

**GOVERNMENT OF ANDHRA PRADESH
DEPARTMENT OF TECHNICAL EDUCATION**

**Office of the
Chairman, SBTET, Vijayawada, A.P.**

Cir. Memo No. CTE/AP/CISCO Programmes/2018-001

Dt: 24-08-2018.

Sub: Technical Education-Incorporation of CISCO Academy programmes into curriculum and fee structure of CISCO Academy– Reg.

Ref: 1. MOU between the Government of Andhra Pradesh and M/s Cisco Systems India Pvt Ltd dt:17-03-2016 at Visakhapatnam.

2. Lr. No. K2/2800-Cisco/2017-001 from the Spl. Commissioner of Technical Education, AP dt 17-02-2017.

3. Lr. No. K2/2800-Cisco/2017-002, dated: 15-05-2017 of Spl. Commissioner of Technical Education, AP.

4. Report of Subject experts committee for curriculum integration, dt: 03-08-2018.

5. TACT/ASC/004, Dt: 01-08-2018 of Head, Cisco Academy Support Center.

All the principals are aware that to enhance the skills of our polytechnic students to improve their employability opportunities, Government of Andhra Pradesh and Department of Technical Education have joined hands with CISCO Systems India Pvt Ltd. With reference to above, the CISCO Networking Academy has proposed the following two programmes to run in our polytechnics in collaboration with CISCO:

1. I.T. Essentials programme and
2. C.C.N.A. programme.

Also, to get the certification from CISCO as our students have to appear for online tests based on their syllabus, it is essential to train the concerned students in the respective topics of the syllabus. Hence, a subject experts committee has been formed for the purpose of discussion about incorporation of syllabus of CISCO programmes into C-16 curriculum. Based on the recommendations of the above committee, the following modifications in C-16 curriculum are informed herewith:

1. I.T. Essentials programme: The syllabus of I.T. Essentials programme has been incorporated in the syllabus of subject “Computer Fundamentals Laboratory” (Common to all Engg branches) of 1st year course of the branches with subject codes MET/TT/CH/CHPC/CHPP/CHOT/AA/BM/CHST/A/PET/IT/M/C/PCT/RAC/EE/AEI/EC/CM-111, MNG-108 & GT-110.

The revised syllabus is attached herewith and all the principals of Government and Private Polytechnics are informed to download the same and communicate to all HODs, Staff and Students

and implement the above revised curriculum with effect from this academic year (2018-19). At the end of year the students have to appear for Board Diploma Examination for subject - Computer Fundamentals Laboratory with revised syllabus and also have to appear for online exam of CISCO to get certification from CISCO.

2. C.C.N.A. Programme: (Cisco Certified Network Associate Programme) The C.C.N.A. Programme has been incorporated in the 6 months industrial training of D.E.C.E. and D.C.M.E. branches with effect from next batch of industrial training i.e., with effect from batch going to industrial training from 09-11-2018 onwards. At the end of semester, the students have to appear for online exam of CISCO (to get certification) in addition to appearing in Board Diploma Examination in subject: 601 (Industrial Training viva-voce). Necessary further instructions in this regard will be issued within few days.

Also for the above two programmes to run continuously in all polytechnics, the CISCO Academy and their support centre Trident Academy of Creative Technology have proposed the following fee structure for continuous monitoring, training of teachers and for program management:

Fee Structure:

- Subsidized Cisco Networking Academy Registration fee 1st year for private Polytechnics: **17,700/-** per Academy
- 2nd year onwards program management fee for Government and Private Polytechnics: **15,000/-** per Academy per Annum.
- Subsidized instructor training fee for private polytechnics:
 - **IT-Essentials: 4,000/-** per Instructor.
 - **CCNA (Module- 1,2,3,4): 10,000/-** per Instructor

As the fee proposed by CISCO is subsidized and only minimum fee per institution per annum irrespective of number of students, all the principals of all Government and Private Polytechnics are requested to pay the above fee from their institution funds only and are requested **not to collect** any fee from students.

Hence, the principals of all Government and Private Polytechnics are informed to take up the following course of action immediately

1. The Government and Private Polytechnics who have already registered with CISCO during 2017-18 year, pay the program management fee to CISCO for the present year (2018-19) and register immediately the 1st year students (of the branches given above) of your institution to I.T. Essentials programme of CISCO Academy.

