the-job software developers

Details

Use it to:

- Interact with live network infrastructure and programmable devices using real-world Application Programming Interfaces (APIs)

How to Access:

Learn more at the Cisco DevNet Sandbox page https://developer.cisco.com/site/sandbox/

Courses that use Remote Equipment include:

- Workshop: Experimenting with REST APIs
- Workshop: Network Programmability
- Workshop: Model-Driven Programmability
- DevNet Associate

Practice

DEVNET DevNet Sandbox

Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Physical Hardware

Overview

Bring the real world inside the classroom so students can practice physical, sensory skills. Seeing and exploring with real equipment makes the abstract more tangible.

Benefits

Excite learners to consider career pathways in networking technology, and increase retention through tactile learning.

Build Skills for Success

- ✓ Provide hands-on practice with the same devices found in the work environment
- ✓ Students gain real experience even before on-the-job training
- ✓ Build transferable, career-ready skills

Details

How to Access:

1. Contact a local Cisco Reseller Partner for pricing and order fulfillment. Use Partner Finder to find one near you.
2. Consider working with an Academy Support Center (ASC) who can help you choose the best way to secure equipment needed for your location. They may offer loaner equipment or used equipment options

Courses that use Physical Hardware include:

- Networking Essentials
- IT Essentials
- CCNA
- CCNP Enterprise
- CCNA Security
- IoT Security

Requirements & Resources

- **Cost:** Yes

Discounts

Equipment discounts are available for Networking Academy institutions. Available for Cisco equipment needed for Networking Academy courses and labs when purchased through a Cisco Reseller Partner.

Hands-on tools & interactive experiences to build skills, not just knowledge

Language Availability

October 2020

Explore Course Languages

Explore	Arabic	Chinese-Simplified	Chinese-Traditional	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hindi	Hungarian	Indonesian	Italian	Japanese	Kazakh	Korean	Polish	Portuguese-Brazil	Portuguese-Portugal	Romanian	Russian	Spanish	Turkish	Ukrainian
Cybersecurity Essentials		✓				✓	✓		✓						✓				✓			✓	✓		✓
Entrepreneurship	✓	✓	✓			✓	✓			✓				✓					✓				✓		
Get Connected		✓	✓			✓	✓		✓		✓			✓					✓	✓			✓		
Introduction to Cybersecurity	✓	✓			✓	✓	✓		✓	✓			✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Introduction to IoT / Introduction to IoE	✓	✓	✓		✓	✓	✓		✓	✓				✓	✓	✓		✓	✓			✓	✓		✓
Introduction to Packet Tracer						✓																			✓
Networking Essentials 1.0	✓	✓				✓	✓		✓						✓				✓			✓	✓		
NDG Linux Unhatched						✓	✓		✓					✓									✓		

Career Course Languages

October 2020

Career	Arabic	Chinese-Simplified	Chinese-Traditional	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hindi	Hungarian	Indonesian	Italian	Japanese	Kazakh	Korean	Polish	Portuguese-Brazil	Portuguese-Portugal	Romanian	Russian	Spanish	Turkish	Ukrainian
CCNA Cybersecurity Operations		✓	✓			✓	✓								✓							✓	✓		
CCNA R&S: Connecting Networks	✓	✓		✓		✓	✓					✓			✓			✓	✓			✓	✓	✓	
CCNA R&S: Introduction to Networks	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓		✓	✓			✓	✓		✓	✓	✓	✓	
CCNA R&S: Routing and Switching Essentials	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓			✓			✓	✓		✓	✓	✓	✓	
CCNA R&S: Scaling Networks	✓	✓		✓		✓	✓					✓			✓			✓	✓			✓	✓	✓	
CCNA Security		✓				✓																✓			
CCNA: Enterprise Networking, Security, and Automation	✓	✓				✓	✓												✓			✓	✓		
CCNA: Introduction to Networks	✓	✓				✓	✓		✓									✓	✓			✓	✓		✓
CCNA: Switching, Routing, and Wireless Essentials	✓	✓				✓	✓												✓			✓	✓		
CCNP Enterprise: Advanced Routing						✓																			
CCNP Enterprise: Core Networking						✓																			
CyberOps Associate						✓																			
DevNet Associate						✓																			
Emerging Technologies Workshop - Experimenting with REST APIs using Webex Teams						✓																			
Emerging Technologies Workshop - Model Driven Programmability						✓																			
Emerging Technologies Workshop - Network Programmability with Cisco APIC-EM						✓																			
IoT Fundamentals: Big Data & Analytics		✓				✓	✓																✓		
IoT Fundamentals: Connecting Things		✓				✓	✓		✓														✓		✓
IoT Fundamentals: Hackathon Playbook						✓																	✓		✓
IoT Fundamentals: IoT Security		✓				✓																			
IT Essentials	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓		✓	✓		✓	✓	✓	✓	✓
Networking Essentials 2.0						✓																			
NDG Linux Essentials						✓																	✓		
PCAP - Programming Essentials in Python						✓												✓					✓		

October 2020

Complementary Offerings Languages

Complementary	Arabic	Chinese-S	Chinese-T	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hungarian	Italian	Japan.	Kazakh	Korean	Polish	Portuguese	Romanian	Russian	Spanish	Turkish	Ukrainian
NDG Linux I and II						✓																
CLA: Programming Essentials in C						✓																
CLP: Advanced Programming in C						✓																
CPA: Programming Essentials in C++						✓																
CPP: Advanced Programming in C++						✓																

Quick Links

- Networking Academy Website – netacad.com
- Networking Academy Program Overview
- Helpful Program Resources, including NetAcad Program FAQ
- Course Demos (available for select courses)
- Cisco Interactive Course Pathways
- Employment Opportunities (Talent Bridge)
- Remote Teaching & Learning – Tools and Tips

2017-18

Dept. of Civil Engineering

ORGANIZING COMMITTEE

CHIEF PATRON
Sri. P Ashok Gajapathi Raju, Chairman, MANSAS
Ms. P Aditi Gajapathi Raju, Member, Trust Board

PATRON
Dr. KVL Raju, Correspondent & Principal,M VGR

ADVISORY BODY
Dr. YMC Sekhar, Vice-Principal
Dr. Ch Purnachandra Rao, Dean (Accred. &Est)
Dr P Ranga Raju, Dean (Admin)
Dr P Sita Rama Raju, Dean (Quality Assurance)
Dr. R Ramesh, Dean (Research & Development)
Dr. K Rajeswara Rao, Dean (Civil Infrastructure)
Dr. DR Prasada Raju, Dean (Faculty Development)

CONVENOR
Dr. P Markandeya Raju, Professor & HoD

ORGANIZING SECRETARY
Dr. P Sudheer, Asst. Professor

COORDINATOR
Mr. Rajendra Prasad Singh, Asst. Professor

FACULTY MEMBERS

Dr. S Chandramouli
Dr. Partheepan Ganesan
Sri. B Ramesh Raju
Mr. A Varaprasad
Mr. V Vinay
Mr. BV Joga Rao
Mr. S Purushotham Rao
Mr. K Santosh Kumar
Ms. T Jahnavi
Mr. B Jagadeesh
Mr. A Sai Kumar
Dr. R Maheswaran
Mr. S Murali Sagar Varma
Mr. Ch V Ravi Sankar
Mr. Kalyan AVS
Mr. B Ramu
Mr. TP Sreejani
Mr. SSB Sai Kumar
Mr. W Sai Deepak
Mrs. D Praseeda
Mr. G Rahul Reddy
Mr. BVSSR Bhaskar

Who can attend?

Civil Engineering UG students (2nd, 3rd and 4th Year)

How to apply?

Interested participants have to meet the concerned faculty on or before **01.07.2017**. Selected candidates will be intimated. Registration fees can be paid on the spot

Contact personnel

Dr. P Sudheer
sudheer.ponnada@mvgrce.edu.in

Mr. Rajendra Prasad Singh
Assistant Professor
rpsingh@mvgrce.edu.in
8500 488 758

Important dates

Last date for submission of registration: **01.10.2017**

Intimation of selected candidates: **03.010.2017**

Add-on Course on

Computer Aided Drawing for Civil Engineers

Organized by

Department of Civil Engineering

MVGR College of Engineering (Autonomous)
Vizianagaram, Andhra Pradesh-535 005
www.mvgrce.com

ORGANIZING COMMITTEE

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Mr. B Jagadeesh
Mr. A Sai Kumar
Dr. R Maheswaran
Mr. S Murali Sagar Varma
Mr. Ch V Ravi Sankar
Mr. RP Singh
Mr. B Ramu
Mr. TP Sreejani
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Contact personnel

Dr. S Chandramouli, Professor
chandramoulis@mvgrce.edu.in
9052 722 221
Mr. Kalyan AVS, Assistant Professor
kalyanavs@mvgrce.edu.in
9966 119 507

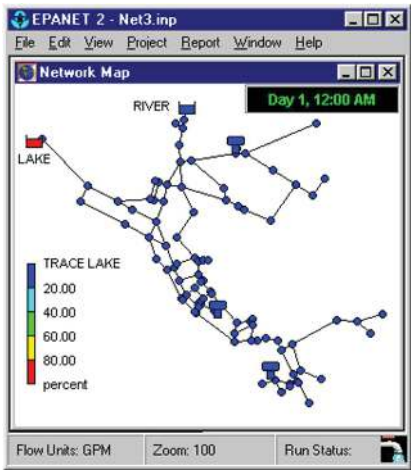
Important dates

Last date for submission of registration: **01.07.2017**

Intimation of selected candidates: **03.07.2017**

Add-on Course on

Hydraulic Analysis of Water Distribution Network using EPANET



Organized by

Department of Civil Engineering

MVGR College of Engineering (Autonomous)

Vizianagaram, Andhra Pradesh-535 005

www.mvgrce.com

Dept. of EEE

HOD (MVGR EEE) <hod.eee@mvgrce.edu.in>

Internship training for MVGR Engineering college EEE Students

2 messages

Ravi Kumar a <ravikumar.a@apssdc.in> Fri, Nov 2, 2018 at 11:14 AM
To: eeehod@mvgrce.edu.in

Dear sir,
Thank you so much for your interest in imparting the training for your students under internship program for a period of one month for final year of Electrical Engg.students. Received the student lists.
we will start the training for 75 students from 26-11-2018,please find the attachment which contains ,schedule of training .For any further details you are free to contact me.

A Ravi Kumar,

Associate Project Director,

APSSDC-SIEMENS Project.

MVGR INTERNSHIP SCHEDULE.xlsx
14K

HOD (MVGR EEE) <eeehod@mvgrce.edu.in> Fri, Nov 2, 2018 at 12:01 PM
To: saratkumar sahu <sahu.sarat@gmail.com>

[Quoted text hidden]
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With best regards.

Dr. Sarat Kumar Sahu
M.Tech, Ph.D., MIEEE, MIE(I),LMISTE
Professor &Head
Department of Electrical & Electronics Engineering
MVGR College of Engineering
Vizianagaram-535005
Andhra Pradesh, INDIA

E-mail: eeehod@mvgrce.edu.in

Office Phone No:91- 8922-241167

Cell: 91- 9490252044

MVGR INTERNSHIP SCHEDULE.xlsx
14K

Internship training for MVGR Engineering college E

Ravi Kumar a <ravikumar.a@apssdc.in>
to eeehod

Dear sir,
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A Ravi Kumar,

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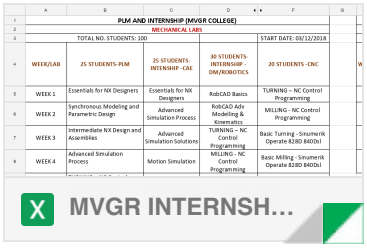


PLM AND INTERNSHIP (MVGR COLLEGE)
MECHANICAL LABS
TOTAL NO. STUDENTS: 100 START DATE: 03/12/2018

WEEK/LAB	25 STUDENTS-PLM	25 STUDENTS-INTERNSHIP -CAE	30 STUDENTS-INTERNSHIP -DM/ROBOTICS	20 STUDENTS -CNC
WEEK 1	Essentials for NX Designers	Essentials for NX Designers	RobCAD Basics	TURNING – NC Control Programming
WEEK 2	Synchronous Modeling and Parametric Design	Advanced Simulation Process	RobCAD Adv Modelling & Kinematics	MILLING - NC Control Programming
WEEK 3	Intermediate NX Design and Assemblies	Advanced Simulation Solutions	TURNING – NC Control Programming	Basic Turning - Sinumerik Operate 828D 840Dsl
WEEK 4	Advanced Simulation Process	Motion Simulation	MILLING - NC Control Programming	Basic Milling - Sinumerik Operate 828D 840Dsl

MVGR INTERNSH...

HOD (MVGR EEE) <eeehod@mvgrce.edu.in>
to saratkumar

--
With best regards.

Dr. Sarat Kumar Sahu
M.Tech, Ph.D., MIEEE, MIE(I),LMISTE
Professor &Head
Department of Electrical & Electronics Engineering
MVGR College of Engineering
Vizianagaram-535005

HOD (MVGR EEE) <hod.eee@mvgrce.edu.in>

Requirements for registration in APSSDC-SIEMENS CoE

3 messages

Ravi Kumar a <ravikumar.a@apssdc.in> Mon, Nov 19, 2018 at 11:20 AM
To: "aparna devi (MVGR Mech)" <aparna_devi@mvgrce.edu.in>, "Prof R Ramesh (MVGR Mech)" <dr.r.ramesh@mvgrce.edu.in>, eeehod@mvgrce.edu.in, mechhod@mvgrce.edu.in

Dear Sir/Madam,

As per our discussion please find the following procedure for registering the candidates in Skill development program of APSSDC-SIEMENS.

We require soft copy of students data in the format as enclosed (Document Name-Student List)

One faculty member from each branch must accompany the students during the training period.

Students must attend the classes from 9:00 AM to 5:00 PM (Lunch: 1PM to 2PM)

Students are advised to bring their lunch boxes (Canteen facility is not available in AU College of Engineering)

We require the following documents from each student :
1.Photo
2.Photo copy of Aadhaar
3.Photo copy of 10th
4.Photo copy of Caste certificate (BC/SC/ST)
5.College ID Card

Note:The student has to fill the application form and has to submit with the above documents on first day of training. Application form is here with enclosed

Warm Regards,

A Ravi Kumar,

Associate Project Director,

APSSDC-SIEMENS Project.

2 attachments

Student list (1).xlsx
13K

COE Application form.pdf
363K

HOD (MVGR EEE) <eeehod@mvgrce.edu.in> Fri, Nov 30, 2018 at 12:00 PM
To: ravikumar.a@apssdc.in

Sir,
I will upload the new students list by 2:30PM along with fees details.
The number of students till now registered are 60.
We will pay the fee for 60 students and give their fees details.
[Quoted text hidden]
--
With best regards.

Dr. Sarat Kumar Sahu
M.Tech, Ph.D., MIEEE, MIE(I),LMISTE

Professor &Head
Department of Electrical & Electronics Engineering
MVGR College of Engineering
Vizianagaram-535005
Andhra Pradesh, INDIA

E-mail: eeehod@mvgrce.edu.in

Office Phone No:91- 8922-241167

Cell: 91- 9490252044

HOD (MVGR EEE) <eeehod@mvgrce.edu.in> Fri, Nov 30, 2018 at 12:02 PM
To: "B.Jagannadh Ch Yadav" <badakalajagannath@gmail.com>

[Quoted text hidden]
[Quoted text hidden]

2 attachments

Student list (1).xlsx
13K

COE Application form.pdf
363K

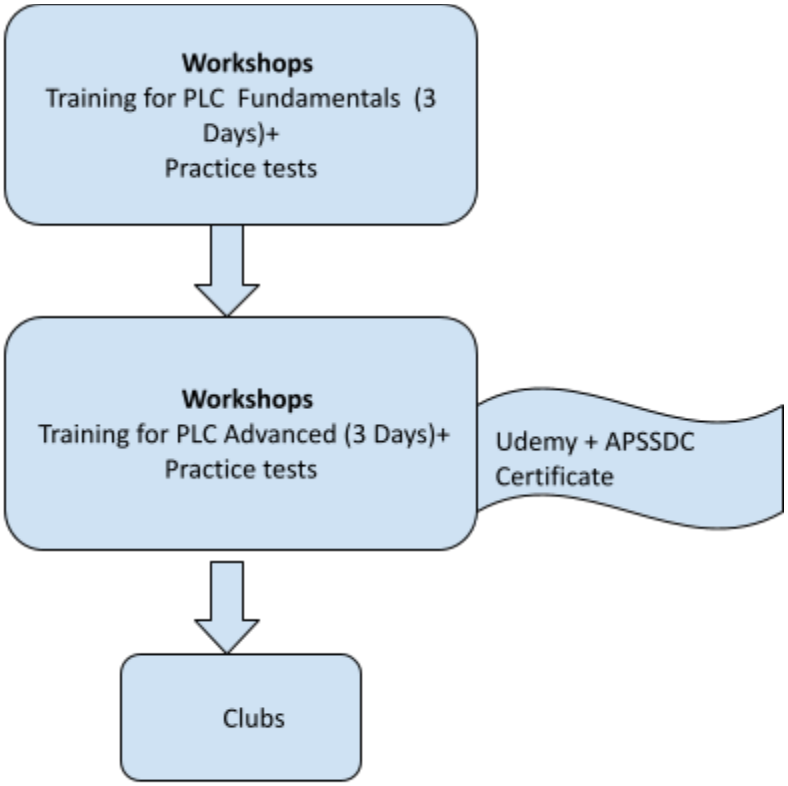
PLC

Course Overview

By providing Basics-on workshop to Students , A programmable logic controller (PLC) is an electronic device used in many industries to monitor and control building systems and production processes. Unlike PCs and Smartphones, which are designed to perform any number of roles, a PLC is designed to perform a single set of tasks, except under real-time constraints and with superior reliability and performance.

Intended audience : 2nd , 3rd Year & 4th Year

Training workflow :



Workshops:

The objective of workshop is to see that the students are well trained for the prerequisite courses of certification.

Duration: 6 days (Phase 1 + Phase -2)

Objective:

- To give basic knowledge on **PLC.**
- Projects on PLC.

Training Methodology:

- offline

Software & Kits:

- Delta WPL

Certification Agency:

Udemy +NFI : National Foundation For India

PLC Programming of Allen Bradley, Delta, Siemens, Omron & Schneider using LIVE Examples with HMI Interfacing

Assessments/Practice test: To ensure that students have understood the content covered during the session; a brief test will be conducted on LMS after every training session.This will help the student understand where he/she needs to improve . LMS (Learning and Management System) is built from OpenEdx. It contains all course related content such as hand-outs, videos and practice sessions. APSSDC will provide individual student account and Student/college wise analytics are also available

Clubs: After Workshops we will initiate clubs with one faculty and two merit students from each year in every College

Selection of the Merit students for the Club: At the end of the work shops we will select two merit students from every college based on Written Exam & Tool Test.

Advantages to be a member in Club

a. We will provide guidance for their Projects.
b. We will give priority for placement drives conducted by APSSDC.
c. Eligibility for University Innovation Fellows (UIF).
d. Priority for International programs conducted by APSSDC and etc..

Course Content & Day Wise Schedule for workshop:

PLC Fundamentals Phase 1

Day	Course content
Day-1	Introduction to Automation,History of Automation,Introduction to PLC, Introduction to PLC Programming types,Introduction about Ladder logic diagram, NO & NC switch based concept,Application problems based on NO & NC & Latching concepts,Application problems based on Latching concept.
Day-2	Introduction to Blinking concept,Application problems based on Blinking concept, Introduction to Memory coils,problems based on Memory coils & Application problems based on Memory coils, Sensor based problems.
Day-3	Introduction to Timers and Timer based Problems,Application problems based on Timers, NO&NC combination,Introduction to Counters,Counter based problems & Mini project based on all concepts like Traffic light controller.

PLC Advanced Phase 2

Day	Course content
Day-1	Introduction of Industrial Automation,Applications of Automation,History of Automation,Introduction to PLC,Introduction to PLC Programming types,Introduction about Ladder logic diagram, introduction about Basic Elements, Basic Rules Regarding Programming, Sample Program & Introduction of NO & NC switch based concept,explanation Regarding Basic Electrical Circuits Related to NO &NC,Application problems based on NO & NC
Day-2	Introduction to Latching,blinking,Application problems based on NO & NC with Latching,blinking,introduction About Memory Coils .Application problems based on Memory coils & Push button concepts, Sensor based problems & Introduction to Timers

Day-3	Real Time Applications Based On Timer concept,Application problems based on Timers,NO & NC combination,Introduction To Counter's Concept & Counter based problems,Real time Application problems based on NO & NC combination,Latches,Memory,Emergency Switches & Timers And Counters,traffic lights program by covering all the concepts.

PLC Competitions

Mitsubishi Electric Cup(National Level Competition For Factory Automation):
https://www.mitsubishielectric.in/fa/mecup/about.php

Dept. of Mechanical Engg

ANDHRA PRADESH STATE SKILL DEVELOPMENT CORPORATION (APSSDC)

DesignTech
Technology for designing the future

SIEMENS

Technical Skill Developement Institutes

SKill Development, Entrepreneurship & Innovation Department (SDE & I Dept.)
Governement of Andhra Pradesh
Amaravati.

About t-SDI

The SIEMENS t-SDI aim to train ITI, Diploma Students, Unemployed Youth and School Dropouts on world class Siemens Equipment & Software's. This TSDIs provides training by Siemens certified training partners. t-SDIs benefits student community immensely as they trained on the same Equipment / Software used by Industry. Participants acquire industry best practices through this training. The globally valid Siemens Certification after completion of training increase student's employability.

Deliverables of SIEMENS t-SDI

- ☑ Impart technical skills, value based education to students, so as to enable them to face the demands of the industry through Industrial Oriented Training with Contemporary learning methodologies.
- ☑ Support the academicians who are looking forward to take the advantage of the open up global market and research in the contemporary technology.
- ☑ Benefit the researchers in considerate the industry related problems.
- ☑ Provide a platform for consultancy in various Technological areas such as fields like Mechanical, Instrumentation, Electrical, Electronics & Communication, Automobile and Biomedical Engineering.

The Objective of SIEMENS Project is to Bridge the Gap Between Institution & Industries

Weak Education System

- Out dated engineering concepts
- No vocational experience/interaction
- Outdated tools in labs
- Faculty not equipped with industry trends & practices

Challenges Faced by Industry

- Large investment in time, effort & money to train students
- 6–18 months before recruits become productive
- Affects competitiveness of companies

SIEMENS Project Initiatives

- Bridge the gap between industry needs and available Skills through industry oriented training
- Enable institutes to improve quality of education
- Provide state-of-the-art tools to match industry standards
- Student Training in Industry skills

TSDI Laboratories

Automotive: 2- Wheeler Lab	Automotive: 4- Wheeler Lab	Electrical-Home Lab	Refrigeration and Air Conditioning (R & AC) Lab	C B T LAB(Solid edge) Lab
Electronics: Home Lab	Electronics: Office Lab	CNC	Welding	Agro and Farm Equipment Lab

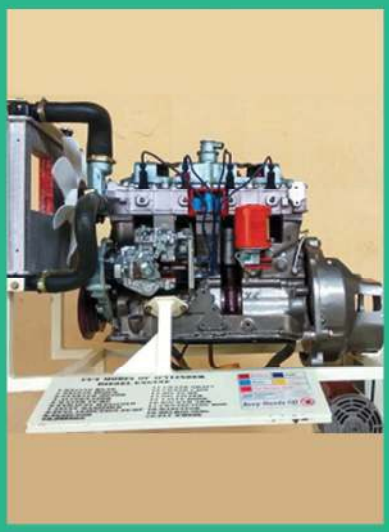
Automotive: 2- Wheeler Lab

- The Motorcycle Mechanic course is designed to help you to become a successful motorcycle mechanic.
- In-depth knowledge of various systems and SOPs will be covered supplemented with rich 3D visualization and application scenarios.

Modules Offered

- Basic Automotive Servicing
- Automobile Electrical system
- Automobile Body repair & Painting Repair of Engine System ,
- Repair and overhauling of engine
- system and Transmission Systems.

Automotive: 4- Wheeler Lab

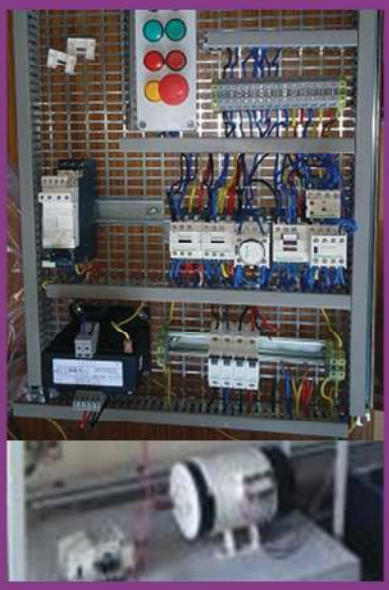


- This Module is designed so that you can gain knowledge about the basic maintenance of a passenger car and begin a career in the car repair and maintenance industry.

Modules Offered

- Basic Automotive Servicing , Repair & Overhauling
- Automobile Electrical system
- Automobile Body repair, denting & Painting
- Repair of Auto Air Conditioning system, Engine System , Automotive sensor and actuator technology Repair and overhauling of engine
- system (Petrol & Diesel) and Transmission Systems.

Electrical-Home Lab



- This Module is designed to get you started as an electrician for domestic purpose.
- It covers wiring procedures, earthing regulations and national electrical code (NEC) for both Domestic and Industrial with rich 3D visualization and application scenarios.

Modules Offered

- House Wiring
- Rules pertaining to Earthing
- The National Electrical Codes
- Testing of Domestic Wiring.
- Repair of Home Appliances

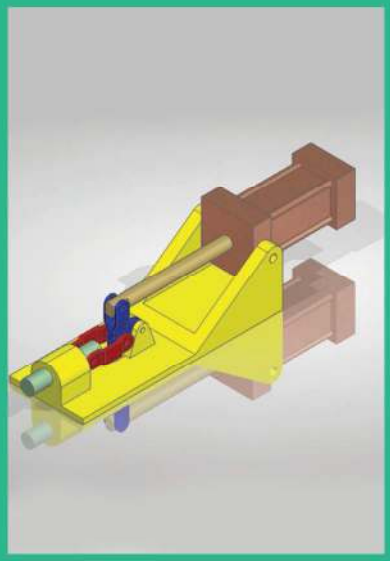
Refrigeration and Air Conditioning (R & AC) Lab

- This Course is designed so that Student can gain basic knowledge regarding the air conditioning process, its working principle, Installation and maintenance and the use of electrical tools needed to carry out these operations with rich 3D visualisation and application scenarios.

Modules Offered

- Installation of Refrigeration and Air Conditioning equipment
- Servicing and Maintenance of R & AC equipment

C B T LAB(Solid edge) Lab



- This course will be modular scalable from Foundation level to Expert level imparting the skill with respect to Design and test Part Modelling & Assembly, Drafting and sheet metal.

Modules Offered

- Introduction to Solid edge, sketching and practice of sketch drawing,
- Solid Modelling
- Part Modelling & Assembly
- Drafting and sheet metal

Electronics: Home Lab

- The Electorinc Home course is designed so that you are able to troubleshoot and diagnose the problem and identify the case for repair in Home Appliances.

Modules Offered

- Foundation Electronics
- Installtion & Maintenance of Home Theatre
- Repair & Maintenance of TVs-LCD/LED

Electronics: Office Lab

- The Electronic office course is designed to help you begin a career as Field Technician.
- This product provides an overview of the Installing the system and configuring the peripherals in an office, system troubleshooting, repair and its usage.

Modules Offered

- Installation & Maintenance of DTH System
- Installtion and Maintenance of Office Electronic Equipment - Network Devices
- Installtion and Maintenance of Office Electronic Equipment - Hardware Devices
- Repair & Maintenance of Smart Phones
- Installation & Maintenance of Office Application Software

Manufacturing: Production (CNC Machine) Lab

- This Course gives general information about different turning,Milling operations, machines used in turning, Milling operations, tools used in Milling,turning operations, components used in milling, turning machines, different types of defects that occur while working in milling, turning and their remedies.
- Subtractive manufacturing Process, TURNING-MILLING CNC Programming, Operating & Machining.

Modules Offered

- Introduction to CNC Technology - CNC Lathe
- Introduction to CNC Technology - VMC
- CNC Programming & Machining
- CNC Turning
- CNC Milling (VMC)
- CNC Machine Tool Maintenance - Mechanical
- CNC Machine Tool Maintenance - Electrical
- Machining Foundation
- Milling - Conventional
- Turning - Conventional
- Milling Master
- Turning Master
- CNC Milling Master
- CNC Turning Master
- Advance Forging &Heat Treatment Conventional

Manufacturing: Fabrication (Welding) Lab

- This Course imparts Skills about different welding processes, electricity and welding, types of arc welding, welding joints and symbols, oxy-fuel gas cutting, grinding, MMAW and MIG.

Modules Offered

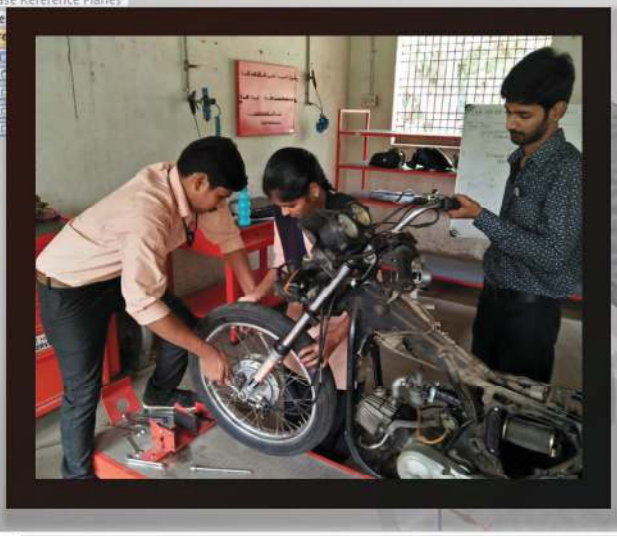
- Role of Electricity in Welding
- Basic Fitting work,
- Basic Sheet metal work
- Structural & Pipe Fabrication
- Different types of Welding Process and Gas Cutting

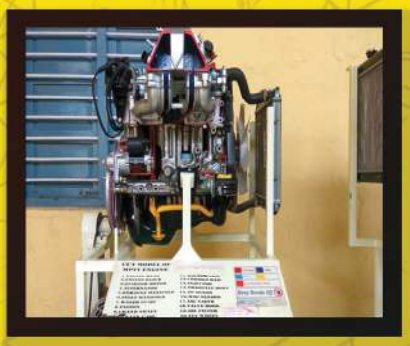
Agro and Farm Equipment Lab

- This Course Skills on Root Harvesting Equipment, Structure of Potato Digger, Structure of Peanut Digger, Types of Root Harvesting Equipment according to operation, mechanism and the location and functions of main components. Information regarding adjustment of Digger Blade, Digger's depth and Drive chains. Repair and Field operation of Tillage Equipment course is designed to help you become Tillage Equipment specialist.
- In-depth knowledge of various systems and SOPs will be covered, supplemented with rich 3D visualization and application scenarios. Repair and Maintenance of Tractor.

Specialized Modules

- Tractor Servicing Foundation
- Maintenance & Field Operation of Irrigation Equipment
- Maintenance & Field Operation of Seed Drills
- Repair And Field Operation Of Tractor
- Repair of Harvesting & Threshing Equipment
- Repair & Field Operation of Tillage Equipment
- Repair & Field Operation Of Root Harvesting Equipments
- Overhauling of Tractor
- Maintenance & operation of Power Tiller
- Repair of Power Tiller
- Repair, Maintenance & Field Operation of Potato Planters
- Repair, Maintenance & field operation of Rice Trans-planters





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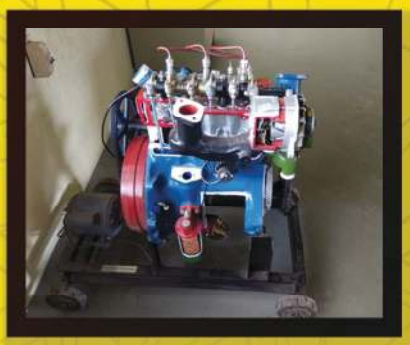
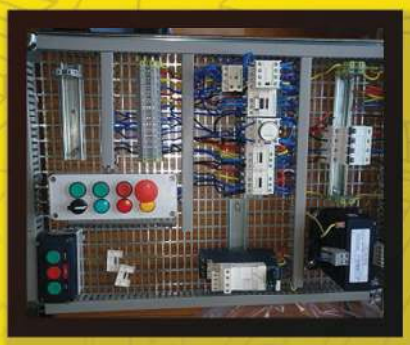




MICROWAVE TRAINER

SIEMENS Technical Skill Developement Institutes in Andhra Pradesh

SRIKAKULAM DISTRICT

1. Govt. Polytechnic, Srikakulam
2. Aditya Institute of Technology and Management, Tekkali
3. G M R Institute of Technology, Razam

VIZIANAGARAM DISTRICT

4. Maharaj Vijayaram Gajapathi Raj (MVGR) College of Engineering, Vizianagaram

VISAKHAPATNAM DISTRICT

5. Govt. Model Residential Polytechnic, Paderu
6. Indo-German Institute of Advanced Technology, Kancharapalem
7. Gayathri Vidya Parishad college of Engineering, Madhurawada

EAST GODAVARI DISTRICT

8. Pragathi Engineering college, Surampalem
9. Aditya Engineering college, Surampalem
10. Godavari Institute of Engineering and Technology, Rajahmundry

WEST GODAVARI DISTRICT

11. D N R College of Engg. and Technology, Bhimavaram
12. Sir C R Reddy College of Engineering, Eluru

KRISHNA DISTRICT

13. IIIT, Rajiv Gandhi University of Knowledge Technologies, Nuzvidu
14. Andhra Loyola Institute of Engineering and Technology, Vijayawada
15. Govt. Polytechnic, Vijayawada

GUNTUR DISTRICT

16. Vignan's Foundation for Science, Technology & Research University, Vadlamudi
17. R.V.R. & J.C.College of Engineering, Chowdavaram

PRAKASAM DISTRICT

18. Prakasam Engineering College, Kandukur
19. St. Ann's College of Engineering & Technology, Chirala

NELLORE DISTRICT

20. Audisankara College of Engineering & Technology, Gudur
21. Govt. Polytechnic, Nellore

CHITTOOR DISTRICT

22. Sree Vidyanikethan Engineering College, Sree Sainath Nagar, Tirupati
23. Madanapalle Institute of Technology and Science, Madanapalle
24. S V Govt. Polytechnic, Tirupati
25. Kuppam Engineering College, KES Nagar, Kuppam
26. Siddhaith Institute of Engineering & Technology(SIETK), Puttur
27. Sri City SEZ, Satyavedu

KURNOOL DISTRICT

28. Rajeev Gandhi Memorial College of Engineering and Technology, Nandyal
29. G Pulla Reddy Engineering College, Kurnool
30. Govt. Model Residential Polytechnic, Srisailam

ANANTAPUR DISTRICT

31. Govt. Polytechnic, Anantapuramu
32. Ananthalakshmi Institute of Technology and Sciences, Anantapuramu

KADAPA DISTRICT

33. IIIT Rajiv Knowledge Valley Campus, Idupulapaya
34. Annamacharya Institute of Technology & Sciences, Rajampet

Weblink: http://engineering.apssdc.in/siemens

APSSDC

ANDHRA PRADESH STATE SKILL DEVELOPMENT CORPORATION

3rd Floor, Infosight, Survey No. 78/2, Tadepalli, Vijayawada,
Andhra Pradesh - 522 501.

