Cisco Certified Network Associate (CCNA)

LEARN

CERTIFY

ENGAGE

COMPETE

CCNA PROFESSIONALS

NETWORK ANALYST

NETWORK ADMINISTRATOR

CLOUD ENGINEER

CYBER SECURITY ENGINEER

Course Outline:
Module 01: Network Fundamentals
Module 02: Network Access
Module 03: IP Connectivity
Module 04: IP Services
Module 05: Security Fundamentals
Module 06: Automation and Programmability

Module 07: Network Troubleshooting
Details:
Module 01:
foundation and Concepts
Networking Fundamentals
Network Devices and Components
Data transmission
Module 02
Network Access

Switching Concepts

VLANs (Virtual Local Area Networks)

Spanning Tree Protocol (STP)

Module 03
IP Connectivity

Routing Concepts

IP Routing

IPv4 and IPv6 Addressing

Module 04
IP Services
DHCP (Dynamic Host Configuration Protocol)

NAT (Network Address Translation)

Network Time Protocol (NTP)

DNS (Domain Name System)

Monthly Practical Task 01

At the end of Month 1, take a comprehensive practice test covering all the topics studied so far. Evaluate your performance and identify weak areas for further study.

Module 05
Security Fundamentals
Network Security Concepts

Secure Network Devices

Firewall and VPN Concepts

Module 06
Automation and Programmability
Network Automation Concepts

APIs and Protocols

Automation Tools

Module 07

Network Troubleshooting
Trouble shooting Methodologies

Troubleshooting IP Connectivity

Trouble shooting Security Issues

Monthly Practical Task 02
At the end of Month 2, take another comprehensive practice test that covers all topics studied during the second month. Evaluate your progress and areas that still need improvement.

Contact Information
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Artificial Intelligence:
COURSE OUTLINE

Module 01

Introduction to AI and machine learning

Module 02

Basic algorithms (classification and regression)

Module 03

Model selection and evaluation

Module 04

Deep learning Introduction, Tools and techniques

Module 05

Transfer learning

Module 06

Attention mechanism and transformer models.

Module 07

Object detection & Object segmentation

Module 08

Hyper parameter Tuning

Module 09

Generative adversarial networks

Module 10

Natural language processing

Module 11

Techniques

Module 12

Transfem learning

Module 13

Transfer Learning

Module 14

Transfer learning

Module 15

Attention mechanism and transformer models.

Module 16

Vision Transformers

Module 17

Object detection

Module18

One Stage Object Detection

Module 19

Zero shot object detection

Module20

Object Counting

Module 21

Generative adversarial networks

Module 22

Natural Language Processing

Module 23

Tools

Module 24

Techniques

Module 25

Data Augmentation

Module26

Final Assessment and Certification

Module 01

Definition of machine learning

Applications of machine learning

Introduction to AI and machine learning

Types of machine learning

Module 02

Tools

NumPy

PyCaret

Pandas

scikit-learn

Matplotlib

Seaborn

Module 03

Data Preprocessing

Importing and exporting data

Cleaning and formatting data

Handling missing values Matplotlib

Feature scaling

Module 04

Regression

Exploratory Data Analysis

Data visualization

Descriptive statistics

Correlation analysis

Module 05

Simple linear regression

Multiple linear regression

Polynomial regression

Preprocessing data with scikit-learn

Support vector regression

Decision tree regression

Random forest regression

Module 06

Classification

K-nearest neighbors (KNN)

Logistic regression

Support vector machine (SVM)

Decision tree classification

Random forest classification

Module 07

Training and test sets

K-fold cross-validation

Performance metrics (e.g. accuracy, precision, recall) Model Selection and Evaluation

Module 08

Hyper parameter Tuning

Grid search

Random search

Bayesian optimization

Module 09

Ensemble Learning

Bagging

Boosting

Stacking

Module 10

Deep learning Introduction, Tools and techniques

Deep Learning

Example of Deep Learning

Architectures

Types of Deep Learning Networks

Deep learning applications

Deep Learning Algorithms

Importance of Deep Learning

Artificial neural networks

Convolutional neural networks (CNN)

Module 11

Techniques

ANN

Shallow nets

Deep nets

Module 12

Transfer learning

VGG16

VGG19

ResNet-50

ResNet-101

ResNet-152

Inception

InceptionV3

InceptionResNetV2

Module 13

Transfer learning

DenseNet-121

DenseNet-169

DenseNet201

MobileNetV1

MobileNetV2

MobileNetV3

EfficientNetV2B0

EfficientNetV2B1

EfficientNetV2B2

Module 14

Transfer learning

EfficientNetV2B3

ConvNeXtTiny

ConvNeXtSmall

ConvNeXtBase

ConvNeXtLarge

Module 15

Attention mechanism and transformer models.

Attention mechanism.

Spatial attention

Self-attention

Module 16

Vision Transformers

ViT-B/16

ViT-B/32

DeiT

BoTNet

Module 17

Object detection

Selective search algorithm Region Proposal algorithm

Two stage object detection

RCNN

Faster RCNN

Module 18

One Stage Object Detection

SSD

Yolov3

Yolov4

Yolov5

Yolov7

Yolov8

DETR

Detectron

Module 19

Zero shot object detection

Object tracking

DeepSORT

Object Counting

Module 20

Object Counting

Semantic segmentation

Instance segmentation

Unet

YoloSeg

MaskRCNN

DeepLabV3+

SOLO

Swin Tranformer

Module 21

Generative adversarial networks

AutoEncoders

2DTransposeConvolution

DeepFakes

Conditional GANs

Style GANS

Inpainting

Drag GANs

Image to Image Translation

Module 22

Natural Language Processing

What is NLP?