2. The Private Polytechnics who have not registered with CISCO during 2017-18 are informed to register immediately by paying registration fee and register 1st year students (of the branches given above) of your institution to IT Essentials programme of CISCO Academy immediately.

3. The fee payment is to be made to:

Account Name : TRIDENT ACADEMY OF CREATIVE TECHNOLOGY

Name of Bank : HDFC BANK

Branch Address : Infocity Branch, Bhubaneswar, Odisha, India.

Bank A/C No : 50100178290390

Bank IFSC Code : HDFC0004013

For Further details of registration/payment you contact:

**Shubhajit Jagadev, Head, Cisco Academy Support Center (ASC) & Instructor
Training Center (ITC) (East, Northeast and Southeast India)**

+91- 9438668887, 7064432000

Email-ID: shubhajit@tat.ac.in

4. Also, the training/teaching the students in the above two programmes is to be done preferably by the staff members who have attended the training programmes conducted by CISCO for the above purpose. Hence, all the principals of Government and Private Polytechnics are informed to upload the details enquired in the google format that will be provided by SBTET for the purpose of identifying the need for further training programmes.

Sd/- SPECIAL COMMISSIONER

Encl: As above.

COMPUTER FUNDAMENTALS LABORATORY

(Common To All Branches)

| | | |
|-------------------------|----------|---|
| Subject Title | : | Computer Fundamentals Laboratory |
| Subject Code | : | Common-111, MNG-108 & GT-110 |
| Periods per Week | : | 03 |
| Periods per Year | : | 90 |

TIME SCHEDULE

| S. No. | Major Topics | No. of sessions each of 3 periods duration | No. of Periods |
|---------------|--|---|-----------------------|
| I | Computer hardware Basics | 3 | 9 |
| II | Windows Operating System | 3 | 9 |
| III | Working with Printers | 2 | 6 |
| IV | MS-Word | 4 | 12 |
| V | MS-Excel & MS-Power Point | 4 | 12 |
| VI | Networking Concepts | 3 | 9 |
| VII | Security | 3 | 9 |
| VIII | IT Professional | 2 | 6 |
| IX | Laptops and Mobile devices | 2 | 6 |
| X | Mobile, LINUX and OS X Operating Systems | 2 | 6 |
| XI | Troubleshooting | 2 | 6 |
| | TOTAL | 30 | 90 |

COMPUTER FUNDAMENTALS LAB

I. Computer Hardware Basics

1. a) Computer System and its hardware components and connections.
b) Configurations and specialized computer system
c) Safe lab procedures
d) Proper use of tools and software with personal computer components
2. (a) To check the hardware present in your computer.
(b) Assemble the Computer
(c) To verify BIOS settings.
(d) To upgrade components in a computer system.

II. Windows's operating system

3. Requirements of OS
4. Installation and maintenance of Operating system – Windows
5. Perform routine system management tasks with common MS-Windows tools
6. Configure of Virtualization on a computer
7. Maintenance and trouble shooting of windows operating systems
8. (a). Working with Files and Folders
(b). Windows Accessories: Calculator – Notepad – WordPad – MS Paint

III. Working with Printers

9. Purpose and characteristics of different types of printers
10. Installation of Printers.
11. Configure Sharing of Printer
12. Maintaining and Troubleshooting Printers

IV. Practice with MS-Word

13. To familiarize with Ribbon layout of MS Word Home - Insert - Page layout –
References – Review - View
14. To practice Formatting techniques
15. To insert a table of required number of rows and columns
16. To insert Objects, Clipart and Hyperlinks
17. To use Mail Merge feature of MS Word
18. To use Equations and symbols features

V. Practice with Excel & power point

19. To familiarize with MS-EXCEL layout
20. To use built in functions and Formatting Data
21. To create Excel Functions, Filling Cells& a Formula for automatic calculations
22. To practice Excel Graphs and Charts
23. To familiarize with Ribbon layout features of PowerPoint 2007.
24. To create a simple PowerPoint Presentation
25. To insert Text, Objects, Flow Charts, Table, Charts/Graphs, video and audio
26. To practice Animating text and objects

VI. Networking Concepts

27. Principles of networking , Identify different Components and networks types
28. Basic networking concepts and technologies, Configure Network connectivity
between PCs.
29. Connect a computer to Wired and Wire-Less Networks.
30. Purpose and characteristics of ISP connection technologies
31. Cloud concepts and network host services
32. Perform preventive maintenance on network using common techniques
33. To troubleshoot Networks.