For More Details: 1800-425-2422

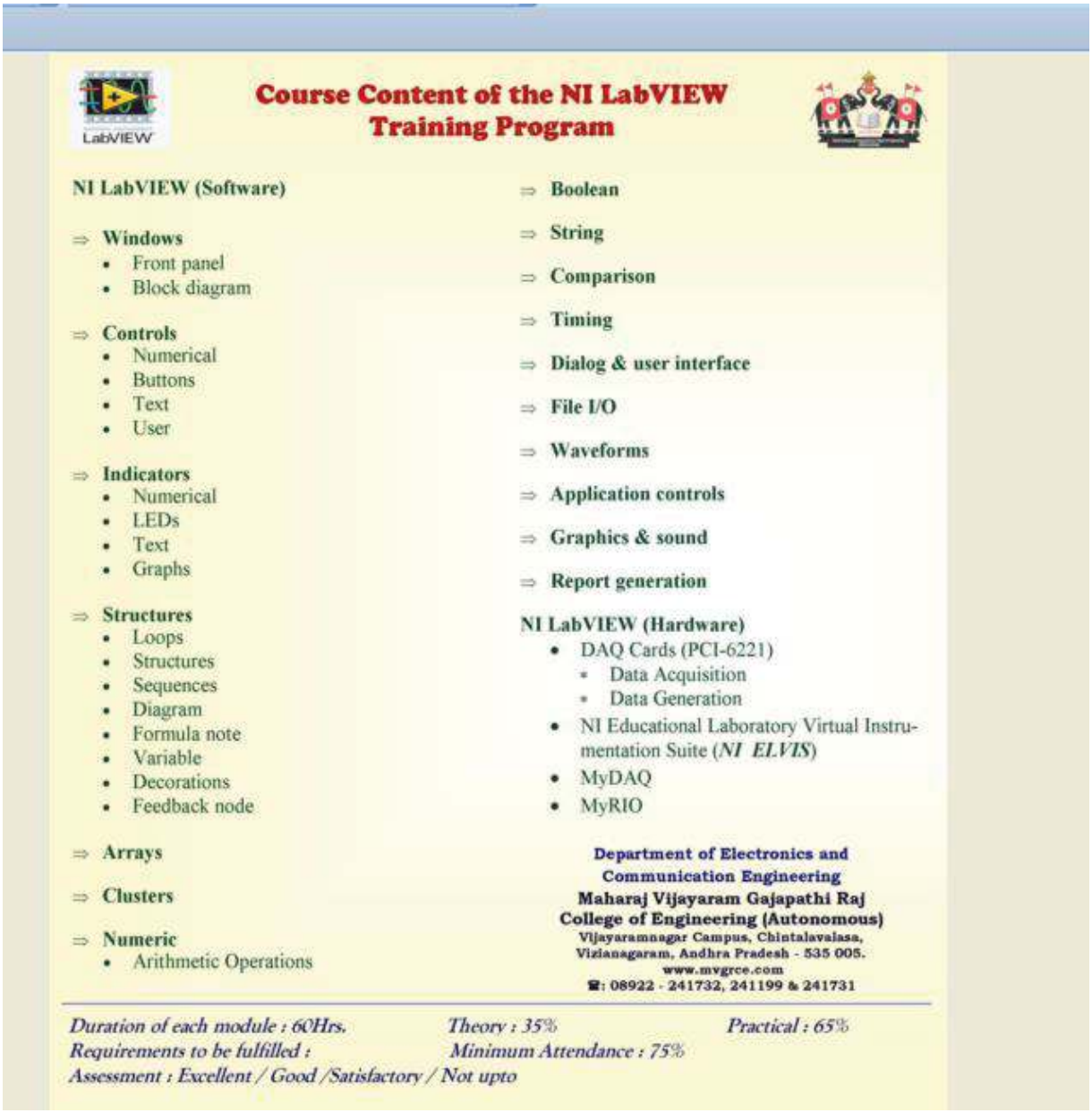
www.apssdc.in | facebook.com/apssdcskilldevelopment | linkedin.com/apssdcskilldevelopment | twitter.com/apssdcskilldevelopment

Dept. of ECE

List of value added courses

1. NI Lab View
2. Embedded Systems

Brochure of NI Lab View:



Course Content of the NI LabVIEW Training Program

NI LabVIEW (Software)

⇒ **Windows**
- Front panel
- Block diagram

⇒ **Controls**
- Numerical
- Buttons
- Text
- User

⇒ **Indicators**
- Numerical
- LEDs
- Text
- Graphs

⇒ **Structures**
- Loops
- Structures
- Sequences
- Diagram
- Formula note
- Variable
- Decorations
- Feedback node

⇒ **Arrays**

⇒ **Clusters**

⇒ **Numeric**
- Arithmetic Operations

⇒ **Boolean**

⇒ **String**

⇒ **Comparison**

⇒ **Timing**

⇒ **Dialog & user interface**

⇒ **File I/O**

⇒ **Waveforms**

⇒ **Application controls**

⇒ **Graphics & sound**

⇒ **Report generation**

NI LabVIEW (Hardware)
- DAQ Cards (PCI-6221)
  - Data Acquisition
  - Data Generation
- NI Educational Laboratory Virtual Instrumentation Suite (*NI ELVIS*)
- MyDAQ
- MyRIO

Department of Electronics and Communication Engineering
Maharaj Vijayaram Gajapathi Raj College of Engineering (Autonomous)
Vijayaramnagar Campus, Chintalavalasa, Vizianagaram, Andhra Pradesh - 535 005.
www.mvgrce.com
☎: 08922 - 241732, 241199 & 241731

Duration of each module : 60Hrs. *Theory : 35%* *Practical : 65%*
Requirements to be fulfilled : *Minimum Attendance : 75%*
Assessment : Excellent / Good /Satisfactory / Not upto

Dept. of CSE

Networking Academy

Product Catalog

October 2020

Networking Academy

Prepare the workforce of the future

Leading-edge curriculum designed to educate students for jobs of today and tomorrow

Two Options for Course Modality

Instructor-Led

The majority of Networking Academy students take courses led by an instructor through an education institution in their local community.

Self-Paced

Online courses are self-paced and use the same curriculum taught in Networking Academy classrooms around the world.

Types of Course Offerings

Explore Courses

Easy starting points to explore opportunities in technology

- ✓ No prerequisites
- ✓ No cost
- ✓ Typically self–paced
- ✓ Between 8-30 hours

Career Courses

Equip students with real job skills for entry-level positions

- ✓ Aligned to industry-valued certifications
- ✓ Typically instructor-led and 70 hours of instruction time
- ✓ Integrated hands-on practice and interactive experiences

Complementary Offerings

Extend your teaching with courses from Networking Academy partners

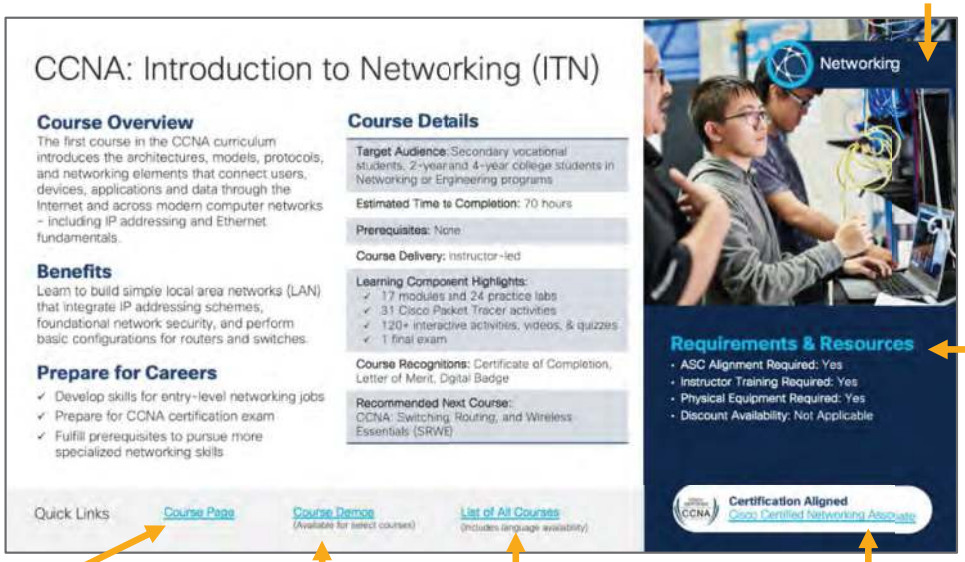
- ✓ Aligned to industry-valued certifications
- ✓ Some self-paced courses
- ✓ Some instructor-led courses for 70 hours of instruction time

Practice

Learning tools, hands-on labs, and interactive experiences are integrated into courses to build skills, not just knowledge

In This Catalog

Easy navigation by course category.



ASC Alignment Required: Due to the technical nature of some courses, Networking Academy may require that your institution receive support from an Academy Support Center (ASC).

Instructor Training Required: Some courses require accreditation or instructor training to ensure quality learning outcomes for your students.

Physical Equipment Required: Lab equipment may be required depending on the course.

Discount Availability: Discounts are available for select certification exams, for individuals meeting eligibility criteria.

Find the course page on NetAcad.com.

Course Demos are available for select courses to preview the content.

Explore the full Networking Academy course list online and filter by language. There is also a language summary matrix at the end of this catalog.

See which courses align with a certification, or get other tips about the course.

Networking Academy Curriculum Portfolio

October 2020

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Networking

Networking Essentials

Course Overview

Networking Essentials teaches networking based on environments students may encounter in daily life, including small office and home office networking. This course provides an engaging, self-paced learning experience using Packet Tracer simulation, interactive activities, and learning with your own devices at home.

Benefits

Develop a foundational understanding of the high-level network architecture and how a network operates.

Prepare for Careers

- ✓ For developers, cybersecurity, business analysts, or other professionals: gain essential networking knowledge
- ✓ For students: a launching point for many career pathways, from cybersecurity to software to business and more

Course Details

Target Audience: High school, secondary and 2-year college vocational students, college and university students studying IT and non-IT fields, career changers

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Self-Paced, Instructor-led

Learning Component Highlights:
- ✓ 20 modules and 19 practice labs
- ✓ 24 Cisco Packet Tracer activities
- ✓ 130+ interactive activities, videos, & quizzes
- ✓ 5 module exams
- ✓ 1 final exam and 1 skills assessment (Instructor-led only)

Course Recognitions: Certificate of Completion, Digital Badge (Instructor-led only)

Recommended Next Course:
CCNA: Introduction to Networks (ITN), Cybersecurity Essentials, or DevNet Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No (uses Packet Tracer and devices you already have at home)
- **Voucher Availability:** Not Applicable

Practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Introduction to Networking (ITN)

Course Overview

The first course in the CCNA curriculum introduces the architectures, models, protocols, and networking elements that connect users, devices, applications and data through the Internet and across modern computer networks – including IP addressing and Ethernet fundamentals.

Benefits

Learn to build simple local area networks (LAN) that integrate IP addressing schemes, foundational network security, and perform basic configurations for routers and switches.

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 17 modules and 24 practice labs
- ✓ 31 Cisco Packet Tracer activities
- ✓ 120+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNA: Switching, Routing, and Wireless Essentials (SRWE)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Switching, Routing, and Wireless Essentials (SRWE)

Course Overview

The second course in the CCNA curriculum focuses on switching technologies and router operations that support small-to-medium business networks and includes wireless local area networks (WLAN) and security concepts.

Benefits

Students learn key switching and routing concepts. They can perform basic network configuration and troubleshooting, identify and mitigate local area network (LAN) security threats, and configure and secure a basic WLAN.

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 16 modules and 14 practice labs
- ✓ 31 Cisco Packet Tracer activities
- ✓ 70+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNA: Enterprise Networking, Security, and Automation (ENSA)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Enterprise Networking, Security, and Automation (ENSA)

Course Overview

The final course in the CCNA series covers the architecture, security, and operation of an enterprise network, along with introducing the new ways in which network engineers interact with programmable infrastructure.

Benefits

Gain skills to configure and troubleshoot enterprise networks, learn to identify and protect against cybersecurity threats, and discover key concepts of software-defined networking, including controller-based architectures and application programming interfaces (APIs).

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 14 modules and 12 practice labs
- ✓ 29 Cisco Packet Tracer activities
- ✓ 100+ interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNP Enterprise: Core Networking (ENCOR)

Course Overview

This first course in the 2-course CCNP Enterprise series covers switching, routing, wireless, and related security topics, along with the technologies that support software-defined, programmable networks.

Benefits

Gain practical, hands-on experience and skills needed to configure, operate and troubleshoot large scale enterprise networks.

Prepare for Careers

- ✓ Develop skills for professional-level networking roles
- ✓ Prepare for the Cisco Enterprise Network Core Technologies exam (350-401 ENCOR) to earn an Enterprise Core Specialist certification
- ✓ Completion of both CCNP Enterprise courses prepares for CCNP Enterprise certification

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Recommended Preparation: CCNA or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 29 chapters and 41 practice labs
- ✓ 24 Cisco Packet Tracer activities (optional)
- ✓ 35+ interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNP Enterprise: Advance Routing (ENARSI)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Professional

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNP Enterprise: Advanced Routing (ENARSI)

Course Overview

This second of the 2-course CCNP Enterprise series focuses on implementation and troubleshooting of advanced routing and redistribution for OSPF, EIGRP and BGP along with VPN technologies, infrastructure security and management tools used in Enterprise networks.

Benefits

Gain practical, hands-on experience and skills needed to configure, operate and troubleshoot large scale enterprise networks.

Prepare for Careers

- ✓ Develop skills for professional-level networking roles
- ✓ Prepare for Cisco Enterprise Advanced Routing & Services exam (300-410 ENARSI) to earn a CCNP Specialist certification
- ✓ Completion of both CCNP Enterprise courses prepares for CCNP Enterprise certification

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Recommended Preparation: ENCOR or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 23 chapters and 40 practice labs
- ✓ 20 Cisco Packet Tracer activities (optional)
- ✓ 25+ videos & quizzes, 2 Skills Assessments
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
Broaden your skills with DevNet Associate, CyberOps Associate, Python, or Emerging Technologies Workshops

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Professional

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Operating Systems & Information Technology

Get Connected

Course Overview

Get Connected students are introduced to the Internet and experiment with various social networking sites. Talking characters and devices make this course a user-friendly environment for an audience new to Information Technology (IT).

Benefits

The digital world is upon us both personally and professionally. Gain essential skills like basic computer skills, such as how to use a computer, connect devices, and access search, email, and social media.

Explore Opportunities in Technology

- ✓ Develop your digital basics
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and general audience new to IT

Estimated Time to Completion: 30 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 chapters
- ✓ Illustrations and narrations guide students through topics
- ✓ Interactive activities, videos, & quizzes

Course Recognitions: Certificate of Completion

Recommended Next Course:
IT Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IT Essentials

Course Overview

IT Essentials covers fundamental computer and career skills for entry-level IT jobs. Students apply skills and procedures to install, configure, and troubleshoot computers, mobile devices, and software.

Benefits

Learn the fundamentals of connecting computers to networks. Plus, you'll enjoy working with Cisco Networking Academy's advanced simulation tools with hands-on labs to hone your troubleshooting skills and immediately practice what you learn!

Prepare for Careers

- ✓ Develop skills for entry-level technical support roles
- ✓ Prepare for CompTIA A+ certification exam
- ✓ Build your foundation for CCNA-level courses

Course Details

Target Audience: Secondary and 2-year college vocational students

Estimated Time to Completion: 70 hours

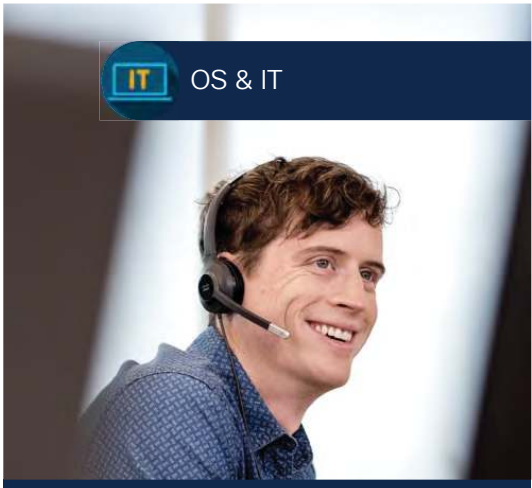
Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 14 chapters and 99 practice labs
- ✓ Cisco Packet Tracer, virtual laptop, and virtual desktop learning tools
- ✓ 29+ interactive activities
- ✓ 18+ assessments throughout the course
- ✓ 1 final and 2 practice certification exams

Course Recognitions: Certificate of Completion, Digital Badge, Letter of Merit

Recommended Next Course:
CCNA: Introduction to Networking (ITN)



Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
CompTIA A+ Certification

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux Unhatched

Course Overview

This course covers introductory back-end operating system knowledge by teaching basic installation and configuration of Linux and introducing the Linux command line.

Benefits

Learners ease into acquiring Linux knowledge without having to commit to more than 8 total hours of self-paced learning, guided step-by-step with a series of hands-on virtual machine activities.

Explore Opportunities in Technology

- ✓ Wade into the shallow end of Linux and see whether it's for you or not
- ✓ Develop your digital basics
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and general audience new to IT

Estimated Time to Completion: 6-8 hours

Prerequisites: None

Course Delivery: Self-paced

Learning Component Highlights:
- ✓ 1 module
- ✓ 20 pages
- ✓ Built-in Linux machine with activities
- ✓ 1 assessment

Course Recognitions: Letter of Completion

Recommended Next Course:
NDG Linux Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux Essentials

Course Overview

This course teaches fundamentals of the Linux operating system, command line, and open source programming concepts.

Benefits

Nearly every IT job requires some Linux knowledge. Gain hands-on practice with Linux commands through the Linux virtual machine embedded in the course.

Prepare for Careers

- ✓ Develop fundamental operating system skills for entry-level IT jobs
- ✓ Prepare for LPI certificate exam
- ✓ Fulfill prerequisites to pursue more specialized IT and networking skills

Course Details

Target Audience: Secondary and 2-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 16 chapters and 13 practice labs
- ✓ Built-in virtual machine to experiment with Linux commands
- ✓ Learner-directed activities
- ✓ Chapter, midterm, and final exams

Course Recognitions: Letter of Completion

Recommended Next Course:
NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
Linux Professional Institute (LPI) Linux Essentials Professional Development Certificate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux I and II

Course Overview

A 2-course series for aspiring Linux system administrators. Covers performing maintenance tasks on the command line, installing and configuring a computer running Linux, and configuring basic networking, using virtual machines running Linux.

Benefits

More rigorous and comprehensive than NDG Linux Essentials, this course develops your Linux mastery. Gain hands-on practice with Linux commands through the Linux virtual machine embedded in the course

Prepare for Careers

- ✓ Develop skills for careers in cloud computing, cybersecurity, information systems, networking, programming, software development, big data, and more
- ✓ Prepare for LPIC-1 certification exams

Course Details

Target Audience: 2-year and 4-year college students

Estimated Time to Completion: 140 hours

Recommended Preparation: NDG Linux Essentials or equivalent

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ Built-in virtual machine to experiment with Linux commands
- ✓ Practice labs and activities
- ✓ Chapter, midterm, and final exams

Course Recognitions: Letter of Completion

Recommended Next Course:
DevNet Associate

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required: No**
- **Discount Availability:** Yes
- **Cost:** Fee for self-paced classes. Cost for instructor-led classes is determined by the institution.

Certification Aligned
Linux Professional Institute LPIC-1

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programming

PCAP: Programming Essentials in Python

Course Overview

Designed as easy to understand and beginner-friendly course focusing on various data collections, manipulation tools, logic and bit operations and creating basic REST APIs.

Benefits

Learn to design, write, debug, and run programs encoded in the Python language. No prior programming knowledge is required. The course begins with the very basics guiding you step by step until you become adept at solving more complex problems.

Prepare for Careers

- ✓ Develop fundamental programming skills
- ✓ Prepare for PCEP and PCAP certification exam
- ✓ Build your foundation to pursue more specialized networking and software development skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 60-70 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 modules of interactive instructional content
- ✓ 30+ practice labs
- ✓ Built-in online tool for labs and practice
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
DevNet Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
PCEP: Certified Entry-Level Python Programmer
PCAP: Certified Associate in Python Programming

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CLA: Programming Essentials in C

Course Overview

This beginner course introduces the the universal concepts of computer programming using the C language, and teaches the syntax, semantics, and data types of the C language.

Benefits

Build transferable skills. When you learn C, you develop overarching fundamentals for all programming languages. Practice your skills through hands-on labs and write your own programs!

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CLA certification exam
- ✓ Fulfill prerequisites to pursue more advanced programming skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 9 modules of interactive instructional content
- ✓ 80+ practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, CCNA, NDG Linux Essentials

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CLA: C Programming Language Certified Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CLP: Advanced Programming in C

Course Overview

This advanced course teaches intermediate to advanced coding such as C handling variable number of parameters (<stdarg.h>), low level IO (<unistd.h>), memory and strings (<string.h> et al.), processes and threads, floats and ints (<math.h>, <fenv.h>, <inttypes.h> et al), and network sockets.

Benefits

Extend your programming knowledge and proficiency. Learn to think harder and deeper about programming concepts.

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CLP certification exam
- ✓ Set yourself up to succeed in jobs related to software development, network engineering, and system administration

Course Details

Target Audience: 2-year and 4-year college and university students

Estimated Time to Completion: 70 hours

Prerequisites: CLA: Programming Essentials in C course, CLA certification, or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules of interactive instructional content
- ✓ 18 practice labs
- ✓ Quizzes, chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CLP: C Certified Professional Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CPA: Programming Essentials in C++

Course Overview

This beginner course introduces the basics of programming in the C++ language and the fundamental notions and techniques used in object-oriented programming.

Benefits

Build transferable skills. When you learn C, you develop overarching fundamentals for all programming languages. Practice your skills through hands-on labs and write your own programs!

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CPA certification exam
- ✓ Fulfill prerequisites to pursue more advanced programming skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules of interactive instructional content
- ✓ 100+ practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, NDG Linux Essentials, DevNet Associate

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CPA: C++ Certified Associate Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CPP: Advanced Programming in C++

Course Overview

This advanced course teaches intermediate to advanced coding such as C++ template mechanism, understanding and using property template classes and methods, and the C++ STL library including solving common programming problems and the IO part.

Benefits

Extend your programming knowledge and proficiency. Learn to think harder and deeper about programming concepts.

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CPP certification exam
- ✓ Set yourself up to succeed in jobs related to software development, network engineering, and system administration

Course Details

Target Audience: 2-year and 4-year college and university students

Estimated Time to Completion: 70 hours

Prerequisites: CPA: Programming Essentials in C++ course, CPA certification, or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 9 modules of interactive instructional content
- ✓ 65 practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
CCNP Enterprise, NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Certification Aligned
CPP: C++ Certified Professional Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programmable Infrastructure

Internet of Things

Introduction to Internet of Things (IoT)

Course Overview

An introduction to the Internet of Things and how it enables Digital Transformation along with emerging technologies such as data analytics, artificial intelligence, and cybersecurity.

The course also highlights the importance of Intent-Based Networking using a software-driven approach and machine learning to be able to connect and secure tens of billions of new devices with ease.

Benefits

Gain a comprehensive view of how emerging technologies are shaping the digital business.

Explore Opportunities in Technology

- ✓ Develop your digital basics
- ✓ Explore the career opportunities in this new emerging technologies landscape

Course Details

Target Audience: Secondary, vocational, 2-year college, and general audience

Estimated Time to Completion: 20 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 6 chapters
- ✓ 17 practice labs (plus 4 optional labs)
- ✓ 7 Cisco Packet Tracer activities
- ✓ 40+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Insertion Points:
A great start for any learning path, and way to introduce the digital transformation before or during any Career course

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
  (Optional labs require additional hardware)
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Fundamentals: Connecting Things

Course Overview

This highly hands-on course introduces how to securely interconnect sensors, actuators, microcontrollers, single-board computers, and cloud services over Internet Protocol (IP) networks to create an end-to-end IoT system.

Benefits

Develop the interdisciplinary skillset required to prototype an IoT solution for a specific business case with a strong focus on the security considerations for emerging technologies.

Prepare for Careers

- ✓ Develop an entrepreneurial and design-thinking foundation for IoT job families that exist today and in the future
- ✓ Practice integrating hardware, software, data analytics, and security concepts
- ✓ Build your foundation to pursue more specialized networking, software development, and IoT skills

Course Details

Target Audience: Secondary, vocational, 2-year and 4-year college, 4-year university students

Estimated Time to Completion: 40-50 hours

Prerequisites: Basic programming, networking, and electronics

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 35 practice labs
- ✓ 9 Cisco Packet Tracer activities
- ✓ 32+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
IoT Fundamentals: Big Data & Analytics or Hackathon Playbook (Design Thinking)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Fundamentals: Big Data & Analytics

Course Overview

This highly hands-on course introduces how to use Python data libraries to create a pipeline to acquire, transform and visualize data collected from IoT sensors and machines.

Benefits

The transformative element of any IoT system is the data that can be collected from it. The ability to extract data and using data analytics techniques to gain insights are skills highly-valued by employers.

Prepare for Careers

- ✓ Develop entrepreneurial and design-thinking skills for IoT job families that exist today and in the future
- ✓ Practice integrating hardware, software, data analytics, and security concepts
- ✓ Build your foundation to pursue more specialized networking, software development, and IoT skills

Course Details

Target Audience: 2-year and 4-year college, 4-year university students

Estimated Time to Completion: 40-50 hours

Prerequisites: IoT Fundamentals: Connecting Things

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 11 practice labs
- ✓ 18 Jupyter Notebooks (with Python code)
- ✓ 35+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
IoT Fundamentals: Hackathon Playbook

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Hackathon Playbook (Design Thinking)

Course Overview

The Hackathon Playbook is a comprehensive framework of tools and templates to prepare and run a Hackathon as a result of best practices and lessons-learned collected from the global execution of IoT Hackathons within Networking Academy and by other organizers.

Benefits

Practice design thinking through a hands-on project. Deepen your multidisciplinary IoT and data skills by defining, designing, prototyping, and presenting an IoT solution to a panel of industry experts and peers.

Prepare for Careers

- ✓ Build a design thinking mindset
- ✓ Gain resume-worthy experience working on a real prototype
- ✓ Get feedback and mentorship from industry experts

Course Details

Target Audience: Secondary, vocational, 2-year and 4-year college, 4-Year university students

Estimated Time to Completion: 20-30 hours

Prerequisites: IoT Fundamentals: Connecting Things and/or Big Data and Analytics

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ Hands-on project

Course Recognitions: Certificate of Completion

Recommended Next Course:
Any Networking Academy Career course, or an industry IoT training program

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programmable Infrastructure

Infrastructure Automation

DevNet Associate

Course Overview

This course introduces the methodologies and tools of modern software development, applied to the IT and Network operations. It covers a 360 view of the domain including microservices, testing, containers and DevOps, as well as securely automating infrastructures with Application Programming Interfaces (APIs).

Benefits

Gain practical, relevant, hands-on lab experience, including programming in Python, using GIT and common data formats (JSON, XML and YAML), deploying applications as containers, using Continuous Integration/Continuous Deployment (CI/CD) pipelines, and automating infrastructure using code.

Prepare for Careers

- ✓ Develop skills for entry-level software development and infrastructure automation jobs
- ✓ Prepare for DevNet Associate certification exam

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students and participants of coding bootcamps

Estimated Time to Completion: 70 hours

Recommended Preparation:
Object-oriented coding skills, equivalent to:
PCAP: Programming Essentials in Python
Fundamental skills of networking, equivalent to:
CCNA: Introduction to Networks

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules and 23 practice labs
- ✓ 5 Cisco Packet Tracer activities
- ✓ 6 videos, 8 quizzes, 8 module exams
- ✓ 1 final exam, 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course: CCNA, CCNP Enterprise, or CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** No (Uses Virtual Machines on the student's computer)
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified DevNet Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Experimenting with REST APIs using Webex Teams

Course Overview

This workshop introduces the basic competencies needed to create applications and automate tasks using REST APIs, the most popular architecture for software integration in IT.

Benefits

Learn the value of the REST APIs architecture, practice Python programming skills, and perform basic software integration and automation using real-world APIs on an enterprise collaboration platform (Webex Teams).

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-Year University students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 9 practice labs
- ✓ 13 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Insertion Points:
PCAP Programming Essentials in Python, IoT Fundamentals: Connecting Things

Other Insertion Points:
IT Essentials, CCNA: Introduction to Networks

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Network Programmability with Cisco APIC-EM

Course Overview

This workshop introduces the basic competencies to operate and automate management tasks on a controller-based network.

Benefits

Understand the value of network programmability. Use the Cisco DevNet Sandbox to learn how to interact with programmable devices using real-world Application Programming Interfaces (APIs) on Cisco APIC-EM programmable controllers.

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-year University students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming, CCNA: Switching, Routing, and Wireless Essentials (SRWE) or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 5 practice labs
- ✓ 13 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Insertion Points:
- After CCNA: SRWE
- With CCNA Security or CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Model-Driven Programmability

Course Overview

This workshop introduces students to device level programmability. By defining standardized device models and APIs, network device configuration and management tasks can be automated, making it easier to manage network devices at scale.

Benefits

Learn key model-driven programmability concepts: YANG to model networking devices, RESTCONF and NETCONF for device-level APIs, and Python scripting to programmatically retrieve and update device configurations.

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-year university students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming, CCNA: Switching, Routing, and Wireless Essentials (SRWE) or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 10 practice labs
- ✓ 10 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Insertion Points:
- After CCNA: SRWE
- With CCNA Security or CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Cybersecurity

Introduction to Cybersecurity

Course Overview

This course explores cyber trends, threats, and staying safe in cyberspace, and protecting personal and company data.

Benefits

Today's interconnected world makes everyone more susceptible to cyber-attacks. Learn how to protect your personal data and privacy online and in social media, and why more and more IT jobs require cybersecurity awareness and understanding.

Explore Opportunities in Technology

- ✓ Explore the world of cybersecurity and how it relates to YOU
- ✓ Develop your cybersecurity basics for a secure and safe digital life
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and 2-Year college students, general audience

Estimated Time to Completion: 15 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 modules and 7 practice labs
- ✓ Interactive activities & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: Cybersecurity Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Career Advice
Tips for getting started in your career

Cybersecurity Essentials

Course Overview

This course covers essential knowledge for all cybersecurity domains including information security, systems security, network security, ethics and laws, and defense and mitigation techniques used in protecting businesses

Benefits

The demand for security professionals continues to grow. Develop a foundational understanding of cybercrime, security principles, technologies, and procedures used to defend networks.

Explore Opportunities in Technology

- ✓ Build your cybersecurity foundation
- ✓ Take the next step in exploring the many career possibilities in cybersecurity
- ✓ See if you want to pursue job roles in networking or cybersecurity

Course Details

Target Audience: Secondary and 2-year college vocational students

Estimated Time to Completion: 30 hours

Prerequisites: Introduction to Cybersecurity

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 8 chapters and 12 practice labs
- ✓ 10 Cisco Packet Tracer activities
- ✓ 40+ interactive activities & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CyberOps Associate

Course Overview

This course introduces the core security concepts and skills needed to monitor, detect, analyze, and respond to cybercrime, cyberespionage, insider threats, advanced persistent threats, regulatory requirements, and other cybersecurity issues facing organizations.

Benefits

Gain practical, hands-on skills needed to maintain and ensure security operational readiness of secure networked systems.

Prepare for Careers

- ✓ Develop skills for entry-level security operations center (SOC) jobs
- ✓ Prepare for CyberOps Associate certification
- ✓ Pursue a career in cybersecurity operations, a rapidly-growing, exciting new area that spans all industries

Course Details

Target Audience: Students enrolled in technology degree programs at higher education institutions; IT professionals who wants to pursue a career in Security Operations

Estimated Time to Completion: 70 hours

Recommended Preparation: Introduction to Cybersecurity, Cybersecurity Essentials

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 28 chapters and 46+ practice labs
- ✓ 6 Cisco Packet Tracer activities
- ✓ 113 interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course: CCNA Security, IoT Security

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** No (Uses Virtual Machines on the student's computer)
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified CyberOps Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA Security

Course Overview

This course introduces the core security concepts and skills needed to troubleshoot and monitor computer networks and help ensure the integrity of devices and data.

Benefits

Gain practical, hands-on skills to design, implement, and manage network security systems and ensure their integrity.

Prepare for Careers

- ✓ Build expertise in network security and data protection
- ✓ Develop skills for entry-level network security specialist roles
- ✓ Gain industry in-demand skills aligned with the National Institute for Standards and Technology (NIST) Cybersecurity Framework

Course Details

Target Audience: 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: CCNA: Switching, Routing, and Wireless Essentials (or equivalent)

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 11 chapters and 16 practice labs
- ✓ 13 Cisco Packet Tracer activities
- ✓ 65+ interactive activities, quizzes, chapter exams, and skills assessments
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit

Recommended Next Course: CyberOps Associate, IoT Security

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Security

Course Overview

The explosive growth of connected IoT devices also increases the exposure to security threats. Learn to perform vulnerability and risk assessments, and research and recommend risk mitigation strategies for common security threats in IoT systems.

Benefits

Learn practical tools for evaluating security vulnerabilities, perform threat modeling, and recommend threat mitigation measures. Gain hands-on, transferable skills relevant across IoT and other network architectures.

Prepare for Careers

- ✓ Develop skills for entry-level roles in the rapidly growing IoT and security domains
- ✓ Increase awareness of emerging technologies in the IoT Security space, such as Blockchain

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-Year University students

Estimated Time to Completion: 50 hours

Prerequisites:
- IoT Fundamentals: Connecting Things
- Networking Essentials and Cybersecurity Essentials (or equivalent)

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 24 practice labs
- ✓ 5 Cisco Packet Tracer activities
- ✓ 50+ interactive activities, videos, & quizzes
- ✓ 1 hands-on capstone activity
- ✓ 1 IoT Security game with 10 missions
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
CCNA Security or CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Yes

Features the IoT Security Game!

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Additional Courses

Entrepreneurship

Course Overview

This course teaches business and financial skills, behaviors, and attitudes, to help students develop an entrepreneurial mindset. Students learn by completing a series of interactive case studies that present realistic scenarios.