History of NLP

Advantages of NLP Disadvantages of NLP

Components of NLP

Applications of NLP

Text preprocessing

Feature extraction

Module 23

Tools

NLTK

SpaCy

Gensim

Hugging Face Transformer

Module 24

Techniques

Text Classification

Conditional Random Fields

Recurrent Neural Networks (RNN)

1D CNN

Transformer

Word2Vec

Seq2Seq

Sentiment analysis

Module 25

Data Augmentation

Synonym Replacement

Random Insertion

Random Deletion

Random Swap

Random Rotation

Back-Translation

Module 26

Final Assessment and Certification

Students will be evaluated on the basis of final assessment and awarded certifications

CISCO CERTIFIED NETWORK PROFESSIONAL (CCNP)

CCNP PROFESSIONALS

NETWORK ADMINISTRATOR

CLOUD ENGINEER

NETWORK ANALYST

CYBER SECURITY ENGINEER

SYSTEM ADMINISTRATOR

TELECOM ENGINEER

Course Outline

Module 01

Networking Basics and Architecture

Module 02

Virtualization and Network Services

Module 03

Infrastructure and Layer 2 Switching

Module 04

Layer 3 Routing and High Availability

Module 05

VPNs and Firewalls

Module 06

Wireless Networking, Design, and Troubleshooting

Module 01

Foundations & Core Concepts

Networking Basics and Architecture

Introduction to Networking Concepts

Enterprise Campus Architecture

Enterprise WAN Architecture

Module 02

Virtualization and Network Services

Virtualization Technologies

Network Virtualization and VRFs

DHCP, IP Addressing, NAT

Module 03

Infrastructure and Layer 2 Switching

Layer 2 Switching, VLANs

Spanning Tree Protocol (STP)

Wireless LANs (WLANs)

Module 04

Layer 3 Routing & High Availability

OSPF and EIGRP

BGP

HSRP, VRRP, and GLBP-

Span and RSPAN

Inter VLan Routing

Implementation of IPv6

MP-BGP

Monthly Practical Task 01

At the end of Month 1, take a comprehensive practice test covering all the topics studied so far. Evaluate your performance and identify weak areas for further study.

Module 05

Security, Automation, & Troubleshooting

VPNs and Firewalls

Site-to-Site VPNs and Remote Access VPNs

Cisco ASA and Firepower NGFWs

Security Policies and NAT

Module 06

Wireless Networking, Design, and Troubleshooting

Wireless Components and WLANs

WLAN Design and Security

Troubleshooting Methodologies and Tools

Monthly Practical Task 02

At the end of Month 2, take another comprehensive practice test that covers all topics studied during the second month. Evaluate your progress and areas that still need improvement.

Computer Hacking Forensic Investigator (CHFI)

Overview of CHFI

CHFI, short for Computer Hacking Forensic Investigator, course delivers the security discipline of digital forensics from a vendor-neutral perspective.

CHFI is a comprehensive course covering major forensic investigation scenarios and the course enables students to acquire necessary hands-on experience with various forensic investigation techniques and standard forensic tools necessary to successfully carry out a computer forensic investigation leading to prosecution of perpetrators.

CHFI certification will give participates (Law enforcement personnel, system administrators, security officers, defense and military personnel, legal professionals, bankers, security professionals, and anyone who is concerned about the integrity of the network infrastructure) the necessary skills to perform an effective digital forensics investigation.

CHFI presents a methodological approach to computer forensics including searching and seizing, chain-of-custody, acquisition, preservation, analysis and reporting of digital evidence.

Target Audience

The CHFI program is designed for all IT professionals involved with information system security, computer forensics, and incident response.

Police and other law enforcement personnel

Defense and Military personnel

e-Business Security professionals

Systems administrators

Legal professionals

Banking, Insurance and other professionals

Government agencies

IT managers

Course Outlines

Computer Forensics in Today's World

Computer Forensics Investigation Process

Understanding Hard Disks and File Systems

Operating System Forensics

Defeating Anti- Forensics Techniques

Data Acquisition and Duplication

Network Forensics

Investigating Web Attacks

Database Forensics

Malware Forensics

Investigating Email Crimes

Mobile Forensics

Investigative Reports

COMPUTER VISION (CV)

COURSE OUTLINE

Module 01

Introduction to Computer Vision

Module 02

Image Processing Fundamentals

Module 03

Practical Implementation

Module 04

Object Detection and Recognition

Module 05

Image Segmentation

Module 06

3D Vision and Depth Estimation

Module 07

Advanced Topics in Computer Vision

Module 08

Practical Projects and Case Studies

Module 09

Final Project

Module 01

Introduction to Computer Vision

Overview of Computer Vision

Basics of Image Formation

Module 02

Image Processing Fundamentals

Image Preprocessing

Image Transformation

Practical Implementation

Module 03

Feature Detection and Matching

Edge Detection and Feature Extraction

Feature Matching

Practical Implementation

Module 04

Object Detection and Recognition

Classical Object Detection

Modern Object Detection

Practical Implementation

Module 05

Image Segmentation

Segmentation Techniques

Semantic and Instance Segmentation

Practical Implementation

Module 06

3D Vision and Depth Estimation

Stereo Vision and Depth Estimation

3D Reconstruction

Practical Implementation

Module 07

Advanced Topics in Computer Vision

Optical Flow and Motion Analysis

Generative Models and Image Synthesis

Practical Implementation

Module 08

Practical Projects and Case Studies

Project Planning and Dataset Preparation

Model Building and Training

Deployment and Production

Module 09

Final Project

Project Proposal

Implementation

Evaluation and Presentation