VII. SECURITY

34. Security threats
35. Security procedures-configure IT security
36. Common preventive maintenance techniques for security
37. Troubleshoot basic security problems

VIII. THE IT PROFESSIONAL :

38. Communication skills and IT professional
39. Ethical and legal issues in IT industries
40. Call centre technicians –call centre environment and technicians responsibilities

IX. LAPTOPS and Mobile devices

41. Laptop components
42. Laptop configuration – to configure laptop power settings and wireless settings
43. Laptop hardware and component installation and configuration
44. Mobile device hardware overview
45. Common preventive maintenance techniques for laptop and mobile devices

X. MOBILE LINUX AND OS X OPERATING SYSTEM

46. Purpose and characteristics of mobile operating system
47. Methods for securing mobile devices
48. Installation of Linux and OS X Operating Systems.
49. To configure Network connectivity and email on Mobile devices.
50. Troubleshoot Mobile and Linux and OS X Operating Systems.

XI. Troubleshooting

51. Troubleshoot basic computer problems.
52. Troubleshoot peripherals like key board, Monitor, mother board Problems.
53. Trouble shoot operating systems
54. Troubleshoot network and security

| Exp. No | Name of the Experiment | Objectives | Key Competencies |
|----------------|--|---|---|
| 1(a) | Computer System and its hardware components and connections. | <ul style="list-style-type: none"> a. Identify the Parts of Computer system <ul style="list-style-type: none"> i. CPU ii. Monitor iii. CD/DVD Drive iv. Power Switch v. Start Button vi. Reset Button b. Identify and connect various peripherals on CPU c. Identify and connect the cables used with computer system d. Identify various ports and connect Keyboard & Mouse | <ul style="list-style-type: none"> a. Identify all PC components b. Identify External Ports and Cables c. All Input and Output Devices |
| 1 (b). | Configurations for specialized computer system | a. Specialized Computer Systems | Familiarize with specialized Computer Systems |
| 1(c) | Safe lab procedures | <ul style="list-style-type: none"> a. Procedures to protect people b. Procedures to protect Equipment c. Procedures to Protect the Environment | Familiarize with Lab Safety Procedures |
| 1(d) | Proper use of tools and software with personal computer components | <ul style="list-style-type: none"> a. Hardware Tools b. Software Tools c. Organizational Tools d. Demonstrate Proper Tool Use | Familiarize with proper use of tools |
| 2(a) | To check the hardware present in your computer | <ul style="list-style-type: none"> a. Find the CPU name and clock speed b. Find the details of RAM and Hard disk c. Access Device manager d. Control Panel and check the status of devices like mouse and key board | Access device manager |
| 2(b) | Assemble the computer | <ul style="list-style-type: none"> b. Open the case and connect the Power Supply c. Install the Motherboard d. Install Drives e. Install the Adapter Cards f. Install Cables | Familiarize with assemble and disassemble of computer |
| 2(c) | To verify BIOS settings | <ul style="list-style-type: none"> a. Boot the Computer b. BIOS and UEFI Configuration | Familiarize with BIOS setup |

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| 2(d) | To upgrade components in a computer | <ul style="list-style-type: none"> a. Motherboard and Related Components b. Storage Devices c. Peripheral Devices | Familiarize with upgrading memory and peripheral components. |
| 3 | Requirements of Operating Systems | Minimum requirements to install Windows 10 Operating system | Familiarize with the system requirements |
| 4 | Installation and maintenance of Operating system – Windows | Installation of Windows 10 Operating system with default settings | Familiarize to install windows operating system |
| 5 | Perform routine system management tasks with common MS-Windows tools | In command mode(run) Administrative tools, Registry edit, MS-Config, etc. | Familiarize with system management |
| 6 | Configure of Virtualization on a computer | <ul style="list-style-type: none"> a. Purpose of virtual machines b. Virtual Machine requirements c. Create a virtual machine | Familiarize how to connect a system to cloud |
| 7 | Maintenance and troubleshooting of windows operating systems | <ul style="list-style-type: none"> a. Operating Systems Updates b. Scheduling Tasks c. Hard Drive Backup. d. Applying the Troubleshooting for Operating Systems e. Common Problems and Solutions for Operating Systems | Familiarize with proper maintenance of operating system and basic troubleshooting |
| 8(a). | Working with Files and Folders | Create Files, Folders and Sub-folders at various locations of the system | Familiarize to Create Files, Folders and Sub-folders at various locations |
| 8(b) | Windows Accessories: Calculator – Notepad – WordPad – MS Paint | Practice the Calculator, Notepad, Wordpad and MS-Paint software's | Familiarize to use different application software's |
| 9 | Purpose and characteristics of different types of printers | <ul style="list-style-type: none"> a. Different types of Printers b. Need for different types of Printers | Familiarize with types of Printers |
| 10 | Installation of Printers. | <ul style="list-style-type: none"> a. Install a printer using proper printer drivers b. Updating a Printer | Familiarize with Installation of Printers |
| 11 | Configure & Sharing of Printer | <ul style="list-style-type: none"> a. Configuring Options and default settings b. Configure Printer Sharing c. Connect a shared Printer | Familiarize with sharing of Printers |