Benefits

Supplement your technical expertise with with entrepreneurial thinking, business development, and financial management skills.

Explore Opportunities in Technology

- ✓ Explore how to think like an entrepreneur
- ✓ Expand your mindset and employability with skills complementary to IT expertise
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: General audience

Estimated Time to Completion: 15 hours

Recommended Preparation:
CCNA: Introduction to Networks

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 7 modules with interactive, online case studies

Course Recognitions: Certificate of Completion

Recommended Next Course:
Hackathon Playbook (Design Thinking)

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Practice

Hands-on tools & interactive experiences
to build skills, not just knowledge

Hands-On Practice

A key pillar of Networking Academy

- Motivate your students with exciting experiences that make learning very real
- Accelerate and optimize each student's path to career-ready skills
- Build student confidence: "I can do this!"
- Developed by learning scientists & subject-matter experts

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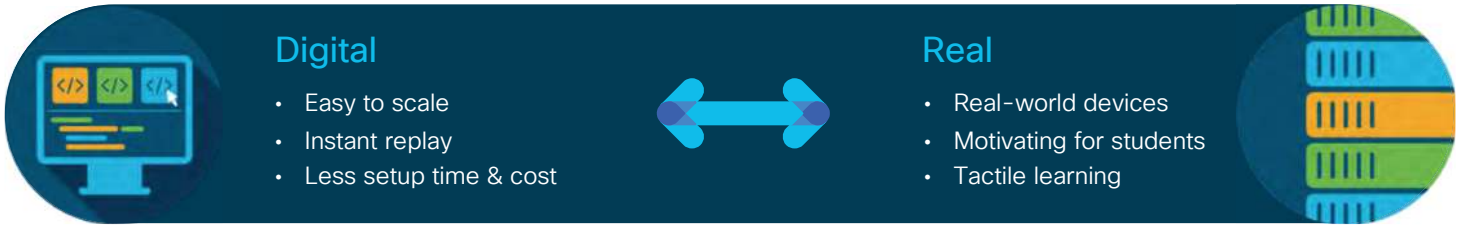
A Suite of Lab Environments

Options ranging from simulation to physical hardware



Simulation with Packet Tracer

Virtualized Equipment

Virtual Machines

Prototyping Lab

Remote Equipment

Physical Hardware

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Packet Tracer

Overview

Cisco Packet Tracer is a powerful simulation and visualization learning environment. Practice building simple and complex networks across a variety of devices and extend beyond routers and switches.

Benefits

Teach complex concepts without complex hardware. Leverage the versatility of simulation for lectures, labs, games, homework, assessments, and competitions.

Build Skills for Success

- ✓ Quickly try, experiment, learn, repeat
- ✓ Practice teamwork, critical thinking and creative problem solving skills
- ✓ Integration with online assessment engine prepares students for hands-on assessments

Details

Use it to:

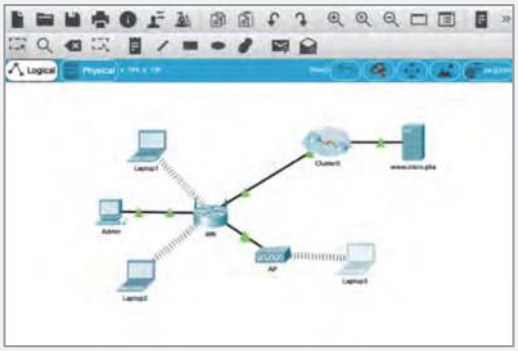
- Visualize networks using everyday examples
- Build your own simulated networks
- Investigate and troubleshoot network functionality using simulation mode
- Practice configuring network and IoT devices

How to Access:
Enroll in Intro to Packet Tracer course to download desktop version

Courses that use Packet Tracer include:

- Networking Essentials
- Cybersecurity Essentials
- IT Essentials
- Introduction to Internet of Things (IoT)
- CCNA
- CCNP Enterprise
- CCNA Security
- CyberOps Associate

Practice



Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Quick Links

Packet Tracer Landing Page

Introduction to Packet Tracer Course Page

Teaching with Packet Tracer

Introduction to Packet Tracer

Course Overview

The Introduction to Packet Tracer series is designed for new users of Packet Tracer for self-study and familiarization with the tool used in many Networking Academy courses. Packet Tracer courses are available for the desktop and for mobile (Android and iOS).

Benefits

The Introduction to Packet Tracer series introduces tips and best practices to help instructors and students use Cisco Packet Tracer as an effective and engaging learning and assessment tool.

Explore Opportunities in Technology

- ✓ Learn the power of simulation tools to build and investigate networks in software
- ✓ Get familiar using Cisco Packet Tracer, a key learning tool you will use in NetAcad courses

Course Details

Target Audience: General audience

Estimated Time to Completion: 10 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 8 chapters with instructional videos
- ✓ 13 Cisco Packet Tracer activities
- ✓ Sample files
- ✓ 2 quizzes

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: Networking Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Virtual Machines (VM)

Overview

Virtual machines are virtual environments that emulate a computer system. These self-contained virtual environments let students explore systems to the breaking point without causing actual damage.

Benefits

Experiment and explore in a low-risk environment. Deliberately test security threats and malware in a safe environment.

Build Skills for Success

- ✓ Hands-on cybersecurity practice
- ✓ Students become familiar with virtual machines to prepare for on-the-job skills

Details

Use it to:

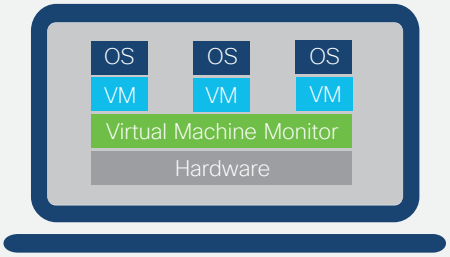
- Teach virtual machine technology
- Simulate real-world cybersecurity threat scenarios
- Create opportunities for ethical hacking, security monitoring, analysis, and resolution

How to Access:
Free software download from Oracle VirtualBox
https://www.oracle.com/virtualization/technologies/vm/downloads/virtualbox-downloads.html

Courses that use Virtual Machines include:

- CCNA
- CyberOps Associate
- Emerging Technologies Workshop: Model-Driven Programmability
- DevNet Associate

Practice



Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Prototyping Lab (PL App)

Overview

Dive into the world of sensors and connected things. The Prototyping Lab Kit uses a Raspberry Pi and Arduino setup to create an end-to-end IoT system on a lab table.

Benefits

Lab setup is easy with low-cost hardware and app download. Use real devices & code to collect, analyze, and present data from the physical world.

Build Skills for Success

- ✓ Spark entrepreneurial and systems thinking
- ✓ Students gain hands-on experience with an entire IoT system
- ✓ Build programming skills with Blockly visual programming or coding in Python

Details

Use it to:

- Acquire physical data with Arduino
- Collect and analyze data on Raspberry Pi
- Visualize data with Jupyter Notebook
- Connect to cloud applications with REST APIs

How to Access:

Prototyping Lab is comprised of the Prototyping Lab Kit (hardware) and Prototyping Lab App (software).

Find the hardware list and software download links on the Resources page: https://www.netacad.com/portal/resources/course-resources/cisco-prototyping-lab-resources

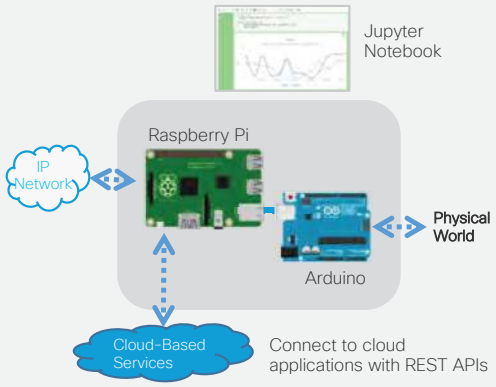
Courses that use Prototyping Lab include:

- IoT Fundamentals: Connecting Things
- IoT Fundamentals: Big Data & Analytics
- Hackathon Playbook (Design Thinking)
- IoT Security

Prototyping Lab Kit includes:

- Raspberry Pi 3 CanaKit Ultimate Starter Kit (or equivalent)
- Cables, sensors, and actuators
- SparkFun Inventor's Kit for Arduino v3.2 (or equivalent)
- Prototyping Lab App

Practice



Requirements & Resources

- **Cost:** Yes (for hardware); Free software download

Hands-on tools & interactive experiences to build skills, not just knowledge

Remote Equipment: NDG NETLAB+

Overview

Connect to real hardware through the web. Available through Networking Academy partnerships:

NDG NETLAB+ provides cloud-based, remote access to networking equipment and PCs.

Benefits

Reduce your setup time for complex labs with on-demand remote access to lab equipment when you need it.

Build Skills for Success

- ✓ Provide practice opportunities for students to complete labs from anywhere
- ✓ Supplement your lab offerings when physical hardware is not available at your institution

Details

Use it to:

- Access remote IT equipment through a web browser
- Reduce your lab setup time

How to Access:
Learn more at the NDG NETLAB+ page for Networking Academy.
https://www.netdevgroup.com/content/cnap/

Courses that use Remote Equipment include:

- CCNA
- CCNP Enterprise
- IT Essentials
- CyberOps Associate
- CCNA Security

Practice

In partnership with

NDG NETLAB+

Requirements & Resources

- **Cost:** Yes

Hands-on tools & interactive experiences to build skills, not just knowledge

Remote Equipment: DevNet Sandbox

Overview

Connect to real hardware through the web. Available through Networking Academy partnerships:

Cisco DevNet Sandbox offers packaged labs for software development, testing APIs, training, hackathons, and more.

Benefits

Reduce your setup time for complex labs with on-demand remote access to lab equipment when you need it.

Build Skills for Success

- ✓ Students get experience running their code against live network infrastructure
- ✓ Practice working in a sandbox environment just like on-the-job software developers

Details

Use it to:

- Interact with live network infrastructure and programmable devices using real-world Application Programming Interfaces (APIs)

How to Access:

Learn more at the Cisco DevNet Sandbox page https://developer.cisco.com/site/sandbox/

Courses that use Remote Equipment include:

- Workshop: Experimenting with REST APIs
- Workshop: Network Programmability
- Workshop: Model-Driven Programmability
- DevNet Associate

Practice

DEVNET DevNet Sandbox

Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Physical Hardware

Overview

Bring the real world inside the classroom so students can practice physical, sensory skills. Seeing and exploring with real equipment makes the abstract more tangible.

Benefits

Excite learners to consider career pathways in networking technology, and increase retention through tactile learning.

Build Skills for Success

- ✓ Provide hands-on practice with the same devices found in the work environment
- ✓ Students gain real experience even before on-the-job training
- ✓ Build transferable, career-ready skills

Details

How to Access:

1. Contact a local Cisco Reseller Partner for pricing and order fulfillment. Use Partner Finder to find one near you.
2. Consider working with an Academy Support Center (ASC) who can help you choose the best way to secure equipment needed for your location. They may offer loaner equipment or used equipment options

Courses that use Physical Hardware include:

- Networking Essentials
- IT Essentials
- CCNA
- CCNP Enterprise
- CCNA Security
- IoT Security

Requirements & Resources

- **Cost:** Yes

Discounts

Equipment discounts are available for Networking Academy institutions. Available for Cisco equipment needed for Networking Academy courses and labs when purchased through a Cisco Reseller Partner.

Hands-on tools & interactive experiences to build skills, not just knowledge

Language Availability

October 2020

Explore Course Languages

Explore	Arabic	Chinese-Simplified	Chinese-Traditional	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hindi	Hungarian	Indonesian	Italian	Japanese	Kazakh	Korean	Polish	Portuguese-Brazil	Portuguese-Portugal	Romanian	Russian	Spanish	Turkish	Ukrainian
Cybersecurity Essentials		✓				✓	✓		✓						✓				✓			✓	✓		✓
Entrepreneurship	✓	✓	✓			✓	✓			✓				✓					✓				✓		
Get Connected		✓	✓			✓	✓		✓		✓			✓					✓	✓			✓		
Introduction to Cybersecurity	✓	✓			✓	✓	✓		✓	✓			✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Introduction to IoT / Introduction to IoE	✓	✓	✓		✓	✓	✓		✓	✓				✓	✓	✓		✓	✓			✓	✓		✓
Introduction to Packet Tracer						✓																			✓
Networking Essentials 1.0	✓	✓				✓	✓		✓						✓				✓			✓	✓		
NDG Linux Unhatched						✓	✓		✓					✓									✓		

Career Course Languages

October 2020

Career	Arabic	Chinese-Simplified	Chinese-Traditional	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hindi	Hungarian	Indonesian	Italian	Japanese	Kazakh	Korean	Polish	Portuguese-Brazil	Portuguese-Portugal	Romanian	Russian	Spanish	Turkish	Ukrainian
CCNA Cybersecurity Operations		✓	✓			✓	✓								✓							✓	✓		
CCNA R&S: Connecting Networks	✓	✓		✓		✓	✓					✓			✓			✓	✓			✓	✓	✓	
CCNA R&S: Introduction to Networks	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓		✓	✓			✓	✓		✓	✓	✓	✓	
CCNA R&S: Routing and Switching Essentials	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓			✓			✓	✓		✓	✓	✓	✓	
CCNA R&S: Scaling Networks	✓	✓		✓		✓	✓					✓			✓			✓	✓			✓	✓	✓	
CCNA Security		✓				✓																✓			
CCNA: Enterprise Networking, Security, and Automation	✓	✓				✓	✓												✓			✓	✓		
CCNA: Introduction to Networks	✓	✓				✓	✓		✓									✓	✓			✓	✓		✓
CCNA: Switching, Routing, and Wireless Essentials	✓	✓				✓	✓												✓			✓	✓		
CCNP Enterprise: Advanced Routing						✓																			
CCNP Enterprise: Core Networking						✓																			
CyberOps Associate						✓																			
DevNet Associate						✓																			
Emerging Technologies Workshop - Experimenting with REST APIs using Webex Teams						✓																			
Emerging Technologies Workshop - Model Driven Programmability						✓																			
Emerging Technologies Workshop - Network Programmability with Cisco APIC-EM						✓																			
IoT Fundamentals: Big Data & Analytics		✓				✓	✓																✓		
IoT Fundamentals: Connecting Things		✓				✓	✓		✓														✓		✓
IoT Fundamentals: Hackathon Playbook						✓																	✓		✓
IoT Fundamentals: IoT Security		✓				✓																			
IT Essentials	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓		✓	✓		✓	✓	✓	✓	✓
Networking Essentials 2.0						✓																			
NDG Linux Essentials						✓																	✓		
PCAP - Programming Essentials in Python						✓												✓					✓		

October 2020

Complementary Offerings Languages

Complementary	Arabic	Chinese-S	Chinese-T	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hungarian	Italian	Japan.	Kazakh	Korean	Polish	Portuguese	Romanian	Russian	Spanish	Turkish	Ukrainian
NDG Linux I and II						✓																
CLA: Programming Essentials in C						✓																
CLP: Advanced Programming in C						✓																
CPA: Programming Essentials in C++						✓																
CPP: Advanced Programming in C++						✓																

Quick Links

- Networking Academy Website – netacad.com
- Networking Academy Program Overview
- Helpful Program Resources, including NetAcad Program FAQ
- Course Demos (available for select courses)
- Cisco Interactive Course Pathways
- Employment Opportunities (Talent Bridge)
- Remote Teaching & Learning – Tools and Tips

2016-17

Dept. of Civil Engineering

ORGANIZING COMMITTEE

CHIEF PATRON
Sri. P Ashok Gajapathi Raju, Chairman, MANSAS
Ms. P Aditi Gajapathi Raju, Member, Trust Board

PATRON
Dr. KVL Raju, Correspondent & Principal,M VGR

ADVISORY BODY
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Dr. Ch Purnachandra Rao, Dean (Accred. &Est)
Dr P Ranga Raju, Dean (Admin)
Dr P Sita Rama Raju, Dean (Quality Assurance)
Dr. R Ramesh, Dean (Research & Development)
Dr. K Rajeswara Rao, Dean (Civil Infrastructure)
Dr. DR Prasada Raju, Dean (Faculty Development)

CONVENOR
Dr. P Markandeya Raju, Professor & HoD

ORGANIZING SECRETARY
Dr. S Chandramouli, Professor

COORDINATOR
Mr. Kalyan AVS, Asst. Professor

FACULTY MEMBERS

Dr. Partheepan Ganesan
Sri. B Ramesh Raju
Mr. A Varaprasad
Mr. V Vinay
Dr. P Sudheer
Mr. BV Joga Rao
Mr. S Purushotham Rao
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Mr. RP Singh
Mr. B Ramu
Mr. TP Sreejani
Mr. SSB Sai Kumar
Mr. W Sai Deepak
Mrs. D Praseeda
Mr. G Rahul Reddy
Mr. BVSSR Bhaskar

Who can attend?

Civil Engineering UG students (2nd, 3rd and 4th Year)

How to apply?

Interested participants have to meet the concerned faculty on or before **01.07.2017**. Selected candidates will be intimated. Registration fees can be paid on the spot

Contact personnel

Dr. S Chandramouli, Professor
chandramoulis@mvgrce.edu.in
9052 722 221
Mr. Kalyan AVS, Assistant Professor
kalyanavs@mvgrce.edu.in
9966 119 507

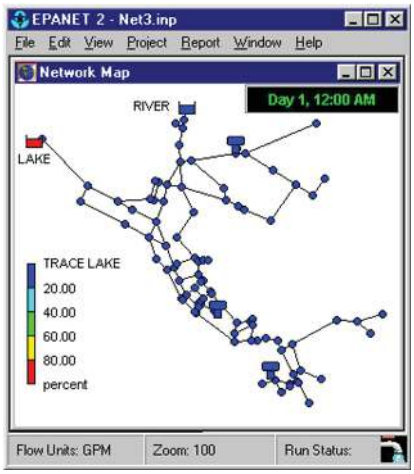
Important dates

Last date for submission of registration: **01.07.2017**

Intimation of selected candidates: **03.07.2017**

Add-on Course on

Hydraulic Analysis of Water Distribution Network using EPANET



Organized by

Department of Civil Engineering

MVGR College of Engineering (Autonomous)

Vizianagaram, Andhra Pradesh-535 005

www.mvgrce.com

Dept. of EEE

DEPARTMENT OF EEE

MVGR COLLEGE OF ENGINEERING (AUTONOMOUS)

(Listed Under 2(f), 12(b) Act of UGC)

(Permanently Affiliated to JNTU, Kakinada, and Approved by AICTE & NBA, New Delhi, Accredited with "A" grade by NAAC)

VIZIANAGARAM

Dt: 28-08-015

This is to inform all the students who have registered with PLC training program(SIEMENS) that the training program will be starting from first week of September 2015 as per the time table.

Co-ordinator

To Notice Board
& class executive

Head of the Department
Dept. of Electrical & Electronics Engg.
M.V.G.R. College of Engineering
CHINTALAVALASA
VIZIANAGARAM-535 005

DEPARTMENT OF EEE

MVGR COLLEGE OF ENGINEERING (AUTONOMOUS)

(Listed Under 2(f), 12(b) Act of UGC)

(Permanently Affiliated to JNTU, Kakinada, and Approved by AICTE & NBA, New Delhi, Accredited with "A" grade by NAAC)

VIZIANAGARAM

Dt: 20-08-015

Department is planning to conduct Add-on program on SIEMENS PLC from Sept 2015. Those who are interested can give their names to the coordinator, Mr. P. Sai Srinivas to finalise the schedule.

Co-ordinator

To Notice Board & class circuit

Head of the Department
Dept. of Electrical & Electronics Engg
M.V.G.R. College of Engineering
CHINTALAVALASA
VIZIANAGARAM-535 005

DEPARTMENT OF EEE
MVGR COLLEGE OF ENGINEERING (AUTONOMOUS)
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VIZIANAGARAM

Syllabus for Add – On course on SEIMENS PLC S1200

- What is a PLC?
- History of the PLC
- Parts of the PLC
- Fundamentals of PLC Programming
- Configuration
- Ladder Logic (LD)
- Function Block Diagram (FBD)
- Instruction List (IL)
- Structured Text (ST)
- Sequential Function Chart (SFC)
- Arithmetic Functions
- Logic Functions
- Timers and Counters
- Communication Instructions
- Data Transfer Instructions
- System Bits and Words
- Function Blocks
- Derived Function Blocks
- PID Function Blocks
- Configuration of Controller
- Configuration of Network Modules
- Configuration of Input Output Modules
- Structuring a program
- Creation of database
- Programmer's console
- Downloading / Uploading Projects
- PLC Modes (RUN, STANDBY, MONITOR)
- Simulation & Testing
- Loop tuning & Parameter setting
- On line Monitoring / debugging
- Diagnostic features

Head of the Department
Dept. of Electrical & Electronics Engg
M.V.G.R.College of Engineering(Autonomous)
Chintalavalasa,
VIZIANAGARAM-535 005

Some Programs identified to make students work

- Controlling Stepper Motor using PLC
- Controlling Motor from 3 different Position (1 ON & 2 OFF)
- Toggle functioning of two motors using timer
- Automatic switching of pair of motors.
- Single Conveyor with counter
- Water tank level control
- Security Alarm System Controlling
- Controlling Motor direction – Forward & Reverse
- Lift Control
- Traffic Signal Control

Head of the Department
Dept. of Electrical & Electronics Engg
M.V.G.R.College of Engineering(Autonomous)
Chintalavalasa,
VIZIANAGARAM-535 005

Dept. of Mechanical Engg

Achievements through SAEINDIA MVGRCE COLLEGIATE CLUB

The MVGRCE SAEINDIA Collegiate Club was established in the year 2011. The prime objective of the club is to bring together auto enthusiasts and make them aware of emerging technologies and latest trends in the field of Automotive Engineering.

- Student teams stood first in Aero-modeling, second in Modeling and Animation, second in Technical Paper Presentation and second in AUTO Quiz
- Student got opportunity to work as a design engineer in Renault Nissan, Chennai in the Year 2012.
- 9 students participated in the Tier 2 Events held at Vignan Institute of Technology and Science, Hyderabad.
- 7 students participated in student convection Tier 3 at K.S. Ranga Swami College of Technology, Tiruchungode, India.
- Team Terrain Tamers, The BAJA Team from our Collegiate Club participated in The Virtual BAJA 2013
- Participated in the SAE TREK organized at Erode.
- Team Invincible qualified in Virtual BAJA 2014 and manufactured vehicle for the final 'OFFROAD Vehicle Round in BAJA 2014

Courses Offered

Course	Duration (Hrs)	Faculty Team (Experience)
CREO(PRO-E)	120	Dr.S.Adinarayana - 14(Acad) + 1 (Ind) Dr. L.V.Venugopal Rao - 5 (Acad) + 4 (Ind) Dr. S.Srinivasa Rao - 9 (Acad) Sri. M.Kannam Naidu - 9 (Acad) Sri. Ajay Konapala - 5 (Acad) + 4 (Ind) Sri. S. Sanyasi Naidu - 3 (Acad) Sri.Ch.Varun - 3 (Acad) Sri. G.Satyanarayana - 3 (Acad)
Ansys	80	
Windchill-PDM Link	80	

ACHIVEMENTS

8 faculty members become PTC certified trainers after completion of their training.

160 students completed course on CREO/Pro-E and certified by PTC and they also completed course on ANSYS and certified by MVGR.

90 students completed course on Windchill PDM and certified by MVGR.

Certification course helped the first batch students (30) To get selected for TCS (20 members), Mahindra Satyam (1 members), Renault Nissan (1 member), Adroitec (2 members), Rolan Seals (1 member) before completion of their B.Tech Degree in various placement interviews. Couple of remaining students also got their jobs after completion of the course through off-campus interviews.

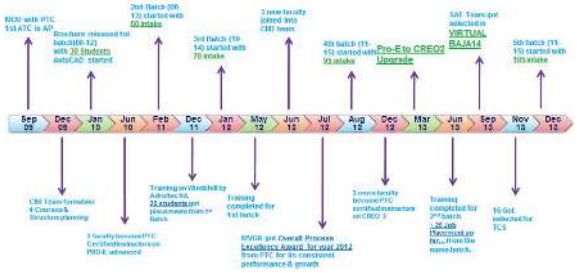
Helped the 2nd batch students (60) to get placed for TCS (11 members), Hyundai R&D Hyderabad (4 members), BOSCH (8 members), SWIFT-PLM (4 members), etc.

16 students from the 3rd batch (70) got placed in TCS and few more companies are yet to visit campus.

Training also helping students in choosing their specializations at Masters in India & Abroad.

MVGR has got OVERALL PROCESS EXCELLENCY award for the year 2012 among 88 PTC Authorized Training Centres across India during its annual ATC meet- LEAP conducted by PTC during July 2012, at GOA.

Activities so far...



MVGR College of Engineering

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Feb 2014

ANNUAL PROGRESS REPORT OF CENTER FOR INDUSTRY INTEGRATED DESIGN & DEVELOPMENT (CIID)

CIID@MVGR

An Authorized Training Center for PTC

VISION

Maharaj Vijayaram Gajapathi Raj (MVGR) College of Engineering strives to become a center par excellence for technical education where aspiring students can be transformed into skilled and well-rounded professionals with strong understanding of fundamentals, a flair for responsible innovation in engineering practical solutions applying the fundamentals, and confidence and poise to meet the challenges in their chosen professional spheres. .

Inside

MVGR College of Engg. P.1
Mechanical Engg Dept. P.2
CIID P.3
Achievements P.4

MVGR College of Engineering

Maharaj Vijayaram Gajapathi Raj (MVGR) College of Engineering was established in 1997 by MANSAS to impart quality technical education in Andhra Pradesh. MVGR College of Engineering is one of the 12 institutes of MANSAS and is located in lush green, serene and pollution free environment spread over 42.2 acres of land in Chintalavalasa situated in outskirts of Vizianagaram.

Faculty is the biggest strength of the college. It has engaged more than 200 full time committed teaching staff with most of them having highest academic qualification in their respective fields with more than 50 PhD holders to cater the needs of UG and PG students. Faculty members guide the students to harness their complete academic potential. The college regularly invites eminent professionals from industry and academia to share practical experience with the students and staff.

Regular compliance with norms has earned the college a Permanent Affiliation by Jawaharlal Nehru Technological University (JNTU), Kakinada. All eligible Departments which are more than seven years of age have been accredited by National Board of Accreditation (NBA) of All India Council for Technical Education (AICTE). The college commitment to process, quality and academic excellence has been rewarded by "Rated Grade-A" by the National Assessment and Accreditation Council (NAAC) of the University Grants Commission (UGC). The college is due to apply for a 'Deemed to be University' status by the UGC.

The college has moved forward from a humble beginning with 4 departments and 200 students in 1997 to a current regular intake of 774 students. It offers Bachelors Degree in Civil, Chemical, Computer Science, Electronics and Communication, Electrical & Electronics, Information Technology and Mechanical Engineering. It also offers Postgraduate courses in Engineering, Management and Computer Applications. The college has churned out many university rankers and gold medalists and its alumni are spread across the globe. Many alumni are holding key positions in Government, MNCs, Education & Research Facilities and Private sector of India.

Research and consultancy Initiatives

Sponsored Projects

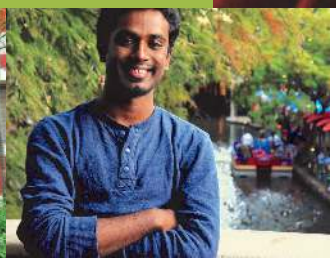
1.Project sanctioned by Science and Engineering Research Council (SERC) of the Department of Science and Technology (DST) for the development of an open-architecture controlled performance enhancement system for a machine tool. Centre for Intelligent Manufacturing Automation was established in 2011. Amount sanctioned: Rs. 38,72,000

2.Project for laboratory development sanctioned by AICTE under the MODROBS scheme for modernization of thermal engineering laboratory. AVL 444 5 – Exhaust Gas Analyzer, AVL 437C Smoke Meter, Exhaust Gas Recirculation setup for VCR Diesel Engine are installed and amount sanctioned: Rs. 7,80,000.

3.Project sanctioned by AICTE under the RPS scheme for research. VCR multi fuel engine, Variable injection kit, Vibration analysis software (LAB View) are installed and Amount sanctioned: Rs. 17,00,000

Consultancy

1. MOU with M/s Askar Microns, Mysore for research in the field of Machine Tools
2. MOU with Zeus Numerix, Pune for research in Computational Fluid Dynamics
3. Technical Cooperation with M/s MTAB Engineers Pvt. Ltd., Chennai to carry out research in the area of Mechatronics and Robotics
4. Entering into MOU with KUKA Robot, India for establishment of regional industrial robotics training centre as well as student add-on program in industrial robotics



The department of Mechanical Engineering was established in MVGR College of Engineering in the year 1997 with an annual intake of 60 students, which has been increased to 120 in the year 2009 and increased to 180 in the year 2011. Since its inception, the department is maintaining consistency in academic performance and it is sustained with its bagging "University Gold Medal" by its first batch student and possessing "University Second Rank" by two of its second batch students consequently.

The total investment in departmental facilities, primarily laboratories, stands at Rs. 2,64,05,455/-. The Department is located in total plinth area of 3308 sq m. The Department also has up to date computer facility with latest hardware to work with latest design, analysis and PDM softwares. Department has facility for faculty as well as students to work with CAD softwares like CREO, WindChill PDM Link, ANSYS, CATIA, IDEAS, Inventor series packages, ZNTutor and CFDExpert, EdgeCAM, AutoCAD etc.

Besides the state-of-art laboratories, the major strength of the department is its faculty members, who acquired qualifications from various reputed foreign and Indian institutes. Out of 35 permanent faculty 9 are Ph.D holders, 6 are in the final phase and another 8 registered for Ph.D recently at various universities.

The department is consistently striving towards flourishing its objective of imparting quality and value based education through adopting updated methods of teaching emulating the changing trends in the various fields of Mechanical Engineering.

Department also runs various other programs/activities like offering advanced technologies and trends to the students through its add-on-courses, Various Student Club activities like SAEINDIA MVGRCE COLLEGIATE CLUB, ROBOTICS CLUB, etc. and Student Development Center, Seminars by external resources, Training and Placement activities, National and International level paper presentations, Industry Visits, Industrial oriented programs etc. to develop Industry ready professionals.

In addition department is extending their activity towards research by doing real time projects. Department proved its strength by competing with many best institutes like IITs and NITs and stood one among them by achieving a substantial DST and MSME projects recently.

MVGR Mechanical Engineering Department has started Postgraduate program in MACHINE DESIGN with the intake of 18 students from the academic year 2004. The department has established all the laboratories required for PG program in Machine Design and is planning to start another postgraduate courses in CAD/CAM.

Centre for Industry Integrated Design & Development (CIID)

An Authorized Training Center for PTC

Passion Ignited By a Lifetime of Learning

'Centre for Industry Integrated Design & Development-(CIID)' is one of the top class advanced training program being conducted at MVGR since 2009, with a vision of providing advanced training and to make the students more employable. Under this, MVGR is offering training on advanced applications like CREO (formerly Pro-E), Ansys, Windchill-PDM (PDM application) for students of its own as well as outside.

As part of this program, MVGR tied up with PTC-India and became one of the PTC Authorized Training Centre in India and is the first ATC in the state of Andhra Pradesh. In addition to the training on PTC products, CIID also offering training on Analysis tools. Being the Authorized Training Centre, CIID provides training with high quality materials and infrastructure employed by PTC, to service their own students.

ATC's are held to strict standards in terms of instructors, materials and classroom facilities to ensure that Students will receive a consistent and high quality training experience.

A team of 8 well experienced faculty members are being imparted into the program for its success and the team is headed by Dr.S. Adinarayana, Professor & Head of the Dept, Mechanical Engineering.

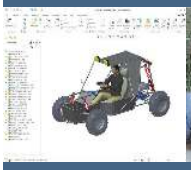
Faculty:
PTC Authorized & Certified Trainers (with mix of Academic & Industry experience)

Target Students:
2nd year B.Tech Mechanical Engineering students of MVGR COE
Mechanical, Automobile Diploma & Engineering Students from other

SAE BAJA 2014

MVGR college student team selected through 'Virtual BAJA 2014' an Intercollegiate design competition conducted by Society of Automotive Engineers (SAE) INDIA at Bangalore on 26th Jul 2013

MVGR become one among the 5 Engineering institutions in the entire Andhra Pradesh that got selected in the first level (design) of this event. They made vehical and going for the final 'OFFROAD Vehicle Round' conducted at Indore.



Principal's message

Current Industry Trends

With the increased competition and current Industry trends, both faculty and fresh engineering graduates are expected to be with additional skills and proficiency on latest technology and applications. CIID is started with the following Objectives to fill the industry institute gap in the area of Design & CAD/CAM.

Objectives of the Program

- → To build technology literacy, Improve critical thinking and strategic thinking skills which improve student confidence.
- → To improve skill levels of individuals on advanced CAD applications like CREO, ANSYS, Windchill-PDM Link and to make them industry ready.
- → To let the students work on various real time project works and to let them participate at various national/ international competitions
- → To interact with industry experts
- → To assist the students in getting placed in top class companies

About the Institution

Maharaj Vijayaram Gajapathi Raj College of Engineering, Vizianagaram was established in the year 1997, under aegis of MANSAS (Maharaj Alaknarayan Society of Arts & Science) an educational trust founded by Late Dr. P.V.G. Raju, Rajasaheb of Vizianagaram with an objective to pioneer the institutes of higher learning in north coastal Andhra. The college has well established laboratories with state-of-art equipment for all the courses of engineering. It also has highly qualified, experienced and committed faculty. The Institution is accredited by NAAC of UGC& NBA of AICTE and is permanently affiliated to JNTU, Kakinada.

Vision

Maharaj Vijayaram Gajapathi Raj College of Engineering strives to become a center par excellence for technical education where aspiring students can be transformed into skilled and well-rounded professionals with strong understanding of fundamentals, a flair for responsible innovation in engineering practical solutions applying the fundamentals, and confidence and poise to meet the challenges in their chosen professional spheres.

Mission

The management believes in imparting quality education in an atmosphere that motivates learning as a social obligation which we owe to the students, their parents/guardians and society at large and hence the effort is to leave no stone unturned in providing the same with all sincerity.

ABOUT MECHANICAL ENGINEERING DEPARTMENT

The department of Mechanical Engineering was established in MVGR College of Engineering in the year 1997 with an annual intake of 60 students, which has been increased to 120 from the academic year 2009-10. Since its inception, the department is maintaining consistency in academic performance beginning with its bagging "University Gold Medal" by its first batch student and possessing "University Second Rank" by two of its second batch students.

Besides the state-of-art laboratories, the major strength of the department is its faculty members, who acquired qualifications from various reputed foreign and Indian institutes. The department is consistently striving towards achieving its objective of imparting quality and value based education through adopting updated methods of teaching emulating the changing trends in the various fields of Mechanical Engineering. Department also runs various other programs/activities like offering advanced technologies and trends to the students through its Student Development Center, seminars by external resources, Training and Placement activities, National and International level paper presentations, Industry Visits, Industrial oriented programs etc. to develop Industry ready professionals. In addition department is extending their activity towards research by doing real time projects.

Department proved its strength by competing with many best institutes like IITs and NITs and stood one among them by securing grants from DST and MSME for execution of research projects. Out of 9 successful batches that have passed out from the department 300 students are working in reputed organizations and 60 members pursuing higher studies abroad and in India. MVGR MechE has started Postgraduate program in Machine Design with the intake of 18 students from the academic year 2004. The department has established all the laboratories required for UG & PG education with an investment of around 2 crores.

DEPARTMENT STRENGTHS

- Availability of highly qualified faculty members
- Motivated, committed and enthusiastic staff members
- Active encouragement of the management in the developmental activities
- Continuous upgrading of infrastructure facilities
- Availability of advanced research equipment
- Well equipped labs with modern equipments
- Located in a serene campus away from the city crowd

HUMAN RESOURCES

Faculty

Department possess well qualified faculty members with 8 PhD's. Faculty have a mixture of industrial and academic experience with an average experience of about 10 years. At present there are 4 Professors, 5 Associate Professors, 4 Senior Assistant Professor and 5 Assistant Professors

LABORATORY FACILITIES

The laboratories of the Mechanical Engineering Department are well equipped with sophisticated equipment as per JNTU and AICTE norms. The Department is located in a total plinth area of 3308 sq m. In addition to installing the necessary equipment, the Department has also and continues to invest in purchase of advanced equipment for the purpose of faculty research, industry-institute collaboration and for student projects. Such infrastructure has enabled the Department to rise to the level of taking up external sponsored projects. In addition, the Department has set up research lab to initiate research activities in the area of manufacturing and automation as well as expose students to the latest trends in manufacturing. A 3 axis CNC machine, 6 axis robot, FPT analyser, VCR Engine and image analyser provide ample scope for cutting edge research work. In addition the department is also equipped with 40 Pentium-D Dual Core systems with 17" TFT Monitors. The softwares available include AutoCAD, CATIA, ANSYS, ALG-NASTRAN, IDEAS, EDGECAM, Pro-Engineer & Windchill

Mechanics of Solids Lab

Fluid Mechanics Lab

Centre for Industry Integrated Development (CIID):

Introduction:

Center for Industry Integrated Development (CIID) was launched by the Department of Mechanical Engineering with an objective of improvising the student's excellence in various areas so that they can be best benefited out of the college. In the process of reaching its objective CIID made an MOU with Parametric Technology (India) Private Limited ("PTC") to become an Authorised Training Center (ATC) for Pro-E & Windchill and to provide 2 year training program for the students in order to get internationally valid certification. Along with the PTC offered PRO-E & Windchill, CIID schedules for training on additional CAD tools like AutoCAD & ANSYS. This makes the students industry ready and to improvise the chances of getting placed in the best organizations across world.

Objectives:

1. To fill the gap between industry & institution
2. To prepare industry ready professionals out of the institution
3. To channelize students in various fields of mechanical engineering
4. To improve confidence levels of the student with more practical exposure
5. To improve the entrepreneur skills based upon the students interest

About PTC:

Parametric Technology Corporation (PTC)(NASDAQ: PMTC) provides Product Lifecycle Management (PLM) engineering CAD/CAM software and content management and dynamic publishing solutions to more than 50,000 companies worldwide. PTC customers include companies in manufacturing, publishing, services, government and life sciences industries.

CIID sign up with PTC:

In the process of reaching the objectives & as a stepping stone CIID of Mechanical dept, MVGR college engineering signed an MOU (memorandum of understanding) with PTC on 14th Oct 2009 to set up a centre of excellence at the college to train students on Pro/Engineer and Windchill software.

Rohit Biddappa, Senior Marketing Manager of PTC, Dr K.V.L. Raju, Principal of MVGR College of Engineering & Mr P Sajith Mohan, Education Program Manager - India on the Occasion of signing for Memorandum Of Understanding on 14th Oct 2009.

About 2 years Program on CAD & PLM:

Current trend

With over 600 engineering colleges in one state alone (AP), a student graduating with a B.Tech degree (with even very high percentage) stands little chance of making an impact in the outside world. The graduates are joining in private institutions to learn & practice specialized tools in the related field they like to work & to expertise on it.

Need for Industry-ready graduates

Industries are facing problems with the untrained fresh graduates because of risk factors and training reasons. Industries are deficiently looking forward for well trained, skilled & competent fresh graduates who are 'Industry-ready' to eliminate their problems.

Centre for Industry Integrated Development (CIID):

Objective of the program

- To train the students on 4 softwares under different categories i.e AutoCAD, Pro-E, ANSYS & Windchill with respect to industry requirements
- To let the students work on various real time projects/works from the industries
- To Interact with industry experts
- To participate in various seminars either internal or external in relation to their training
- To mentor & students based upon their interests under these 4 categories
- To assist the students getting placed in top level companies

Benefits for Students

- Internationally valid scorecard/certification after successful completion of the course & evaluation
- Interaction with Industries and to work upon real time problems
- Build technology literacy
- Improve critical thinking and strategic thinking skills
- Increase student confidence
- Experience project-based problem solving
- Become familiar with advanced design processes
- Prepare for real-world careers in technology
- Interaction with Industry experts

Fees Structure

Total fees for this 2 year training program is 20,000 Rs & can be payable in 3 installments (10,000+5,000+5,000). First installment of 10,000 Rs need to be paid immediately.

Resourse persons

Well experienced & highly qualified faculty members are the resource persons and take care of various courses and trainings involved in the whole 2 year program. Resource persons qualification and their relevant experiences are as below.

S.No	Faculty Name	Qualification	Designation	Experience (Yrs)
1	Dr. S. Adinarayana	Ph.D from Andhra University, M.Tech, BE	Associate Prof	11 (Academic) + 1 (Industrial)
2	Dr.V.S.Venu Gopal	Ph.D from IIT-Madras, ME, B.E	Associate Prof	1.5 (Academic) + 3.5 (Industrial)
3	Sri M. Kannam Naidu	(Ph.D)(A.U), ME,B.E	Sr. Assistant Prof	5.5 (Academic)
4	Sri S. Srinivasa Rao	(Ph.D)(A.U), ME,B.E	Assistant Prof	5.5 (Academic)
5	Sri Ajay Konapala	M.E, B.E	Assistant Prof	1 (Academic) + 4 (Industrial)

Course Plan

S.No	Course	Hours Planned	Resourse persons
1	AutoCAD	100	Dr.S.Adinarayana Dr. V.S.Venugopal Rao Mr. M.Kannam Naidu Mr. S.Srinivasa Rao Mr. Ajay Konapala
2	Ansys	100	
3	PRO-E	120	
4	Windchill	120	

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Pro/Engineer:

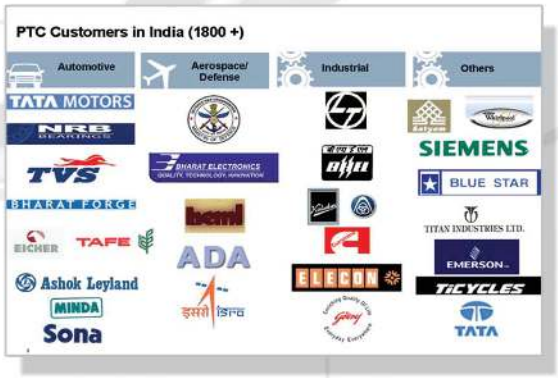
Customer requirements may change and time pressures may continue to mount, but your product design needs remain the same. Regardless of your project's scope, you need a powerful, easy-to-use, affordable solution.

Pro/ENGINEER, PTC's parametric, integrated 3D CAD/CAM/CAE solution, is used by discrete manufacturers for mechanical engineering, design and manufacturing.

Pro/ENGINEER is a parametric, integrated 3D CAD/CAM/CAE solution created by Parametric Technology Corporation (PTC). It was the first to market[2] with parametric, feature-based, associative solid modeling software on the market. The application runs on Microsoft Windows and Unix platforms, and provides solid modeling, assembly modelling and drafting, finite element analysis, and NC and tooling functionality for mechanical engineers.

Companies use Pro/ENGINEER to create a complete 3D digital model of their products. The models consist of 2D and 3D solid model data which can also be used downstream in finite element analysis, rapid prototyping, tooling design, and CNC manufacturing. All data is associative and interchangeable between the CAD, CAE and CAM modules without conversion. A product and its entire bill of materials (BOM) can be modeled accurately with fully associative engineering drawings, and revision control information. The associativity in Pro/ENGINEER enables users to make changes in the design at any time during the product development process and automatically update downstream deliverables. This capability enables concurrent engineering — design, analysis and manufacturing engineers working in parallel — and streamlines product development processes.

Pro/ENGINEER is an integral part of a broader product development system developed by PTC. It seamlessly connects to PTC's other solutions including Windchill, ProductView, Mathcad and Arbortext.



Course contents (Pro/E)

Module 01 —	Introduction to the Pro/ENGINEER Wildfire Basic Modeling Process
Module 02 —	Understanding Pro/ENGINEER Concepts
Module 03 —	Using the Pro/ENGINEER Interface
Module 04 —	Selecting and Editing
Module 05 —	Creating Sketcher Geometry
Module 06 —	Using Sketcher Tools
Module 07 —	Creating Sketches for Features
Module 08 —	Creating Datum Features: Planes and Axes
Module 09 —	Creating Extrudes, Revolves, and Ribs
Module 10 —	Utilizing Internal Sketches and Embedded Datums
Module 11 —	Creating Sweeps and Blends
Module 12 —	Creating Holes and Shells
Module 13 —	Creating Rounds and Chamfers
Module 14 —	Group, Copy, and Mirror Tools
Module 15 —	Creating Patterns
Module 16 —	Measuring and Inspecting Models
Module 17 —	Assembling with Constraints
Module 18 —	Exploding Assemblies
Module 19 —	Using Layers
Module 20 —	Investigating Parent/Child Relationships
Module 21 —	Capturing and Managing Design Intent
Module 22 —	Resolving Failures and Seeking Help
Module 23 —	Introduction to the Pro/ENGINEER Wildfire Sheetmetal Design Process
Module 24 —	Sheetmetal Model Fundamentals

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ANSYS

ANSYS, Inc. is an engineering simulation software provider founded by software engineerJohn Swanson. It develops general-purpose finite element analysis and computational fluid dynamics software. While ANSYS has developed a range of computer-aided engineering (CAE) products, it is perhaps best known for its ANSYS Mechanical and ANSYS Multiphysics products.

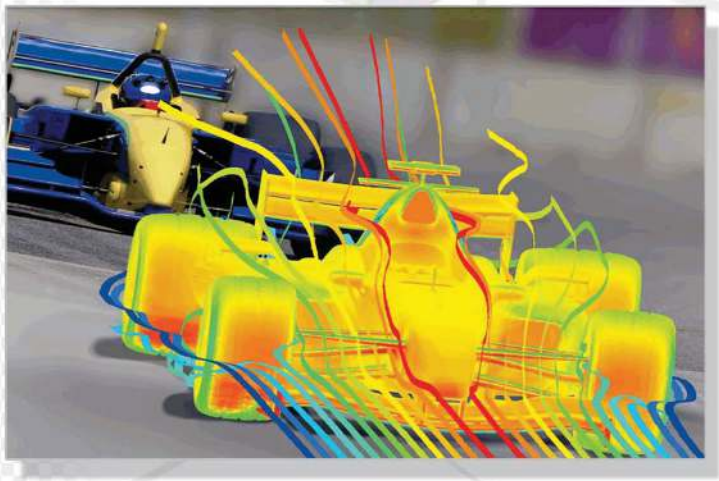
pre-processing (geometry creation, meshing), solver and post-processing modules in a graphical user interface. These are general-purpose finite element modeling packages for numerically solving mechanical problems, including static/dynamic structural analysis (both linear and non-linear), heat transfer and fluid problems, as well as acoustic and electro-magnetic problems.

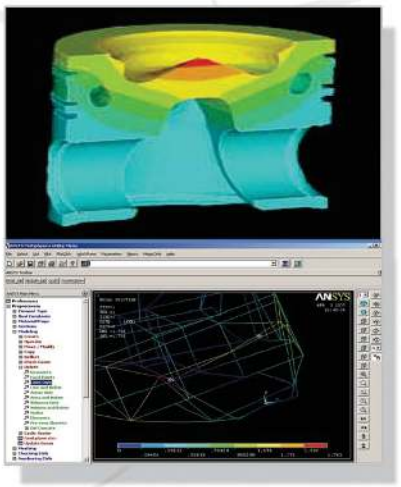
ANSYS Mechanical technology incorporates both structural and material non-linearities. ANSYS Multiphysics software includes solvers for thermal, structural, CFD, electromagnetics, and acoustics and can sometimes couple these separate physics together in order to address multidisciplinary applications. ANSYS software can also be used in civil engineering, electrical engineering, physics and chemistry.

ANSYS, Inc. acquired the CFX computational fluid dynamics code in 2003 and Fluent, Inc. in 2006. The CFD packages from ANSYS are used for engineering simulations. In 2008, ANSYS acquired Ansoft Corporation, a leading developer of high-performance electronic design automation (EDA) software, and added a suite of products designed to simulate high-performance electronics designs found in mobile communication and Internet devices, broadband networking components and systems, integrated circuits, printed circuit boards, and electromechanical systems. The acquisition allowed ANSYS to address the continuing convergence of the mechanical and electrical worlds across a whole range of industry sectors.

ANSYS is being used by following verticals

- Aerospace
- Automotive
- Built Environment & HVAC
- Chemical & Petrochemical
- Civil Engineering
- Consumer Products
- Electronics
- Environmental
- Government & Defense
- Healthcare
- Industrial Equipment
- Marine & Offshore
- Metals
- Oil & Gas
- Plastics and Rubber
- Power Generation
- Semiconductor
- Sport & Leisure
- Turbomachinery





Course contents (Ansys)

Course Description (ANSYS)

Theory of FEA
Exploring the GUI
Graphics picking
General analysis procedure
Solid modeling
Defining Work planes
Coordinate Systems
Importing geometry
Defining element attributes
Element types
Generating mesh
Free meshing
Mapped meshing
Defining material
Defining loads and boundary conditions
APDL basics
Select logic
Solvers
Post processing
Structural Static analysis
Modal analysis
Transient Dynamic analysis
Nonlinear analysis-Material Nonlinearity
Beam analysis
Thermal analysis
Coupled Field analysis
Project

Course Description

Introduction to Vibration
Free Vibration
Importance of Free Vibration in Design Consideration
Governing Equation for Free Vibration
Solving an example on Free Vibration using FEM
Understanding the usage of Command Mode in ANSYS
Understanding the problem and creating a Representative Finite Element Model
General Analysis Procedure
Interpret the results

Contact Information

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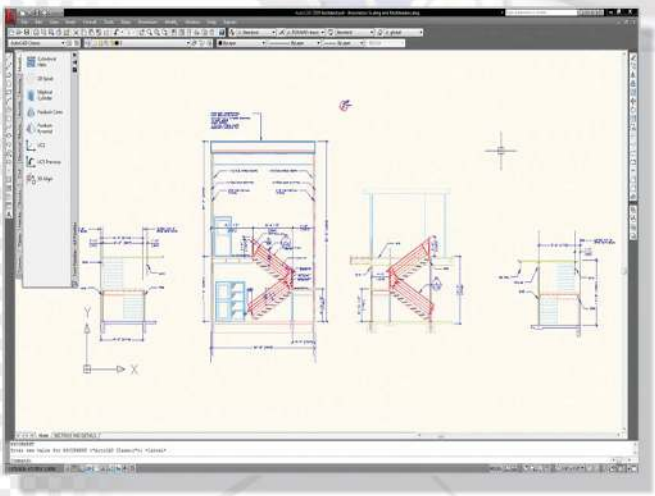
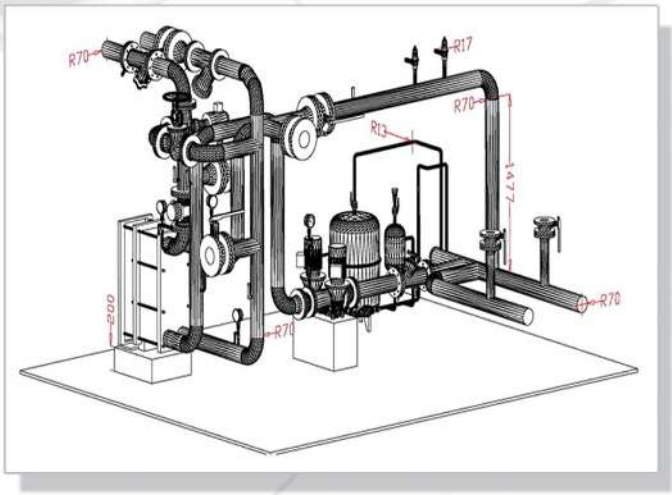
Course contents (Autocad)

AutoCAD is a CAD (Computer Aided Design or Computer Aided Drafting) software application for 2D and 3D design and drafting, developed and sold by Autodesk, Inc. Initially released in late 1982, AutoCAD was one of the first CAD programs to run on personal computers, and notably the IBM PC. Most CAD software at the time ran on graphics terminals connected to mainframe computers or mini-computers.

Autodesk, Inc. (NASDAQ: ADSK) is an American multinational corporation that focuses on 2D and 3D design software for use in architecture, engineering and building construction, manufacturing, and media and entertainment. Autodesk was founded in 1982 by John Walker, a coauthor of early versions of the company's flagship CAD software product AutoCAD, and twelve others. It is headquartered in San Rafael, California.





Course contents (Autocad)

About 2D Software

Explaining Graphical User Interface
Drawing simple sketches (Line, Arc, Circle, Ellipse, Polygon etc.)
Drawing settings
Modifying entities
Object selection methods
Settings and modifying entity properties
Creating and managing layers
Adding Annotations and Dimension to your drawing
Creating Text styles and Dimension styles
Creating Construction lines and Semi-infinite lines
Creating blocks and attributes
Working with Tables
Creating and viewing slides
Slide library
Running scripts
Creating compound documents with OLE
Electronic transmit
Plotting your drawings
Layout management
Exporting object

About 3D Software

3D modeling concepts in AutoCAD
Understand and use Viewpoint and Ucs
Viewports
Create wireframe models
Surface models
Solid models
Shading the model
Slice the 3D model
Create Sectional view

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Windchill - PDM/PLM Solution

Windchill is an integrated suite of Product Lifecycle Management applications from PTC. In late 2008, PTC announced that Windchill had over 600,000 active maintenance paying seats.

Production-proven content and process management software

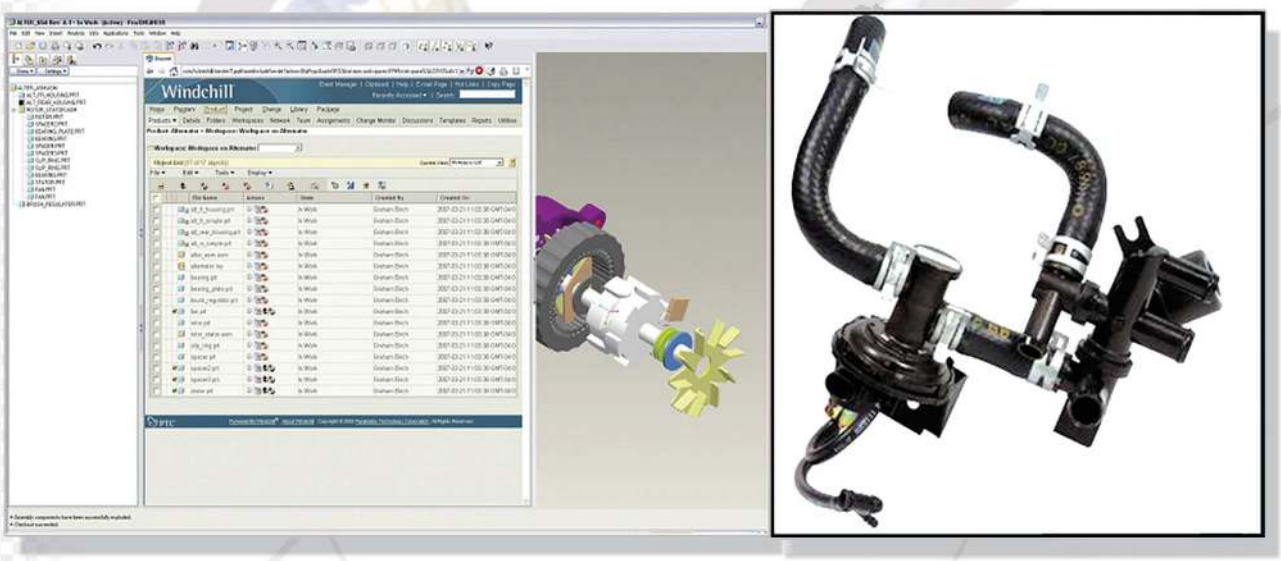
Whether you're a global conglomerate, a regional supplier, or a small service bureau, you face obstacles while trying to manage product content and development processes. Your company's success relies on having efficient business processes and effective development of complex information assets including product designs, service documentation, and regulatory submissions. Windchill, PTC's production-proven content and process management software, offers a solution. Fast, secure, and requiring only a Web browser to access, this business collaboration software enables companies to streamline product development processes and deliver superior physical goods and information products.

Features & Benefits

- Single source of product information/content enables development efficiencies, reduces errors and rework
- Complete product definition and collaboration capabilities expertly drive cross-enterprise understanding of information - regardless of source
- Repeatable, end-to-end process support and automation speeds time-to-market and reduces development cost
- Secure, industry-standard Internet architecture delivers a safe, high-performing technology platform

Windchill PDMLink – Manages and controls product information and processes through the product lifecycle.

Windchill is: Fast. Secure. Powerful. Scalable. Interoperable.



"Windchill PDMLink is a huge benefit to us by allowing us to access our system data anywhere, even at a customer assembly plant, and communicate changes to the entire team."
Cooper-Standard Automotive

Course contents (Windchill)

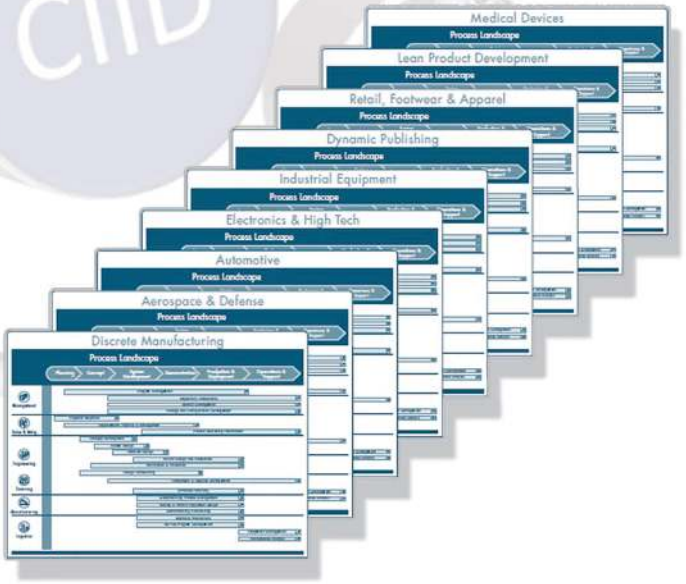
PLM Fundamentals

PDM concepts

- Storage and retrieval of product information
- business process flows
- change management
- Product structure modeling
- configurations
- variations
- versions
- revisions
- project tracking and resource planning
- Over vew of various PDM systems
- PLM Applications in various Industries
- (Apparel, Fashion, Automotive, High Tech ...)

PLM Administration

PLM Implementation



PTC has the knowledge and experience across multiple industries to help you imporve your key product development processes, end-to-end and across all organizations

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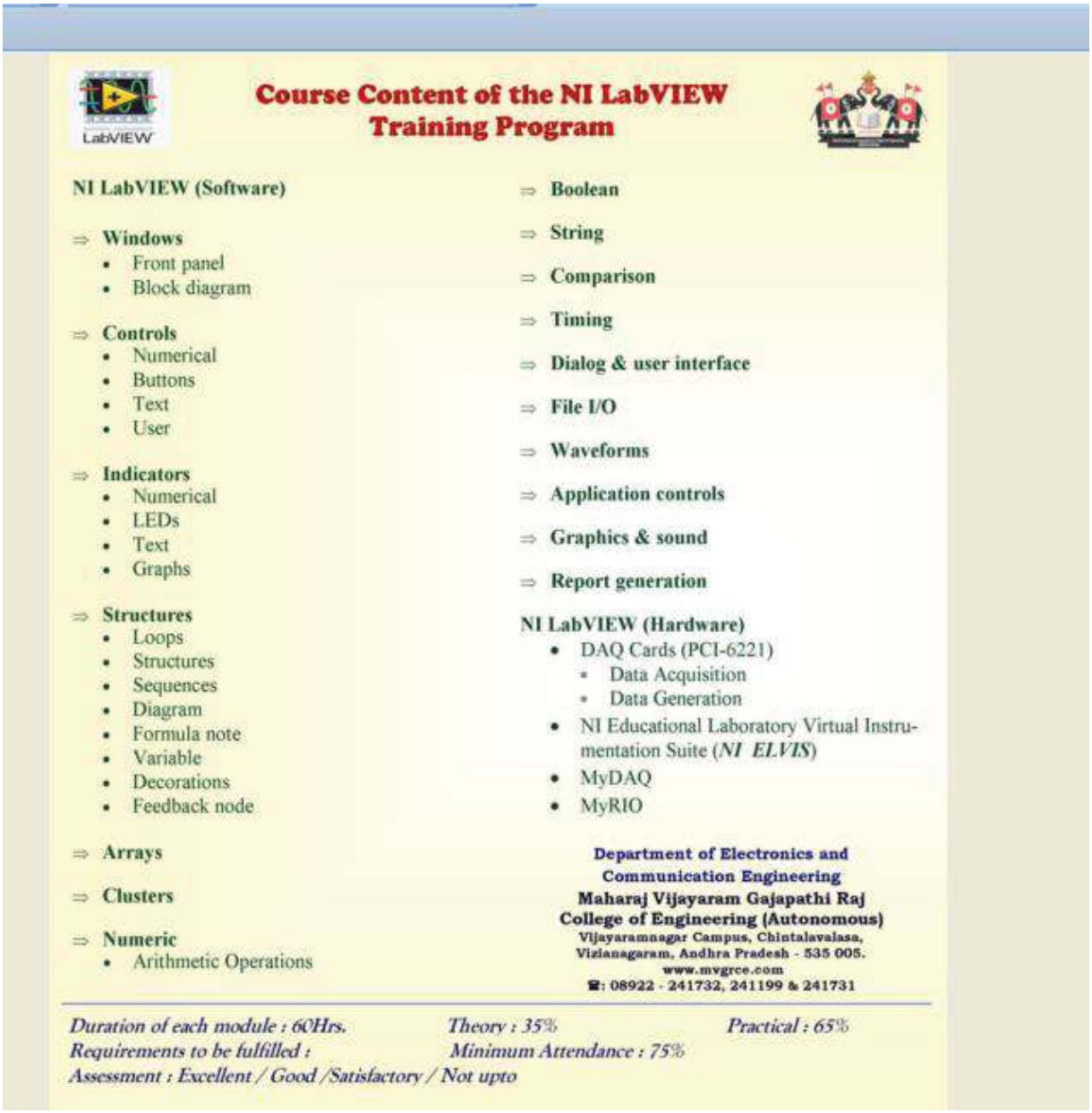
Dept. of ECE

List of value added courses

1. NI Lab View
2. Embedded Systems

Brochure of NI Lab View:



Course Content of the NI LabVIEW Training Program

NI LabVIEW (Software)

⇒ **Windows**
- Front panel
- Block diagram

⇒ **Controls**
- Numerical
- Buttons
- Text
- User

⇒ **Indicators**
- Numerical
- LEDs
- Text
- Graphs

⇒ **Structures**
- Loops
- Structures
- Sequences
- Diagram
- Formula note
- Variable
- Decorations
- Feedback node

⇒ **Arrays**

⇒ **Clusters**

⇒ **Numeric**
- Arithmetic Operations

⇒ **Boolean**

⇒ **String**

⇒ **Comparison**

⇒ **Timing**

⇒ **Dialog & user interface**

⇒ **File I/O**

⇒ **Waveforms**

⇒ **Application controls**

⇒ **Graphics & sound**

⇒ **Report generation**

NI LabVIEW (Hardware)
- DAQ Cards (PCI-6221)
  - Data Acquisition
  - Data Generation
- NI Educational Laboratory Virtual Instrumentation Suite (*NI ELVIS*)
- MyDAQ
- MyRIO

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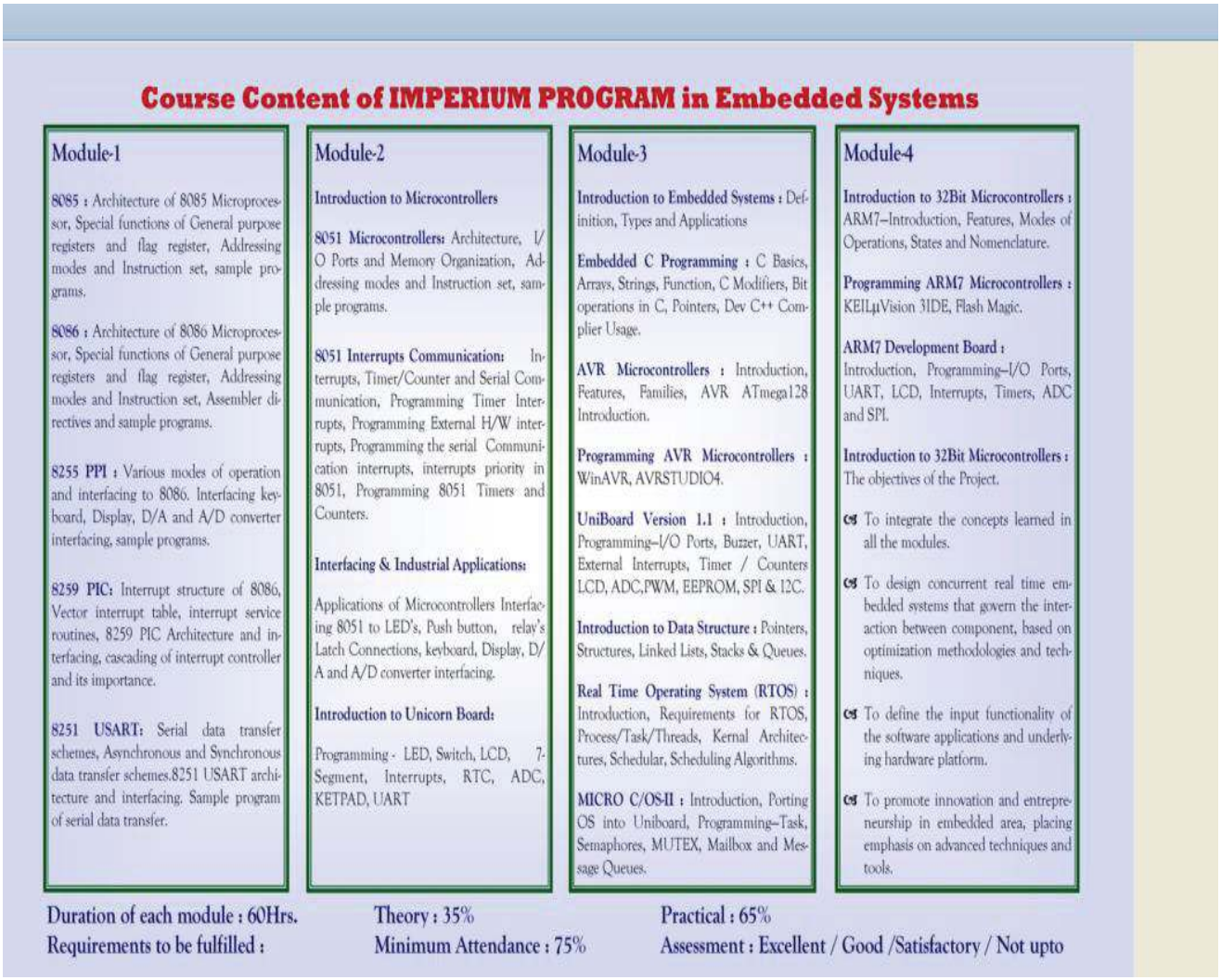
Maharaj Vijayaram Gajapathi Raj College of Engineering (Autonomous)
Vijayaramnagar Campus, Chintalavalasa, Vizianagaram, Andhra Pradesh - 535 005.
www.mvgrce.com
☎: 08922 - 241732, 241199 & 241731

Duration of each module : 60Hrs. *Theory : 35%* *Practical : 65%*
Requirements to be fulfilled : *Minimum Attendance : 75%*
Assessment : Excellent / Good /Satisfactory / Not upto

Brochure of Embedded Systems:



Course Content of IMPERIUM PROGRAM in Embedded Systems

Module-1

8085 : Architecture of 8085 Microprocessor, Special functions of General purpose registers and flag register, Addressing modes and Instruction set, sample programs.

8086 : Architecture of 8086 Microprocessor, Special functions of General purpose registers and flag register, Addressing modes and Instruction set, Assembler directives and sample programs.

8255 PPI : Various modes of operation and interfacing to 8086. Interfacing keyboard, Display, D/A and A/D converter interfacing, sample programs.

8259 PIC: Interrupt structure of 8086, Vector interrupt table, interrupt service routines, 8259 PIC Architecture and interfacing, cascading of interrupt controller and its importance.

8251 USART: Serial data transfer schemes, Asynchronous and Synchronous data transfer schemes.8251 USART architecture and interfacing. Sample program of serial data transfer.

Module-2

Introduction to Microcontrollers

8051 Microcontrollers: Architecture, I/O Ports and Memory Organization, Addressing modes and Instruction set, sample programs.

8051 Interrupts Communication: Interrupts, Timer/Counter and Serial Communication, Programming Timer Interrupts, Programming External H/W interrupts, Programming the serial Communication interrupts, interrupts priority in 8051, Programming 8051 Timers and Counters.

Interfacing & Industrial Applications:

Applications of Microcontrollers Interfacing 8051 to LED's, Push button, relay's Latch Connections, keyboard, Display, D/A and A/D converter interfacing.

Introduction to Unicorn Board:

Programming - LED, Switch, LCD, 7-Segment, Interrupts, RTC, ADC, KETPAD, UART

Module-3

Introduction to Embedded Systems : Definition, Types and Applications

Embedded C Programming : C Basics, Arrays, Strings, Function, C Modifiers, Bit operations in C, Pointers, Dev C++ Complier Usage.

AVR Microcontrollers : Introduction, Features, Families, AVR ATmega128 Introduction.

Programming AVR Microcontrollers : WinAVR, AVRSTUDIO4.

UniBoard Version 1.1 : Introduction, Programming–I/O Ports, Buzzer, UART, External Interrupts, Timer / Counters LCD, ADC,PWM, EEPROM, SPI & I2C.

Introduction to Data Structure : Pointers, Structures, Linked Lists, Stacks & Queues.

Real Time Operating System (RTOS) : Introduction, Requirements for RTOS, Process/Task/Threads, Kernal Architectures, Schedular, Scheduling Algorithms.

MICRO C/OS-II : Introduction, Porting OS into Uniboard, Programming–Task, Semaphores, MUTEX, Mailbox and Message Queues.

Module-4

Introduction to 32Bit Microcontrollers : ARM7–Introduction, Features, Modes of Operations, States and Nomenclature.

Programming ARM7 Microcontrollers : KEIL µVision 3IDE, Flash Magic.

ARM7 Development Board : Introduction, Programming–I/O Ports, UART, LCD, Interrupts, Timers, ADC and SPI.

Introduction to 32Bit Microcontrollers : The objectives of the Project.

- To integrate the concepts learned in all the modules.
- To design concurrent real time embedded systems that govern the interaction between component, based on optimization methodologies and techniques.
- To define the input functionality of the software applications and underlying hardware platform.
- To promote innovation and entrepreneurship in embedded area, placing emphasis on advanced techniques and tools.

Duration of each module : 60Hrs. Theory : 35% Practical : 65%

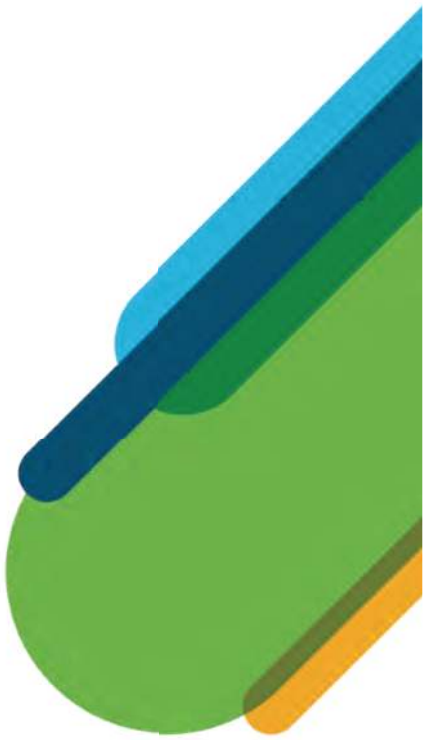
Requirements to be fulfilled : Minimum Attendance : 75% Assessment : Excellent / Good /Satisfactory / Not upto

Dept. of CSE

Networking Academy

Product Catalog

October 2020



Networking Academy

Prepare the workforce of the future

Leading-edge curriculum designed to educate students for jobs of today and tomorrow

Two Options for Course Modality

Instructor-Led

The majority of Networking Academy students take courses led by an instructor through an education institution in their local community.

Self-Paced

Online courses are self-paced and use the same curriculum taught in Networking Academy classrooms around the world.

Types of Course Offerings

Explore Courses

Easy starting points to explore opportunities in technology

- ✓ No prerequisites
- ✓ No cost
- ✓ Typically self–paced
- ✓ Between 8-30 hours

Career Courses

Equip students with real job skills for entry-level positions

- ✓ Aligned to industry-valued certifications
- ✓ Typically instructor-led and 70 hours of instruction time
- ✓ Integrated hands-on practice and interactive experiences

Complementary Offerings

Extend your teaching with courses from Networking Academy partners

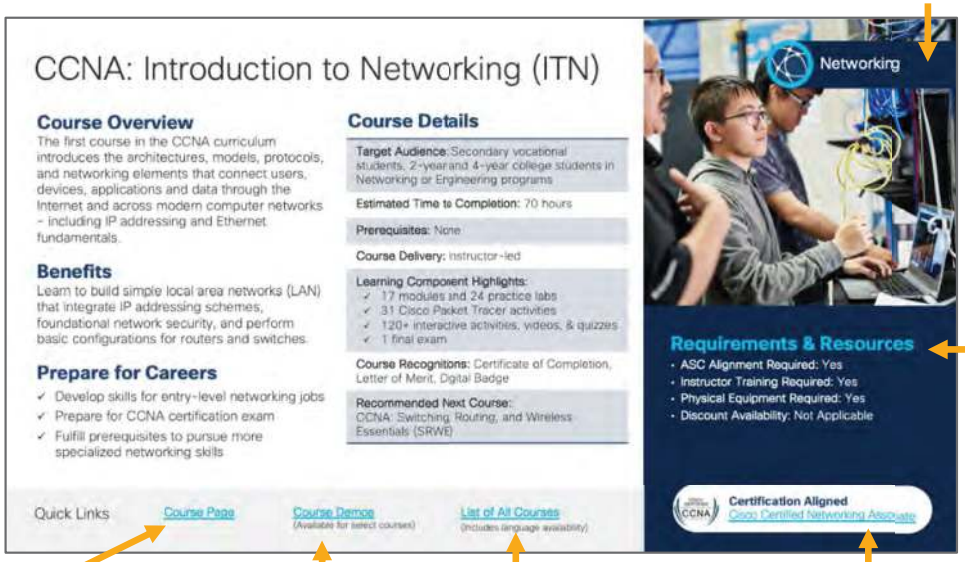
- ✓ Aligned to industry-valued certifications
- ✓ Some self-paced courses
- ✓ Some instructor-led courses for 70 hours of instruction time

Practice

Learning tools, hands-on labs, and interactive experiences are integrated into courses to build skills, not just knowledge

In This Catalog

Easy navigation by course category.



ASC Alignment Required: Due to the technical nature of some courses, Networking Academy may require that your institution receive support from an Academy Support Center (ASC).

Instructor Training Required: Some courses require accreditation or instructor training to ensure quality learning outcomes for your students.

Physical Equipment Required: Lab equipment may be required depending on the course.

Discount Availability: Discounts are available for select certification exams, for individuals meeting eligibility criteria.

Find the course page on NetAcad.com.

Course Demos are available for select courses to preview the content.

Explore the full Networking Academy course list online and filter by language. There is also a language summary matrix at the end of this catalog.

See which courses align with a certification, or get other tips about the course.

Networking Academy Curriculum Portfolio

October 2020

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Networking

Networking Essentials

Course Overview

Networking Essentials teaches networking based on environments students may encounter in daily life, including small office and home office networking. This course provides an engaging, self-paced learning experience using Packet Tracer simulation, interactive activities, and learning with your own devices at home.

Benefits

Develop a foundational understanding of the high-level network architecture and how a network operates.

Prepare for Careers

- ✓ For developers, cybersecurity, business analysts, or other professionals: gain essential networking knowledge
- ✓ For students: a launching point for many career pathways, from cybersecurity to software to business and more

Course Details

Target Audience: High school, secondary and 2-year college vocational students, college and university students studying IT and non-IT fields, career changers

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Self-Paced, Instructor-led

Learning Component Highlights:
- ✓ 20 modules and 19 practice labs
- ✓ 24 Cisco Packet Tracer activities
- ✓ 130+ interactive activities, videos, & quizzes
- ✓ 5 module exams
- ✓ 1 final exam and 1 skills assessment (Instructor-led only)

Course Recognitions: Certificate of Completion, Digital Badge (Instructor-led only)

Recommended Next Course:
CCNA: Introduction to Networks (ITN), Cybersecurity Essentials, or DevNet Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No (uses Packet Tracer and devices you already have at home)
- **Voucher Availability:** Not Applicable

Practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Introduction to Networking (ITN)

Course Overview

The first course in the CCNA curriculum introduces the architectures, models, protocols, and networking elements that connect users, devices, applications and data through the Internet and across modern computer networks – including IP addressing and Ethernet fundamentals.

Benefits

Learn to build simple local area networks (LAN) that integrate IP addressing schemes, foundational network security, and perform basic configurations for routers and switches.

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 17 modules and 24 practice labs
- ✓ 31 Cisco Packet Tracer activities
- ✓ 120+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNA: Switching, Routing, and Wireless Essentials (SRWE)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Switching, Routing, and Wireless Essentials (SRWE)

Course Overview

The second course in the CCNA curriculum focuses on switching technologies and router operations that support small-to-medium business networks and includes wireless local area networks (WLAN) and security concepts.

Benefits

Students learn key switching and routing concepts. They can perform basic network configuration and troubleshooting, identify and mitigate local area network (LAN) security threats, and configure and secure a basic WLAN.

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 16 modules and 14 practice labs
- ✓ 31 Cisco Packet Tracer activities
- ✓ 70+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNA: Enterprise Networking, Security, and Automation (ENSA)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Enterprise Networking, Security, and Automation (ENSA)

Course Overview

The final course in the CCNA series covers the architecture, security, and operation of an enterprise network, along with introducing the new ways in which network engineers interact with programmable infrastructure.

Benefits

Gain skills to configure and troubleshoot enterprise networks, learn to identify and protect against cybersecurity threats, and discover key concepts of software-defined networking, including controller-based architectures and application programming interfaces (APIs).

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 14 modules and 12 practice labs
- ✓ 29 Cisco Packet Tracer activities
- ✓ 100+ interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNP Enterprise: Core Networking (ENCOR)

Course Overview

This first course in the 2-course CCNP Enterprise series covers switching, routing, wireless, and related security topics, along with the technologies that support software-defined, programmable networks.

Benefits

Gain practical, hands-on experience and skills needed to configure, operate and troubleshoot large scale enterprise networks.

Prepare for Careers

- ✓ Develop skills for professional-level networking roles
- ✓ Prepare for the Cisco Enterprise Network Core Technologies exam (350-401 ENCOR) to earn an Enterprise Core Specialist certification
- ✓ Completion of both CCNP Enterprise courses prepares for CCNP Enterprise certification

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Recommended Preparation: CCNA or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 29 chapters and 41 practice labs
- ✓ 24 Cisco Packet Tracer activities (optional)
- ✓ 35+ interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNP Enterprise: Advance Routing (ENARSI)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Professional

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNP Enterprise: Advanced Routing (ENARSI)

Course Overview

This second of the 2-course CCNP Enterprise series focuses on implementation and troubleshooting of advanced routing and redistribution for OSPF, EIGRP and BGP along with VPN technologies, infrastructure security and management tools used in Enterprise networks.

Benefits

Gain practical, hands-on experience and skills needed to configure, operate and troubleshoot large scale enterprise networks.

Prepare for Careers

- ✓ Develop skills for professional-level networking roles
- ✓ Prepare for Cisco Enterprise Advanced Routing & Services exam (300-410 ENARSI) to earn a CCNP Specialist certification
- ✓ Completion of both CCNP Enterprise courses prepares for CCNP Enterprise certification

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Recommended Preparation: ENCOR or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 23 chapters and 40 practice labs
- ✓ 20 Cisco Packet Tracer activities (optional)
- ✓ 25+ videos & quizzes, 2 Skills Assessments
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
Broaden your skills with DevNet Associate, CyberOps Associate, Python, or Emerging Technologies Workshops

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Professional

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Operating Systems & Information Technology

Get Connected

Course Overview

Get Connected students are introduced to the Internet and experiment with various social networking sites. Talking characters and devices make this course a user-friendly environment for an audience new to Information Technology (IT).

Benefits

The digital world is upon us both personally and professionally. Gain essential skills like basic computer skills, such as how to use a computer, connect devices, and access search, email, and social media.

Explore Opportunities in Technology

- ✓ Develop your digital basics
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and general audience new to IT

Estimated Time to Completion: 30 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 chapters
- ✓ Illustrations and narrations guide students through topics
- ✓ Interactive activities, videos, & quizzes

Course Recognitions: Certificate of Completion

Recommended Next Course:
IT Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IT Essentials

Course Overview

IT Essentials covers fundamental computer and career skills for entry-level IT jobs. Students apply skills and procedures to install, configure, and troubleshoot computers, mobile devices, and software.

Benefits

Learn the fundamentals of connecting computers to networks. Plus, you'll enjoy working with Cisco Networking Academy's advanced simulation tools with hands-on labs to hone your troubleshooting skills and immediately practice what you learn!

Prepare for Careers

- ✓ Develop skills for entry-level technical support roles
- ✓ Prepare for CompTIA A+ certification exam
- ✓ Build your foundation for CCNA-level courses

Course Details

Target Audience: Secondary and 2-year college vocational students

Estimated Time to Completion: 70 hours

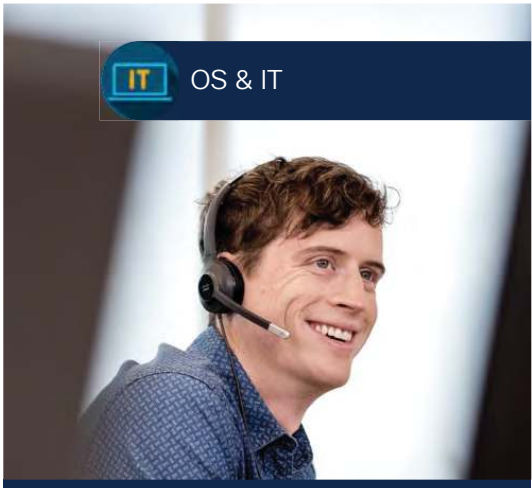
Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 14 chapters and 99 practice labs
- ✓ Cisco Packet Tracer, virtual laptop, and virtual desktop learning tools
- ✓ 29+ interactive activities
- ✓ 18+ assessments throughout the course
- ✓ 1 final and 2 practice certification exams

Course Recognitions: Certificate of Completion, Digital Badge, Letter of Merit

Recommended Next Course:
CCNA: Introduction to Networking (ITN)



Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
CompTIA A+ Certification

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux Unhatched

Course Overview

This course covers introductory back-end operating system knowledge by teaching basic installation and configuration of Linux and introducing the Linux command line.

Benefits

Learners ease into acquiring Linux knowledge without having to commit to more than 8 total hours of self-paced learning, guided step-by-step with a series of hands-on virtual machine activities.

Explore Opportunities in Technology

- ✓ Wade into the shallow end of Linux and see whether it's for you or not
- ✓ Develop your digital basics
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and general audience new to IT

Estimated Time to Completion: 6-8 hours

Prerequisites: None

Course Delivery: Self-paced

Learning Component Highlights:
- ✓ 1 module
- ✓ 20 pages
- ✓ Built-in Linux machine with activities
- ✓ 1 assessment

Course Recognitions: Letter of Completion

Recommended Next Course:
NDG Linux Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux Essentials

Course Overview

This course teaches fundamentals of the Linux operating system, command line, and open source programming concepts.

Benefits

Nearly every IT job requires some Linux knowledge. Gain hands-on practice with Linux commands through the Linux virtual machine embedded in the course.

Prepare for Careers

- ✓ Develop fundamental operating system skills for entry-level IT jobs
- ✓ Prepare for LPI certificate exam
- ✓ Fulfill prerequisites to pursue more specialized IT and networking skills

Course Details

Target Audience: Secondary and 2-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 16 chapters and 13 practice labs
- ✓ Built-in virtual machine to experiment with Linux commands
- ✓ Learner-directed activities
- ✓ Chapter, midterm, and final exams

Course Recognitions: Letter of Completion

Recommended Next Course:
NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
Linux Professional Institute (LPI) Linux Essentials Professional Development Certificate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux I and II

Course Overview

A 2-course series for aspiring Linux system administrators. Covers performing maintenance tasks on the command line, installing and configuring a computer running Linux, and configuring basic networking, using virtual machines running Linux.

Benefits

More rigorous and comprehensive than NDG Linux Essentials, this course develops your Linux mastery. Gain hands-on practice with Linux commands through the Linux virtual machine embedded in the course

Prepare for Careers

- ✓ Develop skills for careers in cloud computing, cybersecurity, information systems, networking, programming, software development, big data, and more
- ✓ Prepare for LPIC-1 certification exams

Course Details

Target Audience: 2-year and 4-year college students

Estimated Time to Completion: 140 hours

Recommended Preparation: NDG Linux Essentials or equivalent

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ Built-in virtual machine to experiment with Linux commands
- ✓ Practice labs and activities
- ✓ Chapter, midterm, and final exams

Course Recognitions: Letter of Completion

Recommended Next Course:
DevNet Associate

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required: No**
- **Discount Availability:** Yes
- **Cost:** Fee for self-paced classes. Cost for instructor-led classes is determined by the institution.

Certification Aligned
Linux Professional Institute LPIC-1

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programming

PCAP: Programming Essentials in Python

Course Overview

Designed as easy to understand and beginner-friendly course focusing on various data collections, manipulation tools, logic and bit operations and creating basic REST APIs.

Benefits

Learn to design, write, debug, and run programs encoded in the Python language. No prior programming knowledge is required. The course begins with the very basics guiding you step by step until you become adept at solving more complex problems.

Prepare for Careers

- ✓ Develop fundamental programming skills
- ✓ Prepare for PCEP and PCAP certification exam
- ✓ Build your foundation to pursue more specialized networking and software development skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 60-70 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 modules of interactive instructional content
- ✓ 30+ practice labs
- ✓ Built-in online tool for labs and practice
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
DevNet Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
PCEP: Certified Entry-Level Python Programmer
PCAP: Certified Associate in Python Programming

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CLA: Programming Essentials in C

Course Overview

This beginner course introduces the the universal concepts of computer programming using the C language, and teaches the syntax, semantics, and data types of the C language.

Benefits

Build transferable skills. When you learn C, you develop overarching fundamentals for all programming languages. Practice your skills through hands-on labs and write your own programs!

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CLA certification exam
- ✓ Fulfill prerequisites to pursue more advanced programming skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 9 modules of interactive instructional content
- ✓ 80+ practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, CCNA, NDG Linux Essentials

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CLA: C Programming Language Certified Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CLP: Advanced Programming in C

Course Overview

This advanced course teaches intermediate to advanced coding such as C handling variable number of parameters (<stdarg.h>), low level IO (<unistd.h>), memory and strings (<string.h> et al.), processes and threads, floats and ints (<math.h>, <fenv.h>, <inttypes.h> et al), and network sockets.

Benefits

Extend your programming knowledge and proficiency. Learn to think harder and deeper about programming concepts.

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CLP certification exam
- ✓ Set yourself up to succeed in jobs related to software development, network engineering, and system administration

Course Details

Target Audience: 2-year and 4-year college and university students

Estimated Time to Completion: 70 hours

Prerequisites: CLA: Programming Essentials in C course, CLA certification, or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules of interactive instructional content
- ✓ 18 practice labs
- ✓ Quizzes, chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CLP: C Certified Professional Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CPA: Programming Essentials in C++

Course Overview

This beginner course introduces the basics of programming in the C++ language and the fundamental notions and techniques used in object-oriented programming.

Benefits

Build transferable skills. When you learn C, you develop overarching fundamentals for all programming languages. Practice your skills through hands-on labs and write your own programs!

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CPA certification exam
- ✓ Fulfill prerequisites to pursue more advanced programming skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules of interactive instructional content
- ✓ 100+ practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, NDG Linux Essentials, DevNet Associate

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CPA: C++ Certified Associate Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CPP: Advanced Programming in C++

Course Overview

This advanced course teaches intermediate to advanced coding such as C++ template mechanism, understanding and using property template classes and methods, and the C++ STL library including solving common programming problems and the IO part.

Benefits

Extend your programming knowledge and proficiency. Learn to think harder and deeper about programming concepts.

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CPP certification exam
- ✓ Set yourself up to succeed in jobs related to software development, network engineering, and system administration

Course Details

Target Audience: 2-year and 4-year college and university students

Estimated Time to Completion: 70 hours

Prerequisites: CPA: Programming Essentials in C++ course, CPA certification, or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 9 modules of interactive instructional content
- ✓ 65 practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
CCNP Enterprise, NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Certification Aligned
CPP: C++ Certified Professional Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programmable Infrastructure

Internet of Things

Introduction to Internet of Things (IoT)

Course Overview

An introduction to the Internet of Things and how it enables Digital Transformation along with emerging technologies such as data analytics, artificial intelligence, and cybersecurity.

The course also highlights the importance of Intent-Based Networking using a software-driven approach and machine learning to be able to connect and secure tens of billions of new devices with ease.

Benefits

Gain a comprehensive view of how emerging technologies are shaping the digital business.

Explore Opportunities in Technology

- ✓ Develop your digital basics
- ✓ Explore the career opportunities in this new emerging technologies landscape

Course Details

Target Audience: Secondary, vocational, 2-year college, and general audience

Estimated Time to Completion: 20 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 6 chapters
- ✓ 17 practice labs (plus 4 optional labs)
- ✓ 7 Cisco Packet Tracer activities
- ✓ 40+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Insertion Points:
A great start for any learning path, and way to introduce the digital transformation before or during any Career course

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
  (Optional labs require additional hardware)
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Fundamentals: Connecting Things

Course Overview

This highly hands-on course introduces how to securely interconnect sensors, actuators, microcontrollers, single-board computers, and cloud services over Internet Protocol (IP) networks to create an end-to-end IoT system.

Benefits

Develop the interdisciplinary skillset required to prototype an IoT solution for a specific business case with a strong focus on the security considerations for emerging technologies.

Prepare for Careers

- ✓ Develop an entrepreneurial and design-thinking foundation for IoT job families that exist today and in the future
- ✓ Practice integrating hardware, software, data analytics, and security concepts
- ✓ Build your foundation to pursue more specialized networking, software development, and IoT skills

Course Details

Target Audience: Secondary, vocational, 2-year and 4-year college, 4-year university students

Estimated Time to Completion: 40-50 hours

Prerequisites: Basic programming, networking, and electronics

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 35 practice labs
- ✓ 9 Cisco Packet Tracer activities
- ✓ 32+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
IoT Fundamentals: Big Data & Analytics or Hackathon Playbook (Design Thinking)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Fundamentals: Big Data & Analytics

Course Overview

This highly hands-on course introduces how to use Python data libraries to create a pipeline to acquire, transform and visualize data collected from IoT sensors and machines.

Benefits

The transformative element of any IoT system is the data that can be collected from it. The ability to extract data and using data analytics techniques to gain insights are skills highly-valued by employers.

Prepare for Careers

- ✓ Develop entrepreneurial and design-thinking skills for IoT job families that exist today and in the future
- ✓ Practice integrating hardware, software, data analytics, and security concepts
- ✓ Build your foundation to pursue more specialized networking, software development, and IoT skills

Course Details

Target Audience: 2-year and 4-year college, 4-year university students

Estimated Time to Completion: 40-50 hours

Prerequisites: IoT Fundamentals: Connecting Things

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 11 practice labs
- ✓ 18 Jupyter Notebooks (with Python code)
- ✓ 35+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
IoT Fundamentals: Hackathon Playbook

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Hackathon Playbook (Design Thinking)

Course Overview

The Hackathon Playbook is a comprehensive framework of tools and templates to prepare and run a Hackathon as a result of best practices and lessons-learned collected from the global execution of IoT Hackathons within Networking Academy and by other organizers.

Benefits

Practice design thinking through a hands-on project. Deepen your multidisciplinary IoT and data skills by defining, designing, prototyping, and presenting an IoT solution to a panel of industry experts and peers.

Prepare for Careers

- ✓ Build a design thinking mindset
- ✓ Gain resume-worthy experience working on a real prototype
- ✓ Get feedback and mentorship from industry experts

Course Details

Target Audience: Secondary, vocational, 2-year and 4-year college, 4-Year university students

Estimated Time to Completion: 20-30 hours

Prerequisites: IoT Fundamentals: Connecting Things and/or Big Data and Analytics

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ Hands-on project

Course Recognitions: Certificate of Completion

Recommended Next Course:
Any Networking Academy Career course, or an industry IoT training program

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programmable Infrastructure

Infrastructure Automation

DevNet Associate

Course Overview

This course introduces the methodologies and tools of modern software development, applied to the IT and Network operations. It covers a 360 view of the domain including microservices, testing, containers and DevOps, as well as securely automating infrastructures with Application Programming Interfaces (APIs).

Benefits

Gain practical, relevant, hands-on lab experience, including programming in Python, using GIT and common data formats (JSON, XML and YAML), deploying applications as containers, using Continuous Integration/Continuous Deployment (CI/CD) pipelines, and automating infrastructure using code.

Prepare for Careers

- ✓ Develop skills for entry-level software development and infrastructure automation jobs
- ✓ Prepare for DevNet Associate certification exam

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students and participants of coding bootcamps

Estimated Time to Completion: 70 hours

Recommended Preparation:
Object-oriented coding skills, equivalent to:
PCAP: Programming Essentials in Python
Fundamental skills of networking, equivalent to:
CCNA: Introduction to Networks

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules and 23 practice labs
- ✓ 5 Cisco Packet Tracer activities
- ✓ 6 videos, 8 quizzes, 8 module exams
- ✓ 1 final exam, 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course: CCNA, CCNP Enterprise, or CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** No (Uses Virtual Machines on the student's computer)
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified DevNet Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Experimenting with REST APIs using Webex Teams

Course Overview

This workshop introduces the basic competencies needed to create applications and automate tasks using REST APIs, the most popular architecture for software integration in IT.

Benefits

Learn the value of the REST APIs architecture, practice Python programming skills, and perform basic software integration and automation using real-world APIs on an enterprise collaboration platform (Webex Teams).

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-Year University students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 9 practice labs
- ✓ 13 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Insertion Points:
PCAP Programming Essentials in Python, IoT Fundamentals: Connecting Things

Other Insertion Points:
IT Essentials, CCNA: Introduction to Networks

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Network Programmability with Cisco APIC-EM

Course Overview

This workshop introduces the basic competencies to operate and automate management tasks on a controller-based network.

Benefits

Understand the value of network programmability. Use the Cisco DevNet Sandbox to learn how to interact with programmable devices using real-world Application Programming Interfaces (APIs) on Cisco APIC-EM programmable controllers.

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-year University students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming, CCNA: Switching, Routing, and Wireless Essentials (SRWE) or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 5 practice labs
- ✓ 13 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Insertion Points:
- After CCNA: SRWE
- With CCNA Security or CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Model-Driven Programmability

Course Overview

This workshop introduces students to device level programmability. By defining standardized device models and APIs, network device configuration and management tasks can be automated, making it easier to manage network devices at scale.

Benefits

Learn key model-driven programmability concepts: YANG to model networking devices, RESTCONF and NETCONF for device-level APIs, and Python scripting to programmatically retrieve and update device configurations.

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-year university students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming, CCNA: Switching, Routing, and Wireless Essentials (SRWE) or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 10 practice labs
- ✓ 10 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Insertion Points:
- After CCNA: SRWE
- With CCNA Security or CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Cybersecurity

Introduction to Cybersecurity

Course Overview

This course explores cyber trends, threats, and staying safe in cyberspace, and protecting personal and company data.

Benefits

Today's interconnected world makes everyone more susceptible to cyber-attacks. Learn how to protect your personal data and privacy online and in social media, and why more and more IT jobs require cybersecurity awareness and understanding.

Explore Opportunities in Technology

- ✓ Explore the world of cybersecurity and how it relates to YOU
- ✓ Develop your cybersecurity basics for a secure and safe digital life
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and 2-Year college students, general audience

Estimated Time to Completion: 15 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 modules and 7 practice labs
- ✓ Interactive activities & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: Cybersecurity Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Career Advice
Tips for getting started in your career

Cybersecurity Essentials

Course Overview

This course covers essential knowledge for all cybersecurity domains including information security, systems security, network security, ethics and laws, and defense and mitigation techniques used in protecting businesses

Benefits

The demand for security professionals continues to grow. Develop a foundational understanding of cybercrime, security principles, technologies, and procedures used to defend networks.

Explore Opportunities in Technology

- ✓ Build your cybersecurity foundation
- ✓ Take the next step in exploring the many career possibilities in cybersecurity
- ✓ See if you want to pursue job roles in networking or cybersecurity

Course Details

Target Audience: Secondary and 2-year college vocational students

Estimated Time to Completion: 30 hours

Prerequisites: Introduction to Cybersecurity

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 8 chapters and 12 practice labs
- ✓ 10 Cisco Packet Tracer activities
- ✓ 40+ interactive activities & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CyberOps Associate

Course Overview

This course introduces the core security concepts and skills needed to monitor, detect, analyze, and respond to cybercrime, cyberespionage, insider threats, advanced persistent threats, regulatory requirements, and other cybersecurity issues facing organizations.

Benefits

Gain practical, hands-on skills needed to maintain and ensure security operational readiness of secure networked systems.

Prepare for Careers

- ✓ Develop skills for entry-level security operations center (SOC) jobs
- ✓ Prepare for CyberOps Associate certification
- ✓ Pursue a career in cybersecurity operations, a rapidly-growing, exciting new area that spans all industries

Course Details

Target Audience: Students enrolled in technology degree programs at higher education institutions; IT professionals who wants to pursue a career in Security Operations

Estimated Time to Completion: 70 hours

Recommended Preparation: Introduction to Cybersecurity, Cybersecurity Essentials

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 28 chapters and 46+ practice labs
- ✓ 6 Cisco Packet Tracer activities
- ✓ 113 interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course: CCNA Security, IoT Security

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** No (Uses Virtual Machines on the student's computer)
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified CyberOps Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA Security

Course Overview

This course introduces the core security concepts and skills needed to troubleshoot and monitor computer networks and help ensure the integrity of devices and data.

Benefits

Gain practical, hands-on skills to design, implement, and manage network security systems and ensure their integrity.

Prepare for Careers

- ✓ Build expertise in network security and data protection
- ✓ Develop skills for entry-level network security specialist roles
- ✓ Gain industry in-demand skills aligned with the National Institute for Standards and Technology (NIST) Cybersecurity Framework

Course Details

Target Audience: 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: CCNA: Switching, Routing, and Wireless Essentials (or equivalent)

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 11 chapters and 16 practice labs
- ✓ 13 Cisco Packet Tracer activities
- ✓ 65+ interactive activities, quizzes, chapter exams, and skills assessments
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit

Recommended Next Course: CyberOps Associate, IoT Security

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Security

Course Overview

The explosive growth of connected IoT devices also increases the exposure to security threats. Learn to perform vulnerability and risk assessments, and research and recommend risk mitigation strategies for common security threats in IoT systems.

Benefits

Learn practical tools for evaluating security vulnerabilities, perform threat modeling, and recommend threat mitigation measures. Gain hands-on, transferable skills relevant across IoT and other network architectures.

Prepare for Careers

- ✓ Develop skills for entry-level roles in the rapidly growing IoT and security domains
- ✓ Increase awareness of emerging technologies in the IoT Security space, such as Blockchain

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-Year University students

Estimated Time to Completion: 50 hours

Prerequisites:
- IoT Fundamentals: Connecting Things
- Networking Essentials and Cybersecurity Essentials (or equivalent)

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 24 practice labs
- ✓ 5 Cisco Packet Tracer activities
- ✓ 50+ interactive activities, videos, & quizzes
- ✓ 1 hands-on capstone activity
- ✓ 1 IoT Security game with 10 missions
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
CCNA Security or CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Yes

Features the IoT Security Game!

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Additional Courses

Entrepreneurship

Course Overview

This course teaches business and financial skills, behaviors, and attitudes, to help students develop an entrepreneurial mindset. Students learn by completing a series of interactive case studies that present realistic scenarios.

Benefits

Supplement your technical expertise with with entrepreneurial thinking, business development, and financial management skills.

Explore Opportunities in Technology

- ✓ Explore how to think like an entrepreneur
- ✓ Expand your mindset and employability with skills complementary to IT expertise
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: General audience

Estimated Time to Completion: 15 hours

Recommended Preparation:
CCNA: Introduction to Networks

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 7 modules with interactive, online case studies

Course Recognitions: Certificate of Completion

Recommended Next Course:
Hackathon Playbook (Design Thinking)

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Practice

Hands-on tools & interactive experiences
to build skills, not just knowledge

Hands-On Practice

A key pillar of Networking Academy

- Motivate your students with exciting experiences that make learning very real
- Accelerate and optimize each student's path to career-ready skills
- Build student confidence: "I can do this!"
- Developed by learning scientists & subject-matter experts

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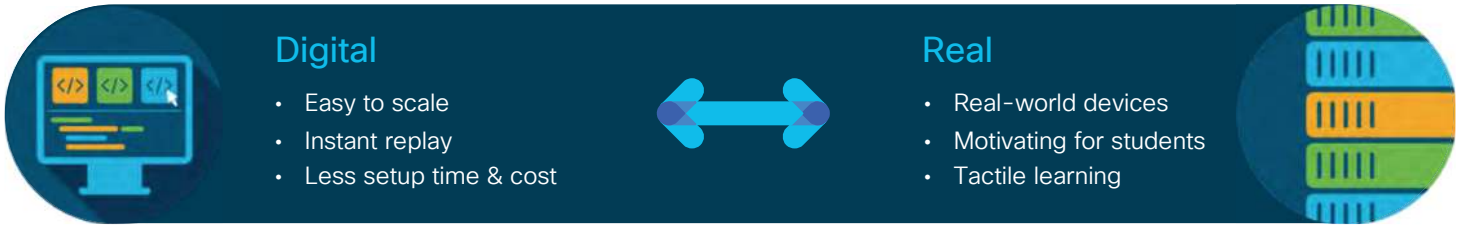
A Suite of Lab Environments

Options ranging from simulation to physical hardware



Simulation with Packet Tracer

Virtualized Equipment

Virtual Machines

Prototyping Lab

Remote Equipment

Physical Hardware

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Packet Tracer

Overview

Cisco Packet Tracer is a powerful simulation and visualization learning environment. Practice building simple and complex networks across a variety of devices and extend beyond routers and switches.

Benefits

Teach complex concepts without complex hardware. Leverage the versatility of simulation for lectures, labs, games, homework, assessments, and competitions.

Build Skills for Success

- ✓ Quickly try, experiment, learn, repeat
- ✓ Practice teamwork, critical thinking and creative problem solving skills
- ✓ Integration with online assessment engine prepares students for hands-on assessments

Details

Use it to:

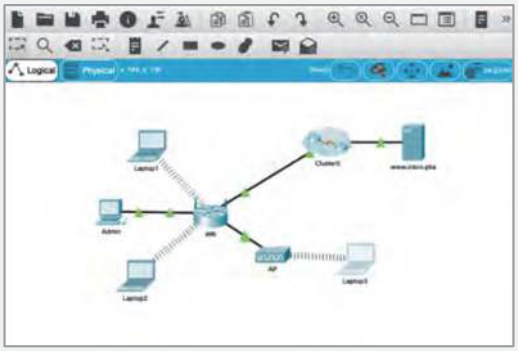
- Visualize networks using everyday examples
- Build your own simulated networks
- Investigate and troubleshoot network functionality using simulation mode
- Practice configuring network and IoT devices

How to Access:
Enroll in Intro to Packet Tracer course to download desktop version

Courses that use Packet Tracer include:

- Networking Essentials
- Cybersecurity Essentials
- IT Essentials
- Introduction to Internet of Things (IoT)
- CCNA
- CCNP Enterprise
- CCNA Security
- CyberOps Associate

Practice



Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Quick Links

Packet Tracer Landing Page

Introduction to Packet Tracer Course Page

Teaching with Packet Tracer

Introduction to Packet Tracer

Course Overview

The Introduction to Packet Tracer series is designed for new users of Packet Tracer for self-study and familiarization with the tool used in many Networking Academy courses. Packet Tracer courses are available for the desktop and for mobile (Android and iOS).

Benefits

The Introduction to Packet Tracer series introduces tips and best practices to help instructors and students use Cisco Packet Tracer as an effective and engaging learning and assessment tool.

Explore Opportunities in Technology

- ✓ Learn the power of simulation tools to build and investigate networks in software
- ✓ Get familiar using Cisco Packet Tracer, a key learning tool you will use in NetAcad courses

Course Details

Target Audience: General audience

Estimated Time to Completion: 10 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 8 chapters with instructional videos
- ✓ 13 Cisco Packet Tracer activities
- ✓ Sample files
- ✓ 2 quizzes

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: Networking Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Virtual Machines (VM)

Overview

Virtual machines are virtual environments that emulate a computer system. These self-contained virtual environments let students explore systems to the breaking point without causing actual damage.

Benefits

Experiment and explore in a low-risk environment. Deliberately test security threats and malware in a safe environment.

Build Skills for Success

- ✓ Hands-on cybersecurity practice
- ✓ Students become familiar with virtual machines to prepare for on-the-job skills

Details

Use it to:

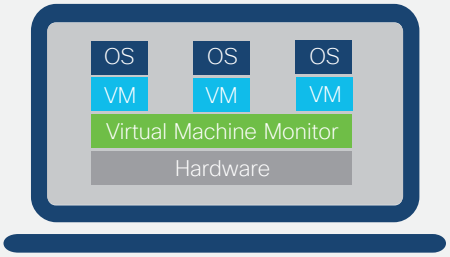
- Teach virtual machine technology
- Simulate real-world cybersecurity threat scenarios
- Create opportunities for ethical hacking, security monitoring, analysis, and resolution

How to Access:
Free software download from Oracle VirtualBox
https://www.oracle.com/virtualization/technologies/vm/downloads/virtualbox-downloads.html

Courses that use Virtual Machines include:

- CCNA
- CyberOps Associate
- Emerging Technologies Workshop: Model-Driven Programmability
- DevNet Associate

Practice



Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Prototyping Lab (PL App)

Overview

Dive into the world of sensors and connected things. The Prototyping Lab Kit uses a Raspberry Pi and Arduino setup to create an end-to-end IoT system on a lab table.

Benefits

Lab setup is easy with low-cost hardware and app download. Use real devices & code to collect, analyze, and present data from the physical world.

Build Skills for Success

- ✓ Spark entrepreneurial and systems thinking
- ✓ Students gain hands-on experience with an entire IoT system
- ✓ Build programming skills with Blockly visual programming or coding in Python

Details

Use it to:

- Acquire physical data with Arduino
- Collect and analyze data on Raspberry Pi
- Visualize data with Jupyter Notebook
- Connect to cloud applications with REST APIs

How to Access:

Prototyping Lab is comprised of the Prototyping Lab Kit (hardware) and Prototyping Lab App (software).

Find the hardware list and software download links on the Resources page: https://www.netacad.com/portal/resources/course-resources/cisco-prototyping-lab-resources

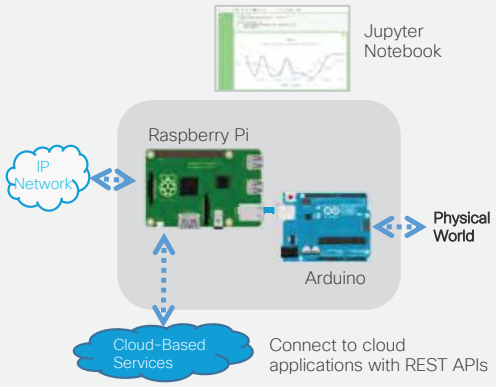
Courses that use Prototyping Lab include:

- IoT Fundamentals: Connecting Things
- IoT Fundamentals: Big Data & Analytics
- Hackathon Playbook (Design Thinking)
- IoT Security

Prototyping Lab Kit includes:

- Raspberry Pi 3 CanaKit Ultimate Starter Kit (or equivalent)
- Cables, sensors, and actuators
- SparkFun Inventor's Kit for Arduino v3.2 (or equivalent)
- Prototyping Lab App

Practice



Requirements & Resources

- **Cost:** Yes (for hardware); Free software download

Hands-on tools & interactive experiences to build skills, not just knowledge

Remote Equipment: NDG NETLAB+

Overview

Connect to real hardware through the web. Available through Networking Academy partnerships:

NDG NETLAB+ provides cloud-based, remote access to networking equipment and PCs.

Benefits

Reduce your setup time for complex labs with on-demand remote access to lab equipment when you need it.

Build Skills for Success

- ✓ Provide practice opportunities for students to complete labs from anywhere
- ✓ Supplement your lab offerings when physical hardware is not available at your institution

Details

Use it to:

- Access remote IT equipment through a web browser
- Reduce your lab setup time

How to Access:

Learn more at the NDG NETLAB+ page for Networking Academy.
https://www.netdevgroup.com/content/cnap/

Courses that use Remote Equipment include:

- CCNA
- CCNP Enterprise
- IT Essentials
- CyberOps Associate
- CCNA Security

Practice

In partnership with

NDG NETLAB+

Requirements & Resources

- **Cost:** Yes

Hands-on tools & interactive experiences to build skills, not just knowledge

Remote Equipment: DevNet Sandbox

Overview

Connect to real hardware through the web. Available through Networking Academy partnerships:

Cisco DevNet Sandbox offers packaged labs for software development, testing APIs, training, hackathons, and more.

Benefits

Reduce your setup time for complex labs with on-demand remote access to lab equipment when you need it.

Build Skills for Success

- ✓ Students get experience running their code against live network infrastructure
- ✓ Practice working in a sandbox environment just like on-the-job software developers

Details

Use it to:

- Interact with live network infrastructure and programmable devices using real-world Application Programming Interfaces (APIs)

How to Access:

Learn more at the Cisco DevNet Sandbox page https://developer.cisco.com/site/sandbox/

Courses that use Remote Equipment include:

- Workshop: Experimenting with REST APIs
- Workshop: Network Programmability
- Workshop: Model-Driven Programmability
- DevNet Associate

Practice

DEVNET DevNet Sandbox

Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Physical Hardware

Overview

Bring the real world inside the classroom so students can practice physical, sensory skills. Seeing and exploring with real equipment makes the abstract more tangible.

Benefits

Excite learners to consider career pathways in networking technology, and increase retention through tactile learning.

Build Skills for Success

- ✓ Provide hands-on practice with the same devices found in the work environment
- ✓ Students gain real experience even before on-the-job training
- ✓ Build transferable, career-ready skills

Details

How to Access:

1. Contact a local Cisco Reseller Partner for pricing and order fulfillment. Use Partner Finder to find one near you.
2. Consider working with an Academy Support Center (ASC) who can help you choose the best way to secure equipment needed for your location. They may offer loaner equipment or used equipment options

Courses that use Physical Hardware include:

- Networking Essentials
- IT Essentials
- CCNA
- CCNP Enterprise
- CCNA Security
- IoT Security

Requirements & Resources

- **Cost:** Yes

Discounts

Equipment discounts are available for Networking Academy institutions. Available for Cisco equipment needed for Networking Academy courses and labs when purchased through a Cisco Reseller Partner.

Hands-on tools & interactive experiences to build skills, not just knowledge

Language Availability

October 2020

Explore Course Languages

Explore	Arabic	Chinese-Simplified	Chinese-Traditional	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hindi	Hungarian	Indonesian	Italian	Japanese	Kazakh	Korean	Polish	Portuguese-Brazil	Portuguese-Portugal	Romanian	Russian	Spanish	Turkish	Ukrainian
Cybersecurity Essentials		✓				✓	✓		✓						✓				✓			✓	✓		✓
Entrepreneurship	✓	✓	✓			✓	✓			✓				✓					✓				✓		
Get Connected		✓	✓			✓	✓		✓		✓			✓					✓	✓			✓		
Introduction to Cybersecurity	✓	✓			✓	✓	✓		✓	✓			✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Introduction to IoT / Introduction to IoE	✓	✓	✓		✓	✓	✓		✓	✓				✓	✓	✓		✓	✓			✓	✓		✓
Introduction to Packet Tracer						✓																			✓
Networking Essentials 1.0	✓	✓				✓	✓		✓						✓				✓			✓	✓		
NDG Linux Unhatched						✓	✓		✓					✓									✓		

Career Course Languages

October 2020

Career	Arabic	Chinese-Simplified	Chinese-Traditional	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hindi	Hungarian	Indonesian	Italian	Japanese	Kazakh	Korean	Polish	Portuguese-Brazil	Portuguese-Portugal	Romanian	Russian	Spanish	Turkish	Ukrainian
CCNA Cybersecurity Operations		✓	✓			✓	✓								✓							✓	✓		
CCNA R&S: Connecting Networks	✓	✓		✓		✓	✓					✓			✓			✓	✓			✓	✓	✓	
CCNA R&S: Introduction to Networks	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓		✓	✓			✓	✓		✓	✓	✓	✓	
CCNA R&S: Routing and Switching Essentials	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓			✓			✓	✓		✓	✓	✓	✓	
CCNA R&S: Scaling Networks	✓	✓		✓		✓	✓					✓			✓			✓	✓			✓	✓	✓	
CCNA Security		✓				✓																✓			
CCNA: Enterprise Networking, Security, and Automation	✓	✓				✓	✓												✓			✓	✓		
CCNA: Introduction to Networks	✓	✓				✓	✓		✓									✓	✓			✓	✓		✓
CCNA: Switching, Routing, and Wireless Essentials	✓	✓				✓	✓												✓			✓	✓		
CCNP Enterprise: Advanced Routing						✓																			
CCNP Enterprise: Core Networking						✓																			
CyberOps Associate						✓																			
DevNet Associate						✓																			
Emerging Technologies Workshop - Experimenting with REST APIs using Webex Teams						✓																			
Emerging Technologies Workshop - Model Driven Programmability						✓																			
Emerging Technologies Workshop - Network Programmability with Cisco APIC-EM						✓																			
IoT Fundamentals: Big Data & Analytics		✓				✓	✓																✓		
IoT Fundamentals: Connecting Things		✓				✓	✓		✓														✓		✓
IoT Fundamentals: Hackathon Playbook						✓																	✓		✓
IoT Fundamentals: IoT Security		✓				✓																			
IT Essentials	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓		✓	✓		✓	✓	✓	✓	✓
Networking Essentials 2.0						✓																			
NDG Linux Essentials						✓																	✓		
PCAP - Programming Essentials in Python						✓												✓					✓		

October 2020

Complementary Offerings Languages

Complementary	Arabic	Chinese-S	Chinese-T	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hungarian	Italian	Japan.	Kazakh	Korean	Polish	Portuguese	Romanian	Russian	Spanish	Turkish	Ukrainian
NDG Linux I and II						✓																
CLA: Programming Essentials in C						✓																
CLP: Advanced Programming in C						✓																
CPA: Programming Essentials in C++						✓																
CPP: Advanced Programming in C++						✓																

Quick Links

- Networking Academy Website – netacad.com
- Networking Academy Program Overview
- Helpful Program Resources, including NetAcad Program FAQ
- Course Demos (available for select courses)
- Cisco Interactive Course Pathways
- Employment Opportunities (Talent Bridge)
- Remote Teaching & Learning – Tools and Tips

2015-16

Dept. of EEE

DEPARTMENT OF EEE

MVGR COLLEGE OF ENGINEERING (AUTONOMOUS)

(Listed Under 2(f), 12(b) Act of UGC)

(Permanently Affiliated to JNTU, Kakinada, and Approved by AICTE & NBA, New Delhi, Accredited with "A" grade by NAAC)

VIZIANAGARAM

Dt: 28-08-015

This is to inform all the students who have registered with PLC training program(SIEMENS) that the training program will be starting from first week of September 2015 as per the time table.

Co-ordinator

To Notice Board
& class executive

Head of the Department
Dept. of Electrical & Electronics Engg.
M.V.G.R. College of Engineering
CHINTALAVALASA
VIZIANAGARAM-535 005

DEPARTMENT OF EEE

MVGR COLLEGE OF ENGINEERING (AUTONOMOUS)

(Listed Under 2(f), 12(b) Act of UGC)

(Permanently Affiliated to JNTU, Kakinada, and Approved by AICTE & NBA, New Delhi, Accredited with "A" grade by NAAC)

VIZIANAGARAM

Dt: 20-08-015

Department is planning to conduct Add-on program on SIEMENS PLC from Sept 2015. Those who are interested can give their names to the coordinator, Mr. P. Sai Srinivas to finalise the schedule.

Co-ordinator

To Notice Board & class circuit

Head of the Department
Dept. of Electrical & Electronics Engg
M.V.G.R. College of Engineering
CHINTALAVALASA
VIZIANAGARAM-535 005

DEPARTMENT OF EEE
MVGR COLLEGE OF ENGINEERING (AUTONOMOUS)
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VIZIANAGARAM

Syllabus for Add – On course on SEIMENS PLC S1200

- What is a PLC?
- History of the PLC
- Parts of the PLC
- Fundamentals of PLC Programming
- Configuration
- Ladder Logic (LD)
- Function Block Diagram (FBD)
- Instruction List (IL)
- Structured Text (ST)
- Sequential Function Chart (SFC)
- Arithmetic Functions
- Logic Functions
- Timers and Counters
- Communication Instructions
- Data Transfer Instructions
- System Bits and Words
- Function Blocks
- Derived Function Blocks
- PID Function Blocks
- Configuration of Controller
- Configuration of Network Modules
- Configuration of Input Output Modules
- Structuring a program
- Creation of database
- Programmer's console
- Downloading / Uploading Projects
- PLC Modes (RUN, STANDBY, MONITOR)
- Simulation & Testing
- Loop tuning & Parameter setting
- On line Monitoring / debugging
- Diagnostic features

Head of the Department
Dept. of Electrical & Electronics Engg
M.V.G.R.College of Engineering(Autonomous)
Chintalavalasa,
VIZIANAGARAM-535 005

Some Programs identified to make students work

- Controlling Stepper Motor using PLC
- Controlling Motor from 3 different Position (1 ON & 2 OFF)
- Toggle functioning of two motors using timer
- Automatic switching of pair of motors.
- Single Conveyor with counter
- Water tank level control
- Security Alarm System Controlling
- Controlling Motor direction – Forward & Reverse
- Lift Control
- Traffic Signal Control

Head of the Department
Dept. of Electrical & Electronics Engg
M.V.G.R.College of Engineering(Autonomous)
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VIZIANAGARAM-535 005

Dept. of Mechanical Engg

Achievements through SAEINDIA MVGRCE COLLEGIATE CLUB

The MVGRCE SAEINDIA Collegiate Club was established in the year 2011. The prime objective of the club is to bring together auto enthusiasts and make them aware of emerging technologies and latest trends in the field of Automotive Engineering.

- Student teams stood first in Aero-modeling, second in Modeling and Animation, second in Technical Paper Presentation and second in AUTO Quiz
- Student got opportunity to work as a design engineer in Renault Nissan, Chennai in the Year 2012.
- 9 students participated in the Tier 2 Events held at Vignan Institute of Technology and Science, Hyderabad.
- 7 students participated in student convection Tier 3 at K.S. Ranga Swami College of Technology, Tiruchungode, India.
- Team Terrain Tamers, The BAJA Team from our Collegiate Club participated in The Virtual BAJA 2013
- Participated in the SAE TREK organized at Erode.
- Team Invincible qualified in Virtual BAJA 2014 and manufactured vehicle for the final 'OFFROAD Vehicle Round in BAJA 2014

Courses Offered

Course	Duration (Hrs)	Faculty Team (Experience)
CREO(PRO-E)	120	Dr.S.Adinarayana - 14(Acad) + 1 (Ind) Dr. L.V.Venugopal Rao - 5 (Acad) + 4 (Ind) Dr. S.Srinivasa Rao - 9 (Acad) Sri. M.Kannam Naidu - 9 (Acad) Sri. Ajay Konapala - 5 (Acad) + 4 (Ind) Sri. S. Sanyasi Naidu - 3 (Acad) Sri.Ch.Varun - 3 (Acad) Sri. G.Satyanarayana - 3 (Acad)
Ansys	80	
Windchill-PDM Link	80	

ACHIEVEMENTS

8 faculty members become PTC certified trainers after completion of their training.

160 students completed course on CREO/Pro-E and certified by PTC and they also completed course on ANSYS and certified by MVGR.

90 students completed course on Windchill PDM and certified by MVGR.

Certification course helped the first batch students (30) To get selected for TCS (20 members), Mahindra Satyam (1 members), Renault Nissan (1 member), Adroitec (2 members), Rolan Seals (1 member) before completion of their B.Tech Degree in various placement interviews. Couple of remaining students also got their jobs after completion of the course through off-campus interviews.

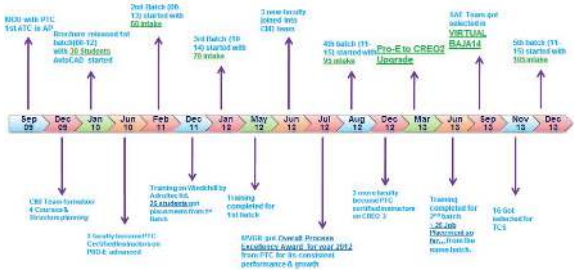
Helped the 2nd batch students (60) to get placed for TCS (11 members), Hyundai R&D Hyderabad (4 members), BOSCH (8 members), SWIFT-PLM (4 members), etc.

16 students from the 3rd batch (70) got placed in TCS and few more companies are yet to visit campus.

Training also helping students in choosing their specializations at Masters in India & Abroad.

MVGR has got OVERALL PROCESS EXCELLENCY award for the year 2012 among 88 PTC Authorized Training Centres across India during its annual ATC meet- LEAP conducted by PTC during July 2012, at GOA.

Activities so far...



MVGR College of Engineering

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Feb 2014

ANNUAL PROGRESS REPORT OF CENTER FOR INDUSTRY INTEGRATED DESIGN & DEVELOPMENT (CIID)

CIID@MVGR

An Authorized Training Center for PTC

VISION

Maharaj Vijayaram Gajapathi Raj (MVGR) College of Engineering strives to become a center par excellence for technical education where aspiring students can be transformed into skilled and well-rounded professionals with strong understanding of fundamentals, a flair for responsible innovation in engineering practical solutions applying the fundamentals, and confidence and poise to meet the challenges in their chosen professional spheres. .

Inside

MVGR College of Engg. P.1
Mechanical Engg Dept. P.2
CIID P.3
Achievements P.4

MVGR College of Engineering

Maharaj Vijayaram Gajapathi Raj (MVGR) College of Engineering was established in 1997 by MANSAS to impart quality technical education in Andhra Pradesh. MVGR College of Engineering is one of the 12 institutes of MANSAS and is located in lush green, serene and pollution free environment spread over 42.2 acres of land in Chintalavalasa situated in outskirts of Vizianagaram.

Faculty is the biggest strength of the college. It has engaged more than 200 full time committed teaching staff with most of them having highest academic qualification in their respective fields with more than 50 PhD holders to cater the needs of UG and PG students. Faculty members guide the students to harness their complete academic potential. The college regularly invites eminent professionals from industry and academia to share practical experience with the students and staff.

Regular compliance with norms has earned the college a Permanent Affiliation by Jawaharlal Nehru Technological University (JNTU), Kakinada. All eligible Departments which are more than seven years of age have been accredited by National Board of Accreditation (NBA) of All India Council for Technical Education (AICTE). The college commitment to process, quality and academic excellence has been rewarded by "Rated Grade-A" by the National Assessment and Accreditation Council (NAAC) of the University Grants Commission (UGC). The college is due to apply for a 'Deemed to be University' status by the UGC.

The college has moved forward from a humble beginning with 4 departments and 200 students in 1997 to a current regular intake of 774 students. It offers Bachelors Degree in Civil, Chemical, Computer Science, Electronics and Communication, Electrical & Electronics, Information Technology and Mechanical Engineering. It also offers Postgraduate courses in Engineering, Management and Computer Applications. The college has churned out many university rankers and gold medalists and its alumni are spread across the globe. Many alumni are holding key positions in Government, MNCs, Education & Research Facilities and Private sector of India.

Research and consultancy Initiatives

Sponsored Projects

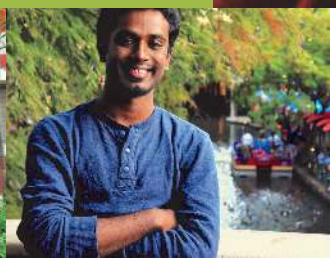
1.Project sanctioned by Science and Engineering Research Council (SERC) of the Department of Science and Technology (DST) for the development of an open-architecture controlled performance enhancement system for a machine tool. Centre for Intelligent Manufacturing Automation was established in 2011. Amount sanctioned: Rs. 38,72,000

2.Project for laboratory development sanctioned by AICTE under the MODROBS scheme for modernization of thermal engineering laboratory. AVL 444 5 – Exhaust Gas Analyzer, AVL 437C Smoke Meter, Exhaust Gas Recirculation setup for VCR Diesel Engine are installed and amount sanctioned: Rs. 7,80,000.

3.Project sanctioned by AICTE under the RPS scheme for research. VCR multi fuel engine, Variable injection kit, Vibration analysis software (LAB View) are installed and Amount sanctioned: Rs. 17,00,000

Consultancy

1. MOU with M/s Askar Microns, Mysore for research in the field of Machine Tools
2. MOU with Zeus Numerix, Pune for research in Computational Fluid Dynamics
3. Technical Cooperation with M/s MTAB Engineers Pvt. Ltd., Chennai to carry out research in the area of Mechatronics and Robotics
4. Entering into MOU with KUKA Robot, India for establishment of regional industrial robotics training centre as well as student add-on program in industrial robotics



The department of Mechanical Engineering was established in MVGR College of Engineering in the year 1997 with an annual intake of 60 students, which has been increased to 120 in the year 2009 and increased to 180 in the year 2011. Since its inception, the department is maintaining consistency in academic performance and it is sustained with its bagging "University Gold Medal" by its first batch student and possessing "University Second Rank" by two of its second batch students consequently.

The total investment in departmental facilities, primarily laboratories, stands at Rs. 2,64,05,455/-. The Department is located in total plinth area of 3308 sq m. The Department also has up to date computer facility with latest hardware to work with latest design, analysis and PDM softwares. Department has facility for faculty as well as students to work with CAD softwares like CREO, WindChill PDM Link, ANSYS, CATIA, IDEAS, Inventor series packages, ZNTutor and CFDExpert, EdgeCAM, AutoCAD etc.

Besides the state-of-art laboratories, the major strength of the department is its faculty members, who acquired qualifications from various reputed foreign and Indian institutes. Out of 35 permanent faculty 9 are Ph.D holders, 6 are in the final phase and another 8 registered for Ph.D recently at various universities.

The department is consistently striving towards flourishing its objective of imparting quality and value based education through adopting updated methods of teaching emulating the changing trends in the various fields of Mechanical Engineering.

Department also runs various other programs/activities like offering advanced technologies and trends to the students through its add-on-courses, Various Student Club activities like SAEINDIA MVGRCE COLLEGIATE CLUB, ROBOTICS CLUB, etc. and Student Development Center, Seminars by external resources, Training and Placement activities, National and International level paper presentations, Industry Visits, Industrial oriented programs etc. to develop Industry ready professionals.

In addition department is extending their activity towards research by doing real time projects. Department proved its strength by competing with many best institutes like IITs and NITs and stood one among them by achieving a substantial DST and MSME projects recently.

MVGR Mechanical Engineering Department has started Postgraduate program in MACHINE DESIGN with the intake of 18 students from the academic year 2004. The department has established all the laboratories required for PG program in Machine Design and is planning to start another postgraduate courses in CAD/CAM.

Centre for Industry Integrated Design & Development (CIID)

An Authorized Training Center for PTC

Passion Ignited By a Lifetime of Learning

'Centre for Industry Integrated Design & Development-(CIID)' is one of the top class advanced training program being conducted at MVGR since 2009, with a vision of providing advanced training and to make the students more employable. Under this, MVGR is offering training on advanced applications like CREO (formerly Pro-E), Ansys, Windchill-PDM (PDM application) for students of its own as well as outside.

As part of this program, MVGR tied up with PTC-India and became one of the PTC Authorized Training Centre in India and is the first ATC in the state of Andhra Pradesh. In addition to the training on PTC products, CIID also offering training on Analysis tools. Being the Authorized Training Centre, CIID provides training with high quality materials and infrastructure employed by PTC, to service their own students.

ATC's are held to strict standards in terms of instructors, materials and classroom facilities to ensure that Students will receive a consistent and high quality training experience.

A team of 8 well experienced faculty members are being imparted into the program for its success and the team is headed by Dr.S. Adinarayana, Professor & Head of the Dept, Mechanical Engineering.

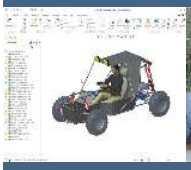
Faculty:
PTC Authorized & Certified Trainers (with mix of Academic & Industry experience)

Target Students:
2nd year B.Tech Mechanical Engineering students of MVGR COE
Mechanical, Automobile Diploma & Engineering Students from other

SAE BAJA 2014

MVGR college student team selected through 'Virtual BAJA 2014' an Intercollegiate design competition conducted by Society of Automotive Engineers (SAE) INDIA at Bangalore on 26th Jul 2013

MVGR become one among the 5 Engineering institutions in the entire Andhra Pradesh that got selected in the first level (design) of this event. They made vehical and going for the final 'OFFROAD Vehicle Round' conducted at Indore.



Principal's message

Current Industry Trends

With the increased competition and current Industry trends, both faculty and fresh engineering graduates are expected to be with additional skills and proficiency on latest technology and applications. CIID is started with the following Objectives to fill the industry institute gap in the area of Design & CAD/CAM.

Objectives of the Program

- → To build technology literacy, Improve critical thinking and strategic thinking skills which improve student confidence.
- → To improve skill levels of individuals on advanced CAD applications like CREO, ANSYS, Windchill-PDM Link and to make them industry ready.
- → To let the students work on various real time project works and to let them participate at various national/ international competitions
- → To interact with industry experts
- → To assist the students in getting placed in top class companies

About the Institution

Maharaj Vijayaram Gajapathi Raj College of Engineering, Vizianagaram was established in the year 1997, under aegis of MANSAS (Maharaj Alaknarayan Society of Arts & Science) an educational trust founded by Late Dr. P.V.G. Raju, Rajasaheb of Vizianagaram with an objective to pioneer the institutes of higher learning in north coastal Andhra. The college has well established laboratories with state-of-art equipment for all the courses of engineering. It also has highly qualified, experienced and committed faculty. The Institution is accredited by NAAC of UGC& NBA of AICTE and is permanently affiliated to JNTU, Kakinada.

Vision

Maharaj Vijayaram Gajapathi Raj College of Engineering strives to become a center par excellence for technical education where aspiring students can be transformed into skilled and well-rounded professionals with strong understanding of fundamentals, a flair for responsible innovation in engineering practical solutions applying the fundamentals, and confidence and poise to meet the challenges in their chosen professional spheres.

Mission

The management believes in imparting quality education in an atmosphere that motivates learning as a social obligation which we owe to the students, their parents/guardians and society at large and hence the effort is to leave no stone unturned in providing the same with all sincerity.

ABOUT MECHANICAL ENGINEERING DEPARTMENT

The department of Mechanical Engineering was established in MVGR College of Engineering in the year 1997 with an annual intake of 60 students, which has been increased to 120 from the academic year 2009-10. Since its inception, the department is maintaining consistency in academic performance beginning with its bagging "University Gold Medal" by its first batch student and possessing "University Second Rank" by two of its second batch students.

Besides the state-of-art laboratories, the major strength of the department is its faculty members, who acquired qualifications from various reputed foreign and Indian institutes. The department is consistently striving towards achieving its objective of imparting quality and value based education through adopting updated methods of teaching emulating the changing trends in the various fields of Mechanical Engineering. Department also runs various other programs/activities like offering advanced technologies and trends to the students through its Student Development Center, seminars by external resources, Training and Placement activities, National and International level paper presentations, Industry Visits, Industrial oriented programs etc. to develop Industry ready professionals. In addition department is extending their activity towards research by doing real time projects.

Department proved its strength by competing with many best institutes like IITs and NITs and stood one among them by securing grants from DST and MSME for execution of research projects. Out of 9 successful batches that have passed out from the department 300 students are working in reputed organizations and 60 members pursuing higher studies abroad and in India. MVGR MechE has started Postgraduate program in Machine Design with the intake of 18 students from the academic year 2004. The department has established all the laboratories required for UG & PG education with an investment of around 2 crores.

DEPARTMENT STRENGTHS

- Availability of highly qualified faculty members
- Motivated, committed and enthusiastic staff members
- Active encouragement of the management in the developmental activities
- Continuous upgrading of infrastructure facilities
- Availability of advanced research equipment
- Well equipped labs with modern equipments
- Located in a serene campus away from the city crowd

HUMAN RESOURCES

Faculty

Department possess well qualified faculty members with 8 PhD's. Faculty have a mixture of industrial and academic experience with an average experience of about 10 years. At present there are 4 Professors, 5 Associate Professors, 4 Senior Assistant Professor and 5 Assistant Professors

LABORATORY FACILITIES

The laboratories of the Mechanical Engineering Department are well equipped with sophisticated equipment as per JNTU and AICTE norms. The Department is located in a total plinth area of 3308 sq m. In addition to installing the necessary equipment, the Department has also and continues to invest in purchase of advanced equipment for the purpose of faculty research, industry-institute collaboration and for student projects. Such infrastructure has enabled the Department to rise to the level of taking up external sponsored projects. In addition, the Department has set up research lab to initiate research activities in the area of manufacturing and automation as well as expose students to the latest trends in manufacturing. A 3 axis CNC machine, 6 axis robot, FPT analyser, VCR Engine and image analyser provide ample scope for cutting edge research work. In addition the department is also equipped with 40 Pentium-D Dual Core systems with 17" TFT Monitors. The softwares available include AutoCAD, CATIA, ANSYS, ALG-NASTRAN, IDEAS, EDGECAM, Pro-Engineer & Windchill

Mechanics of Solids Lab

Fluid Mechanics Lab

Centre for Industry Integrated Development (CIID):

Introduction:

Center for Industry Integrated Development (CIID) was launched by the Department of Mechanical Engineering with an objective of improvising the student's excellence in various areas so that they can be best benefited out of the college. In the process of reaching its objective CIID made an MOU with Parametric Technology (India) Private Limited ("PTC") to become an Authorised Training Center (ATC) for Pro-E & Windchill and to provide 2 year training program for the students in order to get internationally valid certification. Along with the PTC offered PRO-E & Windchill, CIID schedules for training on additional CAD tools like AutoCAD & ANSYS. This makes the students industry ready and to improvise the chances of getting placed in the best organizations across world.

Objectives:

1. To fill the gap between industry & institution
2. To prepare industry ready professionals out of the institution
3. To channelize students in various fields of mechanical engineering
4. To improve confidence levels of the student with more practical exposure
5. To improve the entrepreneur skills based upon the students interest

About PTC:

Parametric Technology Corporation (PTC)(NASDAQ: PMTC) provides Product Lifecycle Management (PLM) engineering CAD/CAM software and content management and dynamic publishing solutions to more than 50,000 companies worldwide. PTC customers include companies in manufacturing, publishing, services, government and life sciences industries.

CIID sign up with PTC:

In the process of reaching the objectives & as a stepping stone CIID of Mechanical dept, MVGR college engineering signed an MOU (memorandum of understanding) with PTC on 14th Oct 2009 to set up a centre of excellence at the college to train students on Pro/Engineer and Windchill software.

Rohit Biddappa, Senior Marketing Manager of PTC, Dr K.V.L. Raju, Principal of MVGR College of Engineering & Mr P Sajith Mohan, Education Program Manager - India on the Occasion of signing for Memorandum Of Understanding on 14th Oct 2009.

About 2 years Program on CAD & PLM:

Current trend

With over 600 engineering colleges in one state alone (AP), a student graduating with a B.Tech degree (with even very high percentage) stands little chance of making an impact in the outside world. The graduates are joining in private institutions to learn & practice specialized tools in the related field they like to work & to expertise on it.

Need for Industry-ready graduates

Industries are facing problems with the untrained fresh graduates because of risk factors and training reasons. Industries are deficiently looking forward for well trained, skilled & competent fresh graduates who are 'Industry-ready' to eliminate their problems.

Centre for Industry Integrated Development (CIID):

Objective of the program

- To train the students on 4 softwares under different categories i.e AutoCAD, Pro-E, ANSYS & Windchill with respect to industry requirements
- To let the students work on various real time projects/works from the industries
- To Interact with industry experts
- To participate in various seminars either internal or external in relation to their training
- To mentor & students based upon their interests under these 4 categories
- To assist the students getting placed in top level companies

Benefits for Students

- Internationally valid scorecard/certification after successful completion of the course & evaluation
- Interaction with Industries and to work upon real time problems
- Build technology literacy
- Improve critical thinking and strategic thinking skills
- Increase student confidence
- Experience project-based problem solving
- Become familiar with advanced design processes
- Prepare for real-world careers in technology
- Interaction with Industry experts

Fees Structure

Total fees for this 2 year training program is 20,000 Rs & can be payable in 3 installments (10,000+5,000+5,000). First installment of 10,000 Rs need to be paid immediately.

Resourse persons

Well experienced & highly qualified faculty members are the resource persons and take care of various courses and trainings involved in the whole 2 year program. Resource persons qualification and their relevant experiences are as below.

S.No	Faculty Name	Qualification	Designation	Experience (Yrs)
1	Dr. S. Adinarayana	Ph.D from Andhra University, M.Tech, BE	Associate Prof	11 (Academic) + 1 (Industrial)
2	Dr.V.S.Venu Gopal	Ph.D from IIT-Madras, ME, B.E	Associate Prof	1.5 (Academic) + 3.5 (Industrial)
3	Sri M. Kannam Naidu	(Ph.D)(A.U), ME,B.E	Sr. Assistant Prof	5.5 (Academic)
4	Sri S. Srinivasa Rao	(Ph.D)(A.U), ME,B.E	Assistant Prof	5.5 (Academic)
5	Sri Ajay Konapala	M.E, B.E	Assistant Prof	1 (Academic) + 4 (Industrial)

Course Plan

S.No	Course	Hours Planned	Resourse persons
1	AutoCAD	100	Dr.S.Adinarayana Dr. V.S.Venugopal Rao Mr. M.Kannam Naidu Mr. S.Srinivasa Rao Mr. Ajay Konapala
2	Ansys	100	
3	PRO-E	120	
4	Windchill	120	

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Pro/Engineer:

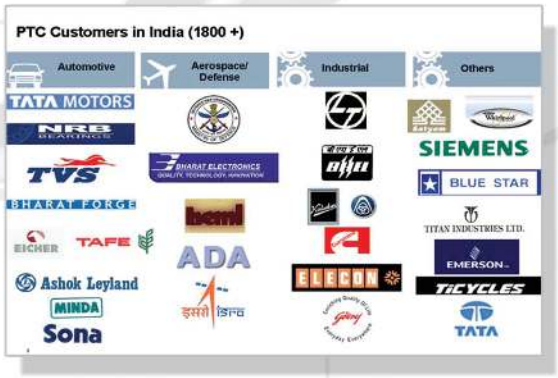
Customer requirements may change and time pressures may continue to mount, but your product design needs remain the same. Regardless of your project's scope, you need a powerful, easy-to-use, affordable solution.

Pro/ENGINEER, PTC's parametric, integrated 3D CAD/CAM/CAE solution, is used by discrete manufacturers for mechanical engineering, design and manufacturing.

Pro/ENGINEER is a parametric, integrated 3D CAD/CAM/CAE solution created by Parametric Technology Corporation (PTC). It was the first to market[2] with parametric, feature-based, associative solid modeling software on the market. The application runs on Microsoft Windows and Unix platforms, and provides solid modeling, assembly modelling and drafting, finite element analysis, and NC and tooling functionality for mechanical engineers.

Companies use Pro/ENGINEER to create a complete 3D digital model of their products. The models consist of 2D and 3D solid model data which can also be used downstream in finite element analysis, rapid prototyping, tooling design, and CNC manufacturing. All data is associative and interchangeable between the CAD, CAE and CAM modules without conversion. A product and its entire bill of materials (BOM) can be modeled accurately with fully associative engineering drawings, and revision control information. The associativity in Pro/ENGINEER enables users to make changes in the design at any time during the product development process and automatically update downstream deliverables. This capability enables concurrent engineering — design, analysis and manufacturing engineers working in parallel — and streamlines product development processes.

Pro/ENGINEER is an integral part of a broader product development system developed by PTC. It seamlessly connects to PTC's other solutions including Windchill, ProductView, Mathcad and Arbortext.



Course contents (Pro/E)

Module 01 —	Introduction to the Pro/ENGINEER Wildfire Basic Modeling Process
Module 02 —	Understanding Pro/ENGINEER Concepts
Module 03 —	Using the Pro/ENGINEER Interface
Module 04 —	Selecting and Editing
Module 05 —	Creating Sketcher Geometry
Module 06 —	Using Sketcher Tools
Module 07 —	Creating Sketches for Features
Module 08 —	Creating Datum Features: Planes and Axes
Module 09 —	Creating Extrudes, Revolves, and Ribs
Module 10 —	Utilizing Internal Sketches and Embedded Datums
Module 11 —	Creating Sweeps and Blends
Module 12 —	Creating Holes and Shells
Module 13 —	Creating Rounds and Chamfers
Module 14 —	Group, Copy, and Mirror Tools
Module 15 —	Creating Patterns
Module 16 —	Measuring and Inspecting Models
Module 17 —	Assembling with Constraints
Module 18 —	Exploding Assemblies
Module 19 —	Using Layers
Module 20 —	Investigating Parent/Child Relationships
Module 21 —	Capturing and Managing Design Intent
Module 22 —	Resolving Failures and Seeking Help
Module 23 —	Introduction to the Pro/ENGINEER Wildfire Sheetmetal Design Process
Module 24 —	Sheetmetal Model Fundamentals

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ANSYS

ANSYS, Inc. is an engineering simulation software provider founded by software engineerJohn Swanson. It develops general-purpose finite element analysis and computational fluid dynamics software. While ANSYS has developed a range of computer-aided engineering (CAE) products, it is perhaps best known for its ANSYS Mechanical and ANSYS Multiphysics products.

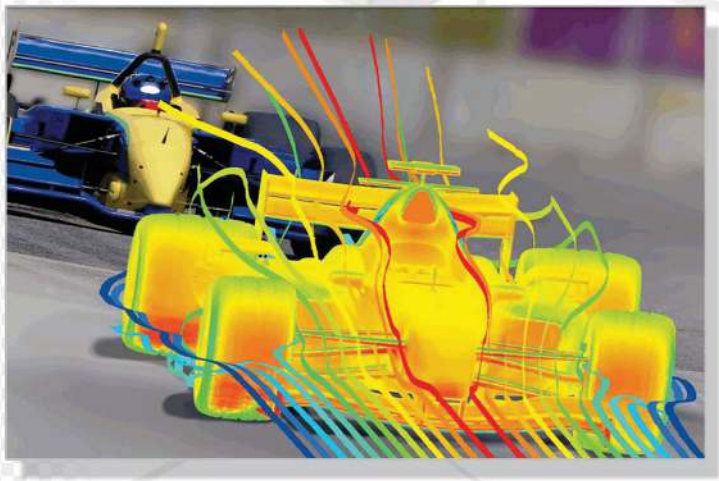
pre-processing (geometry creation, meshing), solver and post-processing modules in a graphical user interface. These are general-purpose finite element modeling packages for numerically solving mechanical problems, including static/dynamic structural analysis (both linear and non-linear), heat transfer and fluid problems, as well as acoustic and electro-magnetic problems.

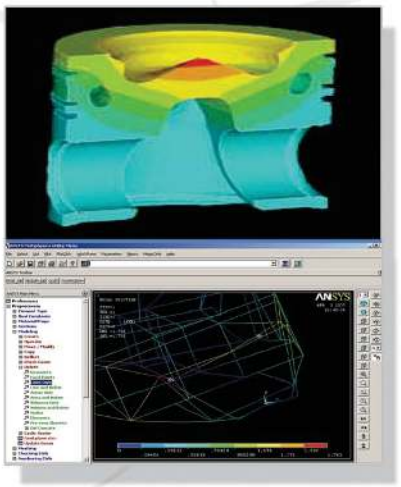
ANSYS Mechanical technology incorporates both structural and material non-linearities. ANSYS Multiphysics software includes solvers for thermal, structural, CFD, electromagnetics, and acoustics and can sometimes couple these separate physics together in order to address multidisciplinary applications. ANSYS software can also be used in civil engineering, electrical engineering, physics and chemistry.

ANSYS, Inc. acquired the CFX computational fluid dynamics code in 2003 and Fluent, Inc. in 2006. The CFD packages from ANSYS are used for engineering simulations. In 2008, ANSYS acquired Ansoft Corporation, a leading developer of high-performance electronic design automation (EDA) software, and added a suite of products designed to simulate high-performance electronics designs found in mobile communication and Internet devices, broadband networking components and systems, integrated circuits, printed circuit boards, and electromechanical systems. The acquisition allowed ANSYS to address the continuing convergence of the mechanical and electrical worlds across a whole range of industry sectors.

ANSYS is being used by following verticals

- Aerospace
- Automotive
- Built Environment & HVAC
- Chemical & Petrochemical
- Civil Engineering
- Consumer Products
- Electronics
- Environmental
- Government & Defense
- Healthcare
- Industrial Equipment
- Marine & Offshore
- Metals
- Oil & Gas
- Plastics and Rubber
- Power Generation
- Semiconductor
- Sport & Leisure
- Turbomachinery





Course contents (Ansys)

Course Description (ANSYS)

Theory of FEA
Exploring the GUI
Graphics picking
General analysis procedure
Solid modeling
Defining Work planes
Coordinate Systems
Importing geometry
Defining element attributes
Element types
Generating mesh
Free meshing
Mapped meshing
Defining material
Defining loads and boundary conditions
APDL basics
Select logic
Solvers
Post processing
Structural Static analysis
Modal analysis
Transient Dynamic analysis
Nonlinear analysis-Material Nonlinearity
Beam analysis
Thermal analysis
Coupled Field analysis
Project

Course Description

Introduction to Vibration
Free Vibration
Importance of Free Vibration in Design Consideration
Governing Equation for Free Vibration
Solving an example on Free Vibration using FEM
Understanding the usage of Command Mode in ANSYS
Understanding the problem and creating a Representative Finite Element Model
General Analysis Procedure
Interpret the results

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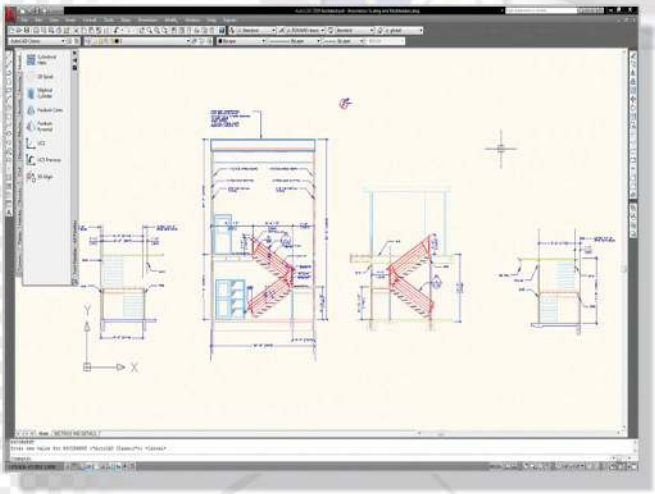
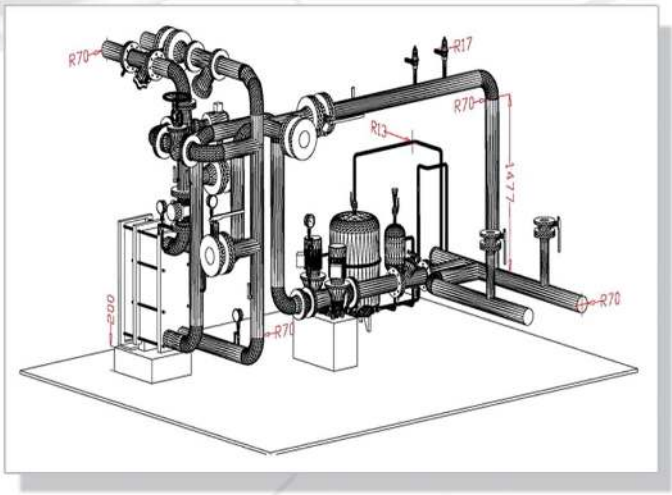
Course contents (Autocad)

AutoCAD is a CAD (Computer Aided Design or Computer Aided Drafting) software application for 2D and 3D design and drafting, developed and sold by Autodesk, Inc. Initially released in late 1982, AutoCAD was one of the first CAD programs to run on personal computers, and notably the IBM PC. Most CAD software at the time ran on graphics terminals connected to mainframe computers or mini-computers.

Autodesk, Inc. (NASDAQ: ADSK) is an American multinational corporation that focuses on 2D and 3D design software for use in architecture, engineering and building construction, manufacturing, and media and entertainment. Autodesk was founded in 1982 by John Walker, a coauthor of early versions of the company's flagship CAD software product AutoCAD, and twelve others. It is headquartered in San Rafael, California.





Course contents (Autocad)

About 2D Software

Explaining Graphical User Interface
Drawing simple sketches (Line, Arc, Circle, Ellipse, Polygon etc.)
Drawing settings
Modifying entities
Object selection methods
Settings and modifying entity properties
Creating and managing layers
Adding Annotations and Dimension to your drawing
Creating Text styles and Dimension styles
Creating Construction lines and Semi-infinite lines
Creating blocks and attributes
Working with Tables
Creating and viewing slides
Slide library
Running scripts
Creating compound documents with OLE
Electronic transmit
Plotting your drawings
Layout management
Exporting object

About 3D Software

3D modeling concepts in AutoCAD
Understand and use Viewpoint and Ucs
Viewports
Create wireframe models
Surface models
Solid models
Shading the model
Slice the 3D model
Create Sectional view

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Windchill - PDM/PLM Solution

Windchill is an integrated suite of Product Lifecycle Management applications from PTC. In late 2008, PTC announced that Windchill had over 600,000 active maintenance paying seats.

Production-proven content and process management software

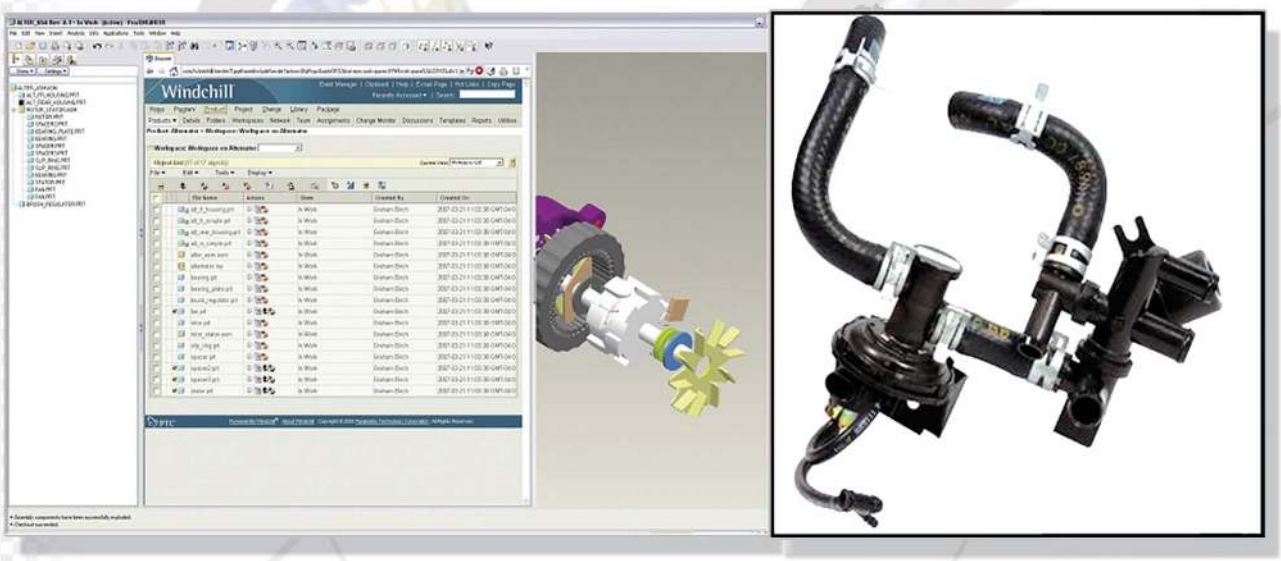
Whether you're a global conglomerate, a regional supplier, or a small service bureau, you face obstacles while trying to manage product content and development processes. Your company's success relies on having efficient business processes and effective development of complex information assets including product designs, service documentation, and regulatory submissions. Windchill, PTC's production-proven content and process management software, offers a solution. Fast, secure, and requiring only a Web browser to access, this business collaboration software enables companies to streamline product development processes and deliver superior physical goods and information products.

Features & Benefits

- Single source of product information/content enables development efficiencies, reduces errors and rework
- Complete product definition and collaboration capabilities expertly drive cross-enterprise understanding of information - regardless of source
- Repeatable, end-to-end process support and automation speeds time-to-market and reduces development cost
- Secure, industry-standard Internet architecture delivers a safe, high-performing technology platform

Windchill PDMLink – Manages and controls product information and processes through the product lifecycle.

Windchill is: Fast. Secure. Powerful. Scalable. Interoperable.



"Windchill PDMLink is a huge benefit to us by allowing us to access our system data anywhere, even at a customer assembly plant, and communicate changes to the entire team."
Cooper-Standard Automotive

Course contents (Windchill)

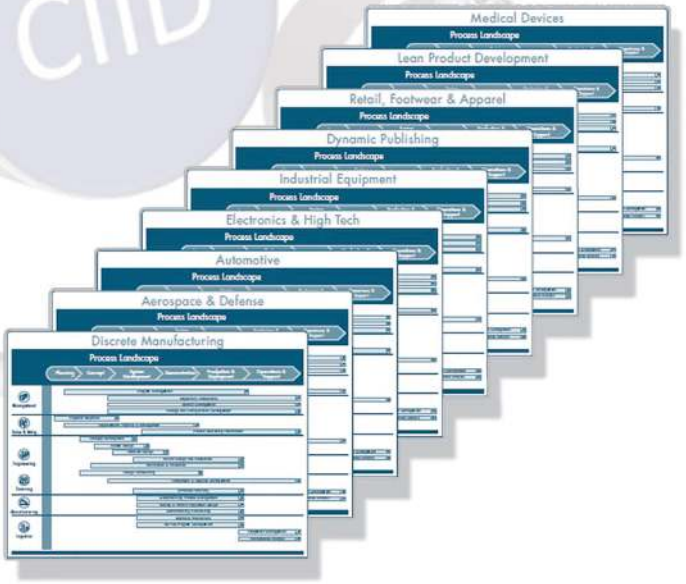
PLM Fundamentals

PDM concepts

- Storage and retrieval of product information
- business process flows
- change management
- Product structure modeling
- configurations
- variations
- versions
- revisions
- project tracking and resource planning
- Over vew of various PDM systems
- PLM Applications in various Industries
- (Apparel, Fashion, Automotive, High Tech ...)

PLM Administration

PLM Implementation



PTC has the knowledge and experience across multiple industries to help you imporve your key product development processes, end-to-end and across all organizations

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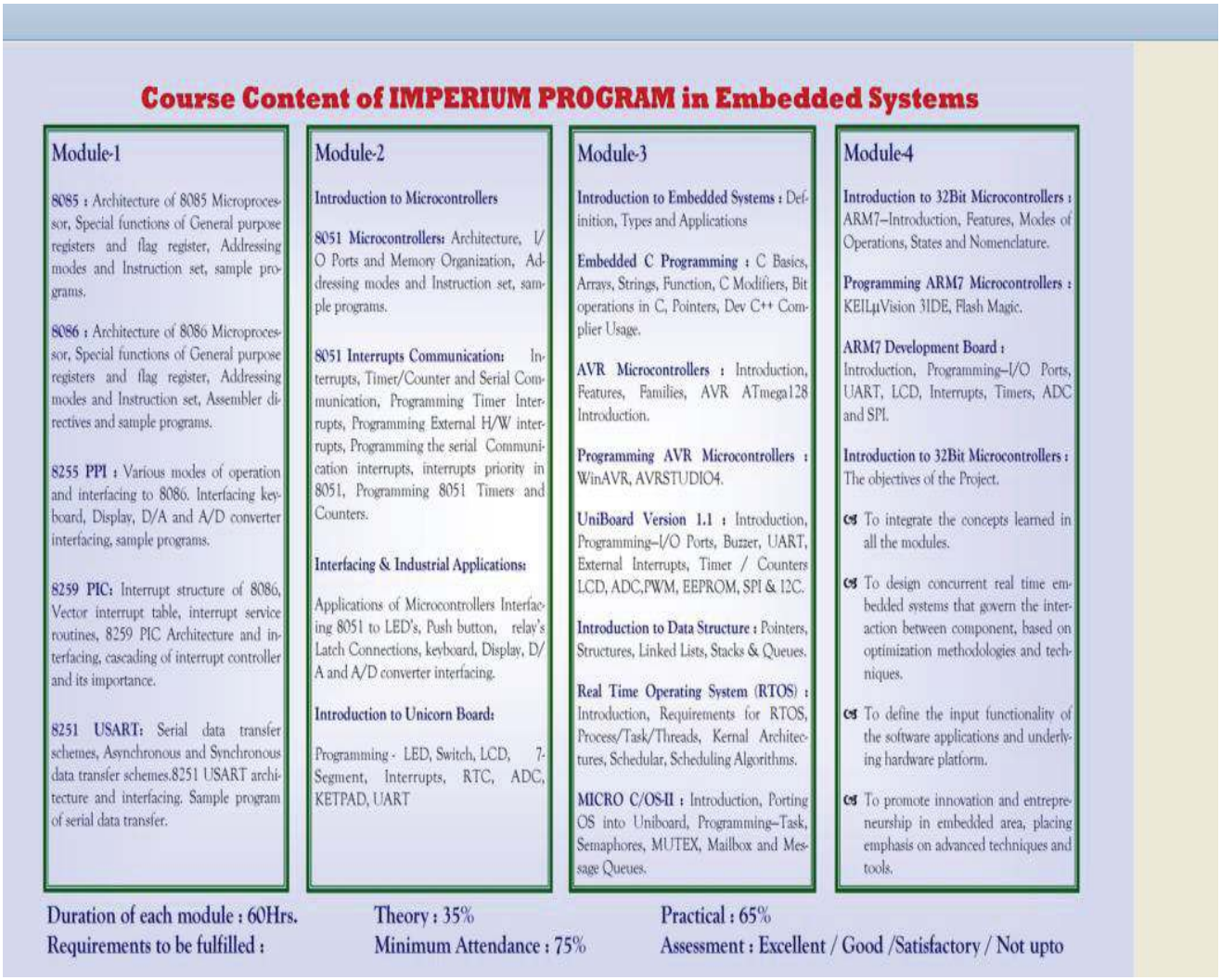
Dept. of ECE

Brochure of Embedded Systems:



Course Content of IMPERIUM PROGRAM in Embedded Systems

Module-1

8085 : Architecture of 8085 Microprocessor, Special functions of General purpose registers and flag register, Addressing modes and Instruction set, sample programs.

8086 : Architecture of 8086 Microprocessor, Special functions of General purpose registers and flag register, Addressing modes and Instruction set, Assembler directives and sample programs.

8255 PPI : Various modes of operation and interfacing to 8086. Interfacing keyboard, Display, D/A and A/D converter interfacing, sample programs.

8259 PIC: Interrupt structure of 8086, Vector interrupt table, interrupt service routines, 8259 PIC Architecture and interfacing, cascading of interrupt controller and its importance.

8251 USART: Serial data transfer schemes, Asynchronous and Synchronous data transfer schemes.8251 USART architecture and interfacing. Sample program of serial data transfer.

Module-2

Introduction to Microcontrollers

8051 Microcontrollers: Architecture, I/O Ports and Memory Organization, Addressing modes and Instruction set, sample programs.

8051 Interrupts Communication: Interrupts, Timer/Counter and Serial Communication, Programming Timer Interrupts, Programming External H/W interrupts, Programming the serial Communication interrupts, interrupts priority in 8051, Programming 8051 Timers and Counters.

Interfacing & Industrial Applications:

Applications of Microcontrollers Interfacing 8051 to LED's, Push button, relay's Latch Connections, keyboard, Display, D/A and A/D converter interfacing.

Introduction to Unicorn Board:

Programming - LED, Switch, LCD, 7-Segment, Interrupts, RTC, ADC, KETPAD, UART

Module-3

Introduction to Embedded Systems : Definition, Types and Applications

Embedded C Programming : C Basics, Arrays, Strings, Function, C Modifiers, Bit operations in C, Pointers, Dev C++ Complier Usage.

AVR Microcontrollers : Introduction, Features, Families, AVR ATmega128 Introduction.

Programming AVR Microcontrollers : WinAVR, AVRSTUDIO4.

UniBoard Version 1.1 : Introduction, Programming–I/O Ports, Buzzer, UART, External Interrupts, Timer / Counters LCD, ADC,PWM, EEPROM, SPI & I2C.

Introduction to Data Structure : Pointers, Structures, Linked Lists, Stacks & Queues.

Real Time Operating System (RTOS) : Introduction, Requirements for RTOS, Process/Task/Threads, Kernal Architectures, Schedular, Scheduling Algorithms.

MICRO C/OS-II : Introduction, Porting OS into Uniboard, Programming–Task, Semaphores, MUTEX, Mailbox and Message Queues.

Module-4

Introduction to 32Bit Microcontrollers : ARM7–Introduction, Features, Modes of Operations, States and Nomenclature.

Programming ARM7 Microcontrollers : KEIL µVision 3IDE, Flash Magic.

ARM7 Development Board : Introduction, Programming–I/O Ports, UART, LCD, Interrupts, Timers, ADC and SPI.

Introduction to 32Bit Microcontrollers : The objectives of the Project.

- To integrate the concepts learned in all the modules.
- To design concurrent real time embedded systems that govern the interaction between component, based on optimization methodologies and techniques.
- To define the input functionality of the software applications and underlying hardware platform.
- To promote innovation and entrepreneurship in embedded area, placing emphasis on advanced techniques and tools.

Duration of each module : 60Hrs. Theory : 35% Practical : 65%

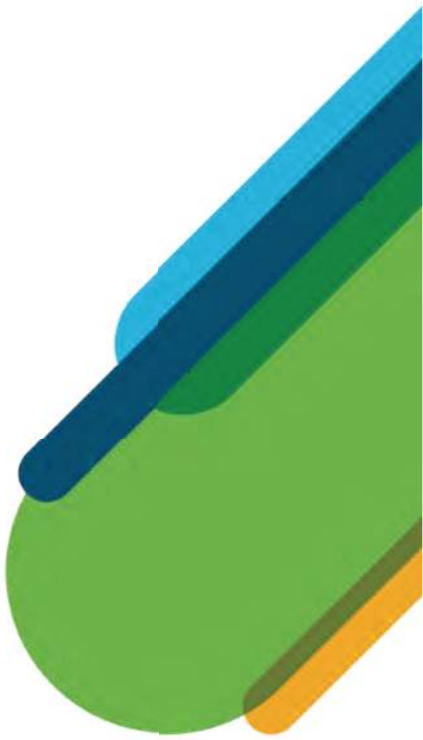
Requirements to be fulfilled : Minimum Attendance : 75% Assessment : Excellent / Good /Satisfactory / Not upto

Dept. of CSE

Networking Academy

Product Catalog

October 2020



Networking Academy

Prepare the workforce of the future

Leading-edge curriculum designed to educate students for jobs of today and tomorrow

Two Options for Course Modality

Instructor-Led

The majority of Networking Academy students take courses led by an instructor through an education institution in their local community.

Self-Paced

Online courses are self-paced and use the same curriculum taught in Networking Academy classrooms around the world.

Types of Course Offerings

Explore Courses

Easy starting points to explore opportunities in technology

- ✓ No prerequisites
- ✓ No cost
- ✓ Typically self–paced
- ✓ Between 8-30 hours

Career Courses

Equip students with real job skills for entry-level positions

- ✓ Aligned to industry-valued certifications
- ✓ Typically instructor-led and 70 hours of instruction time
- ✓ Integrated hands-on practice and interactive experiences

Complementary Offerings

Extend your teaching with courses from Networking Academy partners

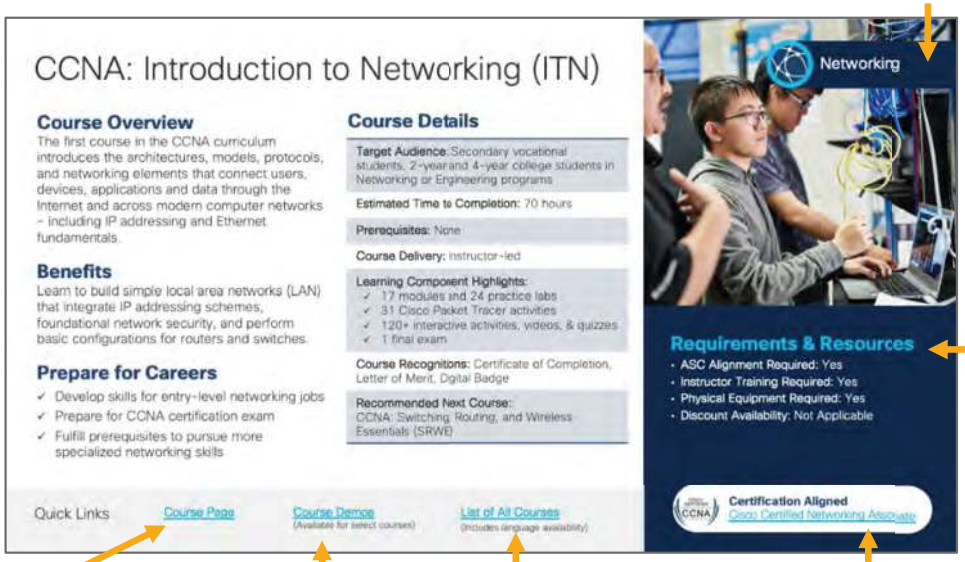
- ✓ Aligned to industry-valued certifications
- ✓ Some self-paced courses
- ✓ Some instructor-led courses for 70 hours of instruction time

Practice

Learning tools, hands-on labs, and interactive experiences are integrated into courses to build skills, not just knowledge

In This Catalog

Easy navigation by course category.



ASC Alignment Required: Due to the technical nature of some courses, Networking Academy may require that your institution receive support from an Academy Support Center (ASC).

Instructor Training Required: Some courses require accreditation or instructor training to ensure quality learning outcomes for your students.

Physical Equipment Required: Lab equipment may be required depending on the course.

Discount Availability: Discounts are available for select certification exams, for individuals meeting eligibility criteria.

Find the course page on NetAcad.com.

Course Demos are available for select courses to preview the content.

Explore the full Networking Academy course list online and filter by language. There is also a language summary matrix at the end of this catalog.

See which courses align with a certification, or get other tips about the course.

Networking Academy Curriculum Portfolio

October 2020

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Networking

Networking Essentials

Course Overview

Networking Essentials teaches networking based on environments students may encounter in daily life, including small office and home office networking. This course provides an engaging, self-paced learning experience using Packet Tracer simulation, interactive activities, and learning with your own devices at home.

Benefits

Develop a foundational understanding of the high-level network architecture and how a network operates.

Prepare for Careers

- ✓ For developers, cybersecurity, business analysts, or other professionals: gain essential networking knowledge
- ✓ For students: a launching point for many career pathways, from cybersecurity to software to business and more

Course Details

Target Audience: High school, secondary and 2-year college vocational students, college and university students studying IT and non-IT fields, career changers

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Self-Paced, Instructor-led

Learning Component Highlights:
- ✓ 20 modules and 19 practice labs
- ✓ 24 Cisco Packet Tracer activities
- ✓ 130+ interactive activities, videos, & quizzes
- ✓ 5 module exams
- ✓ 1 final exam and 1 skills assessment (Instructor-led only)

Course Recognitions: Certificate of Completion, Digital Badge (Instructor-led only)

Recommended Next Course:
CCNA: Introduction to Networks (ITN), Cybersecurity Essentials, or DevNet Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No (uses Packet Tracer and devices you already have at home)
- **Voucher Availability:** Not Applicable

Practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Introduction to Networking (ITN)

Course Overview

The first course in the CCNA curriculum introduces the architectures, models, protocols, and networking elements that connect users, devices, applications and data through the Internet and across modern computer networks – including IP addressing and Ethernet fundamentals.

Benefits

Learn to build simple local area networks (LAN) that integrate IP addressing schemes, foundational network security, and perform basic configurations for routers and switches.

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 17 modules and 24 practice labs
- ✓ 31 Cisco Packet Tracer activities
- ✓ 120+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNA: Switching, Routing, and Wireless Essentials (SRWE)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Switching, Routing, and Wireless Essentials (SRWE)

Course Overview

The second course in the CCNA curriculum focuses on switching technologies and router operations that support small-to-medium business networks and includes wireless local area networks (WLAN) and security concepts.

Benefits

Students learn key switching and routing concepts. They can perform basic network configuration and troubleshooting, identify and mitigate local area network (LAN) security threats, and configure and secure a basic WLAN.

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 16 modules and 14 practice labs
- ✓ 31 Cisco Packet Tracer activities
- ✓ 70+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNA: Enterprise Networking, Security, and Automation (ENSA)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA: Enterprise Networking, Security, and Automation (ENSA)

Course Overview

The final course in the CCNA series covers the architecture, security, and operation of an enterprise network, along with introducing the new ways in which network engineers interact with programmable infrastructure.

Benefits

Gain skills to configure and troubleshoot enterprise networks, learn to identify and protect against cybersecurity threats, and discover key concepts of software-defined networking, including controller-based architectures and application programming interfaces (APIs).

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 14 modules and 12 practice labs
- ✓ 29 Cisco Packet Tracer activities
- ✓ 100+ interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified Networking Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNP Enterprise: Core Networking (ENCOR)

Course Overview

This first course in the 2-course CCNP Enterprise series covers switching, routing, wireless, and related security topics, along with the technologies that support software-defined, programmable networks.

Benefits

Gain practical, hands-on experience and skills needed to configure, operate and troubleshoot large scale enterprise networks.

Prepare for Careers

- ✓ Develop skills for professional-level networking roles
- ✓ Prepare for the Cisco Enterprise Network Core Technologies exam (350-401 ENCOR) to earn an Enterprise Core Specialist certification
- ✓ Completion of both CCNP Enterprise courses prepares for CCNP Enterprise certification

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Recommended Preparation: CCNA or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 29 chapters and 41 practice labs
- ✓ 24 Cisco Packet Tracer activities (optional)
- ✓ 35+ interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNP Enterprise: Advance Routing (ENARSI)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Professional

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNP Enterprise: Advanced Routing (ENARSI)

Course Overview

This second of the 2-course CCNP Enterprise series focuses on implementation and troubleshooting of advanced routing and redistribution for OSPF, EIGRP and BGP along with VPN technologies, infrastructure security and management tools used in Enterprise networks.

Benefits

Gain practical, hands-on experience and skills needed to configure, operate and troubleshoot large scale enterprise networks.

Prepare for Careers

- ✓ Develop skills for professional-level networking roles
- ✓ Prepare for Cisco Enterprise Advanced Routing & Services exam (300-410 ENARSI) to earn a CCNP Specialist certification
- ✓ Completion of both CCNP Enterprise courses prepares for CCNP Enterprise certification

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Recommended Preparation: ENCOR or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 23 chapters and 40 practice labs
- ✓ 20 Cisco Packet Tracer activities (optional)
- ✓ 25+ videos & quizzes, 2 Skills Assessments
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
Broaden your skills with DevNet Associate, CyberOps Associate, Python, or Emerging Technologies Workshops

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
Cisco Certified Networking Professional

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Operating Systems & Information Technology

Get Connected

Course Overview

Get Connected students are introduced to the Internet and experiment with various social networking sites. Talking characters and devices make this course a user-friendly environment for an audience new to Information Technology (IT).

Benefits

The digital world is upon us both personally and professionally. Gain essential skills like basic computer skills, such as how to use a computer, connect devices, and access search, email, and social media.

Explore Opportunities in Technology

- ✓ Develop your digital basics
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and general audience new to IT

Estimated Time to Completion: 30 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 chapters
- ✓ Illustrations and narrations guide students through topics
- ✓ Interactive activities, videos, & quizzes

Course Recognitions: Certificate of Completion

Recommended Next Course:
IT Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IT Essentials

Course Overview

IT Essentials covers fundamental computer and career skills for entry-level IT jobs. Students apply skills and procedures to install, configure, and troubleshoot computers, mobile devices, and software.

Benefits

Learn the fundamentals of connecting computers to networks. Plus, you'll enjoy working with Cisco Networking Academy's advanced simulation tools with hands-on labs to hone your troubleshooting skills and immediately practice what you learn!

Prepare for Careers

- ✓ Develop skills for entry-level technical support roles
- ✓ Prepare for CompTIA A+ certification exam
- ✓ Build your foundation for CCNA-level courses

Course Details

Target Audience: Secondary and 2-year college vocational students

Estimated Time to Completion: 70 hours

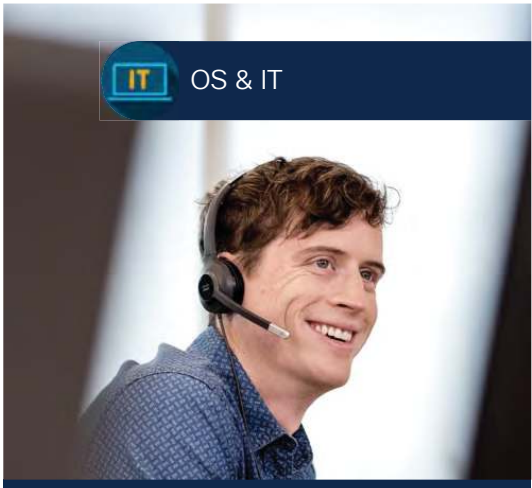
Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 14 chapters and 99 practice labs
- ✓ Cisco Packet Tracer, virtual laptop, and virtual desktop learning tools
- ✓ 29+ interactive activities
- ✓ 18+ assessments throughout the course
- ✓ 1 final and 2 practice certification exams

Course Recognitions: Certificate of Completion, Digital Badge, Letter of Merit

Recommended Next Course:
CCNA: Introduction to Networking (ITN)



Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Certification Aligned
CompTIA A+ Certification

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux Unhatched

Course Overview

This course covers introductory back-end operating system knowledge by teaching basic installation and configuration of Linux and introducing the Linux command line.

Benefits

Learners ease into acquiring Linux knowledge without having to commit to more than 8 total hours of self-paced learning, guided step-by-step with a series of hands-on virtual machine activities.

Explore Opportunities in Technology

- ✓ Wade into the shallow end of Linux and see whether it's for you or not
- ✓ Develop your digital basics
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and general audience new to IT

Estimated Time to Completion: 6-8 hours

Prerequisites: None

Course Delivery: Self-paced

Learning Component Highlights:
- ✓ 1 module
- ✓ 20 pages
- ✓ Built-in Linux machine with activities
- ✓ 1 assessment

Course Recognitions: Letter of Completion

Recommended Next Course:
NDG Linux Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux Essentials

Course Overview

This course teaches fundamentals of the Linux operating system, command line, and open source programming concepts.

Benefits

Nearly every IT job requires some Linux knowledge. Gain hands-on practice with Linux commands through the Linux virtual machine embedded in the course.

Prepare for Careers

- ✓ Develop fundamental operating system skills for entry-level IT jobs
- ✓ Prepare for LPI certificate exam
- ✓ Fulfill prerequisites to pursue more specialized IT and networking skills

Course Details

Target Audience: Secondary and 2-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 16 chapters and 13 practice labs
- ✓ Built-in virtual machine to experiment with Linux commands
- ✓ Learner-directed activities
- ✓ Chapter, midterm, and final exams

Course Recognitions: Letter of Completion

Recommended Next Course:
NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
Linux Professional Institute (LPI) Linux Essentials Professional Development Certificate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

NDG Linux I and II

Course Overview

A 2-course series for aspiring Linux system administrators. Covers performing maintenance tasks on the command line, installing and configuring a computer running Linux, and configuring basic networking, using virtual machines running Linux.

Benefits

More rigorous and comprehensive than NDG Linux Essentials, this course develops your Linux mastery. Gain hands-on practice with Linux commands through the Linux virtual machine embedded in the course

Prepare for Careers

- ✓ Develop skills for careers in cloud computing, cybersecurity, information systems, networking, programming, software development, big data, and more
- ✓ Prepare for LPIC-1 certification exams

Course Details

Target Audience: 2-year and 4-year college students

Estimated Time to Completion: 140 hours

Recommended Preparation: NDG Linux Essentials or equivalent

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ Built-in virtual machine to experiment with Linux commands
- ✓ Practice labs and activities
- ✓ Chapter, midterm, and final exams

Course Recognitions: Letter of Completion

Recommended Next Course:
DevNet Associate

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required: No**
- **Discount Availability:** Yes
- **Cost:** Fee for self-paced classes. Cost for instructor-led classes is determined by the institution.

Certification Aligned
Linux Professional Institute LPIC-1

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programming

PCAP: Programming Essentials in Python

Course Overview

Designed as easy to understand and beginner-friendly course focusing on various data collections, manipulation tools, logic and bit operations and creating basic REST APIs.

Benefits

Learn to design, write, debug, and run programs encoded in the Python language. No prior programming knowledge is required. The course begins with the very basics guiding you step by step until you become adept at solving more complex problems.

Prepare for Careers

- ✓ Develop fundamental programming skills
- ✓ Prepare for PCEP and PCAP certification exam
- ✓ Build your foundation to pursue more specialized networking and software development skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 60-70 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 modules of interactive instructional content
- ✓ 30+ practice labs
- ✓ Built-in online tool for labs and practice
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
DevNet Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
PCEP: Certified Entry-Level Python Programmer
PCAP: Certified Associate in Python Programming

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CLA: Programming Essentials in C

Course Overview

This beginner course introduces the the universal concepts of computer programming using the C language, and teaches the syntax, semantics, and data types of the C language.

Benefits

Build transferable skills. When you learn C, you develop overarching fundamentals for all programming languages. Practice your skills through hands-on labs and write your own programs!

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CLA certification exam
- ✓ Fulfill prerequisites to pursue more advanced programming skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 9 modules of interactive instructional content
- ✓ 80+ practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, CCNA, NDG Linux Essentials

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CLA: C Programming Language Certified Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CLP: Advanced Programming in C

Course Overview

This advanced course teaches intermediate to advanced coding such as C handling variable number of parameters (<stdarg.h>), low level IO (<unistd.h>), memory and strings (<string.h> et al.), processes and threads, floats and ints (<math.h>, <fenv.h>, <inttypes.h> et al), and network sockets.

Benefits

Extend your programming knowledge and proficiency. Learn to think harder and deeper about programming concepts.

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CLP certification exam
- ✓ Set yourself up to succeed in jobs related to software development, network engineering, and system administration

Course Details

Target Audience: 2-year and 4-year college and university students

Estimated Time to Completion: 70 hours

Prerequisites: CLA: Programming Essentials in C course, CLA certification, or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules of interactive instructional content
- ✓ 18 practice labs
- ✓ Quizzes, chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CLP: C Certified Professional Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CPA: Programming Essentials in C++

Course Overview

This beginner course introduces the basics of programming in the C++ language and the fundamental notions and techniques used in object-oriented programming.

Benefits

Build transferable skills. When you learn C, you develop overarching fundamentals for all programming languages. Practice your skills through hands-on labs and write your own programs!

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CPA certification exam
- ✓ Fulfill prerequisites to pursue more advanced programming skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules of interactive instructional content
- ✓ 100+ practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
Internet of Things (IoT) Fundamentals, NDG Linux Essentials, DevNet Associate

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes

Certification Aligned
CPA: C++ Certified Associate Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CPP: Advanced Programming in C++

Course Overview

This advanced course teaches intermediate to advanced coding such as C++ template mechanism, understanding and using property template classes and methods, and the C++ STL library including solving common programming problems and the IO part.

Benefits

Extend your programming knowledge and proficiency. Learn to think harder and deeper about programming concepts.

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CPP certification exam
- ✓ Set yourself up to succeed in jobs related to software development, network engineering, and system administration

Course Details

Target Audience: 2-year and 4-year college and university students

Estimated Time to Completion: 70 hours

Prerequisites: CPA: Programming Essentials in C++ course, CPA certification, or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 9 modules of interactive instructional content
- ✓ 65 practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
CCNP Enterprise, NDG Linux I

In partnership with NDG

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Certification Aligned
CPP: C++ Certified Professional Programmer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programmable Infrastructure

Internet of Things

Introduction to Internet of Things (IoT)

Course Overview

An introduction to the Internet of Things and how it enables Digital Transformation along with emerging technologies such as data analytics, artificial intelligence, and cybersecurity.

The course also highlights the importance of Intent-Based Networking using a software-driven approach and machine learning to be able to connect and secure tens of billions of new devices with ease.

Benefits

Gain a comprehensive view of how emerging technologies are shaping the digital business.

Explore Opportunities in Technology

- ✓ Develop your digital basics
- ✓ Explore the career opportunities in this new emerging technologies landscape

Course Details

Target Audience: Secondary, vocational, 2-year college, and general audience

Estimated Time to Completion: 20 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 6 chapters
- ✓ 17 practice labs (plus 4 optional labs)
- ✓ 7 Cisco Packet Tracer activities
- ✓ 40+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Insertion Points:
A great start for any learning path, and way to introduce the digital transformation before or during any Career course

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
  (Optional labs require additional hardware)
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Fundamentals: Connecting Things

Course Overview

This highly hands-on course introduces how to securely interconnect sensors, actuators, microcontrollers, single-board computers, and cloud services over Internet Protocol (IP) networks to create an end-to-end IoT system.

Benefits

Develop the interdisciplinary skillset required to prototype an IoT solution for a specific business case with a strong focus on the security considerations for emerging technologies.

Prepare for Careers

- ✓ Develop an entrepreneurial and design-thinking foundation for IoT job families that exist today and in the future
- ✓ Practice integrating hardware, software, data analytics, and security concepts
- ✓ Build your foundation to pursue more specialized networking, software development, and IoT skills

Course Details

Target Audience: Secondary, vocational, 2-year and 4-year college, 4-year university students

Estimated Time to Completion: 40-50 hours

Prerequisites: Basic programming, networking, and electronics

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 35 practice labs
- ✓ 9 Cisco Packet Tracer activities
- ✓ 32+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
IoT Fundamentals: Big Data & Analytics or Hackathon Playbook (Design Thinking)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Fundamentals: Big Data & Analytics

Course Overview

This highly hands-on course introduces how to use Python data libraries to create a pipeline to acquire, transform and visualize data collected from IoT sensors and machines.

Benefits

The transformative element of any IoT system is the data that can be collected from it. The ability to extract data and using data analytics techniques to gain insights are skills highly-valued by employers.

Prepare for Careers

- ✓ Develop entrepreneurial and design-thinking skills for IoT job families that exist today and in the future
- ✓ Practice integrating hardware, software, data analytics, and security concepts
- ✓ Build your foundation to pursue more specialized networking, software development, and IoT skills

Course Details

Target Audience: 2-year and 4-year college, 4-year university students

Estimated Time to Completion: 40-50 hours

Prerequisites: IoT Fundamentals: Connecting Things

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 11 practice labs
- ✓ 18 Jupyter Notebooks (with Python code)
- ✓ 35+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
IoT Fundamentals: Hackathon Playbook

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Hackathon Playbook (Design Thinking)

Course Overview

The Hackathon Playbook is a comprehensive framework of tools and templates to prepare and run a Hackathon as a result of best practices and lessons-learned collected from the global execution of IoT Hackathons within Networking Academy and by other organizers.

Benefits

Practice design thinking through a hands-on project. Deepen your multidisciplinary IoT and data skills by defining, designing, prototyping, and presenting an IoT solution to a panel of industry experts and peers.

Prepare for Careers

- ✓ Build a design thinking mindset
- ✓ Gain resume-worthy experience working on a real prototype
- ✓ Get feedback and mentorship from industry experts

Course Details

Target Audience: Secondary, vocational, 2-year and 4-year college, 4-Year university students

Estimated Time to Completion: 20-30 hours

Prerequisites: IoT Fundamentals: Connecting Things and/or Big Data and Analytics

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ Hands-on project

Course Recognitions: Certificate of Completion

Recommended Next Course:
Any Networking Academy Career course, or an industry IoT training program

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
  (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Prototyping Lab

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Programmable Infrastructure

Infrastructure Automation

DevNet Associate

Course Overview

This course introduces the methodologies and tools of modern software development, applied to the IT and Network operations. It covers a 360 view of the domain including microservices, testing, containers and DevOps, as well as securely automating infrastructures with Application Programming Interfaces (APIs).

Benefits

Gain practical, relevant, hands-on lab experience, including programming in Python, using GIT and common data formats (JSON, XML and YAML), deploying applications as containers, using Continuous Integration/Continuous Deployment (CI/CD) pipelines, and automating infrastructure using code.

Prepare for Careers

- ✓ Develop skills for entry-level software development and infrastructure automation jobs
- ✓ Prepare for DevNet Associate certification exam

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students and participants of coding bootcamps

Estimated Time to Completion: 70 hours

Recommended Preparation:
Object-oriented coding skills, equivalent to:
PCAP: Programming Essentials in Python
Fundamental skills of networking, equivalent to:
CCNA: Introduction to Networks

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 8 modules and 23 practice labs
- ✓ 5 Cisco Packet Tracer activities
- ✓ 6 videos, 8 quizzes, 8 module exams
- ✓ 1 final exam, 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course: CCNA, CCNP Enterprise, or CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** No (Uses Virtual Machines on the student's computer)
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified DevNet Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Experimenting with REST APIs using Webex Teams

Course Overview

This workshop introduces the basic competencies needed to create applications and automate tasks using REST APIs, the most popular architecture for software integration in IT.

Benefits

Learn the value of the REST APIs architecture, practice Python programming skills, and perform basic software integration and automation using real-world APIs on an enterprise collaboration platform (Webex Teams).

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-Year University students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 9 practice labs
- ✓ 13 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Insertion Points:
PCAP Programming Essentials in Python, IoT Fundamentals: Connecting Things

Other Insertion Points:
IT Essentials, CCNA: Introduction to Networks

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Network Programmability with Cisco APIC-EM

Course Overview

This workshop introduces the basic competencies to operate and automate management tasks on a controller-based network.

Benefits

Understand the value of network programmability. Use the Cisco DevNet Sandbox to learn how to interact with programmable devices using real-world Application Programming Interfaces (APIs) on Cisco APIC-EM programmable controllers.

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-year University students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming, CCNA: Switching, Routing, and Wireless Essentials (SRWE) or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 5 practice labs
- ✓ 13 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Insertion Points:
- After CCNA: SRWE
- With CCNA Security or CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Workshop: Model-Driven Programmability

Course Overview

This workshop introduces students to device level programmability. By defining standardized device models and APIs, network device configuration and management tasks can be automated, making it easier to manage network devices at scale.

Benefits

Learn key model-driven programmability concepts: YANG to model networking devices, RESTCONF and NETCONF for device-level APIs, and Python scripting to programmatically retrieve and update device configurations.

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-year university students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming, CCNA: Switching, Routing, and Wireless Essentials (SRWE) or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 2 chapters and 10 practice labs
- ✓ 10 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Insertion Points:
- After CCNA: SRWE
- With CCNA Security or CCNP Enterprise: Core Networking (ENCOR)

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

DevNet Sandbox
Practice running code on live network infrastructure

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Cybersecurity

Introduction to Cybersecurity

Course Overview

This course explores cyber trends, threats, and staying safe in cyberspace, and protecting personal and company data.

Benefits

Today's interconnected world makes everyone more susceptible to cyber-attacks. Learn how to protect your personal data and privacy online and in social media, and why more and more IT jobs require cybersecurity awareness and understanding.

Explore Opportunities in Technology

- ✓ Explore the world of cybersecurity and how it relates to YOU
- ✓ Develop your cybersecurity basics for a secure and safe digital life
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and 2-Year college students, general audience

Estimated Time to Completion: 15 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 5 modules and 7 practice labs
- ✓ Interactive activities & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: Cybersecurity Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Career Advice
Tips for getting started in your career

Cybersecurity Essentials

Course Overview

This course covers essential knowledge for all cybersecurity domains including information security, systems security, network security, ethics and laws, and defense and mitigation techniques used in protecting businesses

Benefits

The demand for security professionals continues to grow. Develop a foundational understanding of cybercrime, security principles, technologies, and procedures used to defend networks.

Explore Opportunities in Technology

- ✓ Build your cybersecurity foundation
- ✓ Take the next step in exploring the many career possibilities in cybersecurity
- ✓ See if you want to pursue job roles in networking or cybersecurity

Course Details

Target Audience: Secondary and 2-year college vocational students

Estimated Time to Completion: 30 hours

Prerequisites: Introduction to Cybersecurity

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 8 chapters and 12 practice labs
- ✓ 10 Cisco Packet Tracer activities
- ✓ 40+ interactive activities & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CyberOps Associate

Course Overview

This course introduces the core security concepts and skills needed to monitor, detect, analyze, and respond to cybercrime, cyberespionage, insider threats, advanced persistent threats, regulatory requirements, and other cybersecurity issues facing organizations.

Benefits

Gain practical, hands-on skills needed to maintain and ensure security operational readiness of secure networked systems.

Prepare for Careers

- ✓ Develop skills for entry-level security operations center (SOC) jobs
- ✓ Prepare for CyberOps Associate certification
- ✓ Pursue a career in cybersecurity operations, a rapidly-growing, exciting new area that spans all industries

Course Details

Target Audience: Students enrolled in technology degree programs at higher education institutions; IT professionals who wants to pursue a career in Security Operations

Estimated Time to Completion: 70 hours

Recommended Preparation: Introduction to Cybersecurity, Cybersecurity Essentials

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 28 chapters and 46+ practice labs
- ✓ 6 Cisco Packet Tracer activities
- ✓ 113 interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course: CCNA Security, IoT Security

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** No (Uses Virtual Machines on the student's computer)
- **Discount Availability:** Yes

Certification Aligned
Cisco Certified CyberOps Associate

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

CCNA Security

Course Overview

This course introduces the core security concepts and skills needed to troubleshoot and monitor computer networks and help ensure the integrity of devices and data.

Benefits

Gain practical, hands-on skills to design, implement, and manage network security systems and ensure their integrity.

Prepare for Careers

- ✓ Build expertise in network security and data protection
- ✓ Develop skills for entry-level network security specialist roles
- ✓ Gain industry in-demand skills aligned with the National Institute for Standards and Technology (NIST) Cybersecurity Framework

Course Details

Target Audience: 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: CCNA: Switching, Routing, and Wireless Essentials (or equivalent)

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 11 chapters and 16 practice labs
- ✓ 13 Cisco Packet Tracer activities
- ✓ 65+ interactive activities, quizzes, chapter exams, and skills assessments
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit

Recommended Next Course: CyberOps Associate, IoT Security

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

IoT Security

Course Overview

The explosive growth of connected IoT devices also increases the exposure to security threats. Learn to perform vulnerability and risk assessments, and research and recommend risk mitigation strategies for common security threats in IoT systems.

Benefits

Learn practical tools for evaluating security vulnerabilities, perform threat modeling, and recommend threat mitigation measures. Gain hands-on, transferable skills relevant across IoT and other network architectures.

Prepare for Careers

- ✓ Develop skills for entry-level roles in the rapidly growing IoT and security domains
- ✓ Increase awareness of emerging technologies in the IoT Security space, such as Blockchain

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-Year University students

Estimated Time to Completion: 50 hours

Prerequisites:
- IoT Fundamentals: Connecting Things
- Networking Essentials and Cybersecurity Essentials (or equivalent)

Course Delivery: Instructor-led

Learning Component Highlights:
- ✓ 6 chapters and 24 practice labs
- ✓ 5 Cisco Packet Tracer activities
- ✓ 50+ interactive activities, videos, & quizzes
- ✓ 1 hands-on capstone activity
- ✓ 1 IoT Security game with 10 missions
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
CCNA Security or CyberOps Associate

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** Yes
- **Discount Availability:** Yes

Features the IoT Security Game!

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Additional Courses

Entrepreneurship

Course Overview

This course teaches business and financial skills, behaviors, and attitudes, to help students develop an entrepreneurial mindset. Students learn by completing a series of interactive case studies that present realistic scenarios.

Benefits

Supplement your technical expertise with with entrepreneurial thinking, business development, and financial management skills.

Explore Opportunities in Technology

- ✓ Explore how to think like an entrepreneur
- ✓ Expand your mindset and employability with skills complementary to IT expertise
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: General audience

Estimated Time to Completion: 15 hours

Recommended Preparation:
CCNA: Introduction to Networks

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 7 modules with interactive, online case studies

Course Recognitions: Certificate of Completion

Recommended Next Course:
Hackathon Playbook (Design Thinking)

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Career Advice
Tips for getting started in your career

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Practice

Hands-on tools & interactive experiences
to build skills, not just knowledge

Hands-On Practice

A key pillar of Networking Academy

- Motivate your students with exciting experiences that make learning very real
- Accelerate and optimize each student's path to career-ready skills
- Build student confidence: "I can do this!"
- Developed by learning scientists & subject-matter experts

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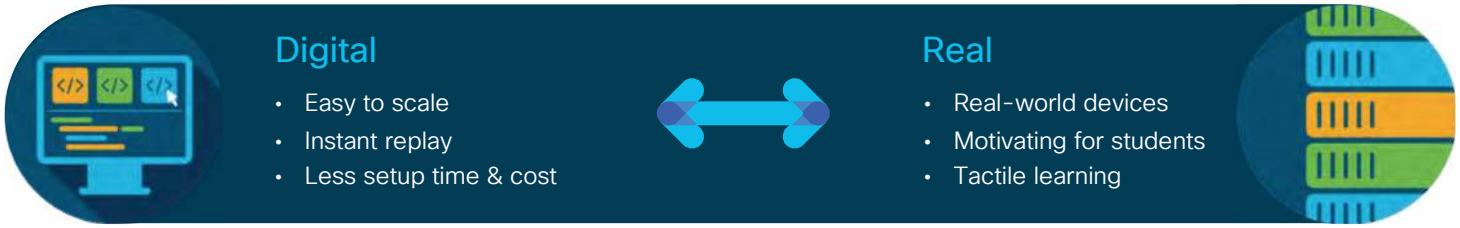
A Suite of Lab Environments

Options ranging from simulation to physical hardware



Simulation with Packet Tracer

Virtualized Equipment

Virtual Machines

Prototyping Lab

Remote Equipment

Physical Hardware

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Packet Tracer

Overview

Cisco Packet Tracer is a powerful simulation and visualization learning environment. Practice building simple and complex networks across a variety of devices and extend beyond routers and switches.

Benefits

Teach complex concepts without complex hardware. Leverage the versatility of simulation for lectures, labs, games, homework, assessments, and competitions.

Build Skills for Success

- ✓ Quickly try, experiment, learn, repeat
- ✓ Practice teamwork, critical thinking and creative problem solving skills
- ✓ Integration with online assessment engine prepares students for hands-on assessments

Details

Use it to:

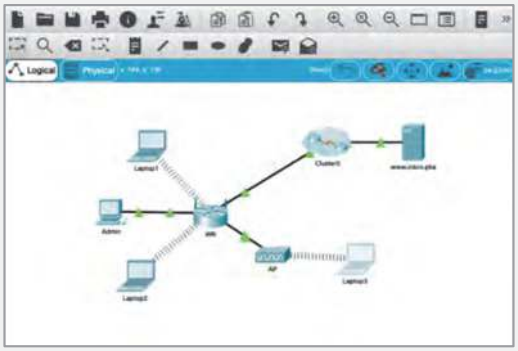
- Visualize networks using everyday examples
- Build your own simulated networks
- Investigate and troubleshoot network functionality using simulation mode
- Practice configuring network and IoT devices

How to Access:
Enroll in Intro to Packet Tracer course to download desktop version

Courses that use Packet Tracer include:

- Networking Essentials
- Cybersecurity Essentials
- IT Essentials
- Introduction to Internet of Things (IoT)
- CCNA
- CCNP Enterprise
- CCNA Security
- CyberOps Associate

Practice



Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Quick Links

Packet Tracer Landing Page

Introduction to Packet Tracer Course Page

Teaching with Packet Tracer

Introduction to Packet Tracer

Course Overview

The Introduction to Packet Tracer series is designed for new users of Packet Tracer for self-study and familiarization with the tool used in many Networking Academy courses. Packet Tracer courses are available for the desktop and for mobile (Android and iOS).

Benefits

The Introduction to Packet Tracer series introduces tips and best practices to help instructors and students use Cisco Packet Tracer as an effective and engaging learning and assessment tool.

Explore Opportunities in Technology

- ✓ Learn the power of simulation tools to build and investigate networks in software
- ✓ Get familiar using Cisco Packet Tracer, a key learning tool you will use in NetAcad courses

Course Details

Target Audience: General audience

Estimated Time to Completion: 10 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
- ✓ 8 chapters with instructional videos
- ✓ 13 Cisco Packet Tracer activities
- ✓ Sample files
- ✓ 2 quizzes

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: Networking Essentials

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Not Applicable

Hands-on practice with Cisco Packet Tracer

Quick Links

Course Page

Course Demos
(Available for select courses)

List of All Courses
(Includes language availability)

Virtual Machines (VM)

Overview

Virtual machines are virtual environments that emulate a computer system. These self-contained virtual environments let students explore systems to the breaking point without causing actual damage.

Benefits

Experiment and explore in a low-risk environment. Deliberately test security threats and malware in a safe environment.

Build Skills for Success

- ✓ Hands-on cybersecurity practice
- ✓ Students become familiar with virtual machines to prepare for on-the-job skills

Details

Use it to:

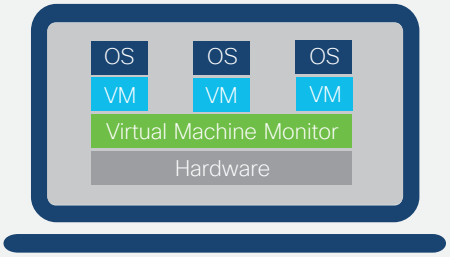
- Teach virtual machine technology
- Simulate real-world cybersecurity threat scenarios
- Create opportunities for ethical hacking, security monitoring, analysis, and resolution

How to Access:
Free software download from Oracle VirtualBox
https://www.oracle.com/virtualization/technologies/vm/downloads/virtualbox-downloads.html

Courses that use Virtual Machines include:

- CCNA
- CyberOps Associate
- Emerging Technologies Workshop: Model-Driven Programmability
- DevNet Associate

Practice



Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Prototyping Lab (PL App)

Overview

Dive into the world of sensors and connected things. The Prototyping Lab Kit uses a Raspberry Pi and Arduino setup to create an end-to-end IoT system on a lab table.

Benefits

Lab setup is easy with low-cost hardware and app download. Use real devices & code to collect, analyze, and present data from the physical world.

Build Skills for Success

- ✓ Spark entrepreneurial and systems thinking
- ✓ Students gain hands-on experience with an entire IoT system
- ✓ Build programming skills with Blockly visual programming or coding in Python

Details

Use it to:

- Acquire physical data with Arduino
- Collect and analyze data on Raspberry Pi
- Visualize data with Jupyter Notebook
- Connect to cloud applications with REST APIs

How to Access:

Prototyping Lab is comprised of the Prototyping Lab Kit (hardware) and Prototyping Lab App (software).

Find the hardware list and software download links on the Resources page: https://www.netacad.com/portal/resources/course-resources/cisco-prototyping-lab-resources

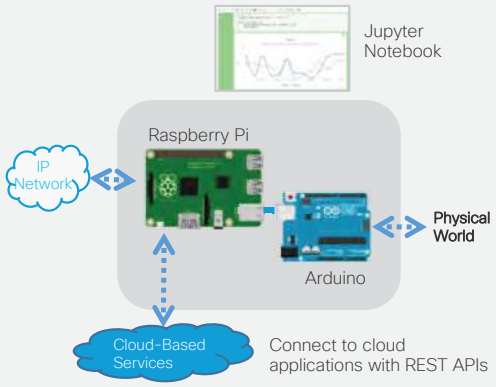
Courses that use Prototyping Lab include:

- IoT Fundamentals: Connecting Things
- IoT Fundamentals: Big Data & Analytics
- Hackathon Playbook (Design Thinking)
- IoT Security

Prototyping Lab Kit includes:

- Raspberry Pi 3 CanaKit Ultimate Starter Kit (or equivalent)
- Cables, sensors, and actuators
- SparkFun Inventor's Kit for Arduino v3.2 (or equivalent)
- Prototyping Lab App

Practice



Requirements & Resources

- **Cost:** Yes (for hardware); Free software download

Hands-on tools & interactive experiences to build skills, not just knowledge

Remote Equipment: NDG NETLAB+

Overview

Connect to real hardware through the web. Available through Networking Academy partnerships:

NDG NETLAB+ provides cloud-based, remote access to networking equipment and PCs.

Benefits

Reduce your setup time for complex labs with on-demand remote access to lab equipment when you need it.

Build Skills for Success

- ✓ Provide practice opportunities for students to complete labs from anywhere
- ✓ Supplement your lab offerings when physical hardware is not available at your institution

Details

Use it to:

- Access remote IT equipment through a web browser
- Reduce your lab setup time

How to Access:

Learn more at the NDG NETLAB+ page for Networking Academy.
https://www.netdevgroup.com/content/cnap/

Courses that use Remote Equipment include:

- CCNA
- CCNP Enterprise
- IT Essentials
- CyberOps Associate
- CCNA Security

Practice

In partnership with

NDG NETLAB+

Requirements & Resources

- **Cost:** Yes

Hands-on tools & interactive experiences to build skills, not just knowledge

Remote Equipment: DevNet Sandbox

Overview

Connect to real hardware through the web. Available through Networking Academy partnerships:

Cisco DevNet Sandbox offers packaged labs for software development, testing APIs, training, hackathons, and more.

Benefits

Reduce your setup time for complex labs with on-demand remote access to lab equipment when you need it.

Build Skills for Success

- ✓ Students get experience running their code against live network infrastructure
- ✓ Practice working in a sandbox environment just like on-the-job software developers

Details

Use it to:

- Interact with live network infrastructure and programmable devices using real-world Application Programming Interfaces (APIs)

How to Access:

Learn more at the Cisco DevNet Sandbox page https://developer.cisco.com/site/sandbox/

Courses that use Remote Equipment include:

- Workshop: Experimenting with REST APIs
- Workshop: Network Programmability
- Workshop: Model-Driven Programmability
- DevNet Associate

Practice

DEVNET DevNet Sandbox

Requirements & Resources

- **Cost:** Free

Hands-on tools & interactive experiences to build skills, not just knowledge

Physical Hardware

Overview

Bring the real world inside the classroom so students can practice physical, sensory skills. Seeing and exploring with real equipment makes the abstract more tangible.

Benefits

Excite learners to consider career pathways in networking technology, and increase retention through tactile learning.

Build Skills for Success

- ✓ Provide hands-on practice with the same devices found in the work environment
- ✓ Students gain real experience even before on-the-job training
- ✓ Build transferable, career-ready skills

Details

How to Access:

1. Contact a local Cisco Reseller Partner for pricing and order fulfillment. Use Partner Finder to find one near you.
2. Consider working with an Academy Support Center (ASC) who can help you choose the best way to secure equipment needed for your location. They may offer loaner equipment or used equipment options

Courses that use Physical Hardware include:

- Networking Essentials
- IT Essentials
- CCNA
- CCNP Enterprise
- CCNA Security
- IoT Security

Requirements & Resources

- **Cost:** Yes

Discounts

Equipment discounts are available for Networking Academy institutions. Available for Cisco equipment needed for Networking Academy courses and labs when purchased through a Cisco Reseller Partner.

Hands-on tools & interactive experiences to build skills, not just knowledge

Language Availability

October 2020

Explore Course Languages

Explore	Arabic	Chinese-Simplified	Chinese-Traditional	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hindi	Hungarian	Indonesian	Italian	Japanese	Kazakh	Korean	Polish	Portuguese-Brazil	Portuguese-Portugal	Romanian	Russian	Spanish	Turkish	Ukrainian
Cybersecurity Essentials		✓				✓	✓		✓						✓				✓			✓	✓		✓
Entrepreneurship	✓	✓	✓			✓	✓			✓				✓					✓				✓		
Get Connected		✓	✓			✓	✓		✓		✓			✓					✓	✓			✓		
Introduction to Cybersecurity	✓	✓			✓	✓	✓		✓	✓			✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Introduction to IoT / Introduction to IoE	✓	✓	✓		✓	✓	✓		✓	✓				✓	✓	✓		✓	✓			✓	✓		✓
Introduction to Packet Tracer						✓																			✓
Networking Essentials 1.0	✓	✓				✓	✓		✓						✓				✓			✓	✓		
NDG Linux Unhatched						✓	✓		✓					✓									✓		

Career Course Languages

October 2020

Career	Arabic	Chinese-Simplified	Chinese-Traditional	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hindi	Hungarian	Indonesian	Italian	Japanese	Kazakh	Korean	Polish	Portuguese-Brazil	Portuguese-Portugal	Romanian	Russian	Spanish	Turkish	Ukrainian
CCNA Cybersecurity Operations		✓	✓			✓	✓								✓							✓	✓		
CCNA R&S: Connecting Networks	✓	✓		✓		✓	✓					✓			✓			✓	✓			✓	✓	✓	
CCNA R&S: Introduction to Networks	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓		✓	✓			✓	✓		✓	✓	✓	✓	
CCNA R&S: Routing and Switching Essentials	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓			✓			✓	✓		✓	✓	✓	✓	
CCNA R&S: Scaling Networks	✓	✓		✓		✓	✓					✓			✓			✓	✓			✓	✓	✓	
CCNA Security		✓				✓																✓			
CCNA: Enterprise Networking, Security, and Automation	✓	✓				✓	✓												✓			✓	✓		
CCNA: Introduction to Networks	✓	✓				✓	✓		✓									✓	✓			✓	✓		✓
CCNA: Switching, Routing, and Wireless Essentials	✓	✓				✓	✓												✓			✓	✓		
CCNP Enterprise: Advanced Routing						✓																			
CCNP Enterprise: Core Networking						✓																			
CyberOps Associate						✓																			
DevNet Associate						✓																			
Emerging Technologies Workshop - Experimenting with REST APIs using Webex Teams						✓																			
Emerging Technologies Workshop - Model Driven Programmability						✓																			
Emerging Technologies Workshop - Network Programmability with Cisco APIC-EM						✓																			
IoT Fundamentals: Big Data & Analytics		✓				✓	✓																✓		
IoT Fundamentals: Connecting Things		✓				✓	✓		✓														✓		✓
IoT Fundamentals: Hackathon Playbook						✓																	✓		✓
IoT Fundamentals: IoT Security		✓				✓																			
IT Essentials	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓		✓	✓		✓	✓	✓	✓	✓
Networking Essentials 2.0						✓																			
NDG Linux Essentials						✓																	✓		
PCAP - Programming Essentials in Python						✓												✓					✓		

October 2020

Complementary Offerings Languages

Complementary	Arabic	Chinese-S	Chinese-T	Croatian	Dutch	English	French	Georgian	German	Hebrew	Hungarian	Italian	Japan.	Kazakh	Korean	Polish	Portuguese	Romanian	Russian	Spanish	Turkish	Ukrainian
NDG Linux I and II						✓																
CLA: Programming Essentials in C						✓																
CLP: Advanced Programming in C						✓																
CPA: Programming Essentials in C++						✓																
CPP: Advanced Programming in C++						✓																

Quick Links

- Networking Academy Website – netacad.com
- Networking Academy Program Overview
- Helpful Program Resources, including NetAcad Program FAQ
- Course Demos (available for select courses)
- Cisco Interactive Course Pathways
- Employment Opportunities (Talent Bridge)
- Remote Teaching & Learning – Tools and Tips