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| 12 | Maintaining and Troubleshooting Printers | <ul style="list-style-type: none"> a. Printer Preventive Maintenance b. Basic troubleshooting of Printers c. Common Problems and Solutions for Printers | Familiarize with the Printers troubleshooting. |
| 13 | To familiarize with Ribbon layout of MS Word Home - Insert - Page layout – References – Review – View | <ul style="list-style-type: none"> a. Create/Open a document b. Use Save and Save as features c. Typing text. d. Spell Check and Auto correction | <ul style="list-style-type: none"> a. Create a Document and name appropriately and save. b. Use spell check/ Grammar features for auto corrections. |
| 14 | To practice Formatting techniques | <ul style="list-style-type: none"> a. Formatting Text b. Formatting Paragraphs c. Setting Tabs d. Insert bullets and numbers e. Insert page numbers, header and footer | <ul style="list-style-type: none"> a. Familiarize to format text and Paragraphs. b. Use Bullets and Numbers. |
| 15 | To insert a table of required number of rows and columns | <ul style="list-style-type: none"> a. Edit the table by adding the fields – Deleting rows and columns –inserting sub table – marking borders. b. Merging and splitting of cells in a Table c. Changing the background colour of the table d. Use table design tools e. Use auto fit – fixed row/ column height/length – Even distribution of rows / columns features f. Convert Text to table and Table to Text. g. Use Sort feature of the Table to arrange data in ascending/descending order | <ul style="list-style-type: none"> a. Insert tables in to a document and edit. b. Use sort option for arranging data |
| 16 | To insert Objects, Clipart and Hyperlinks | <ul style="list-style-type: none"> a. Create a 2-page document. &Insert hyperlinks and Bookmarks. b. Create an organization chart | <ul style="list-style-type: none"> a. Insert hyperlinks &Bookmarks b. Create organization charts/flow charts |
| 17 | To use Mail Merge feature of MS Word | <ul style="list-style-type: none"> a. Use mail merge to prepare individually addressed letters b. Use mail merge to print envelopes. | <ul style="list-style-type: none"> a. Use Mail merge feature |
| 18 | To use Equations and symbols features | <ul style="list-style-type: none"> a. Explore various symbols available in MS Word. b. Insert a symbol in the text. c. Insert mathematical equations in the document | <ul style="list-style-type: none"> a. Enter Mathematical symbols and Equations in the word document |

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| 19 | To familiarize with MS-EXCEL layout | <ul style="list-style-type: none"> a. Open /create an MS Excel spreadsheet and familiarize with MS Excel 2007 layout like MS office Button- b. Use Quick Access Toolbar- Title Bar- Ribbon- Worksheets- Formula Bar- Status Bar c. Enter Data-Edit a Cell-Wrap Text-Delete a Cell Entry-Save a File-Close Excel | <ul style="list-style-type: none"> a. Familiarize with excel layout and use. b. Use various features available in toolbar c. Enter data and edit |
| 20 | To use built in functions and Formatting Data | <ul style="list-style-type: none"> a. Sort and filter data in a worksheet. b. Perform Mathematical Calculations verify -AutoSum c. Perform Automatic Calculations Align Cell Entries | Use built in functions in Excel |
| 21 | To create Excel Functions, Filling Cells& a Formula for automatic calculations | <ul style="list-style-type: none"> a. Use reference operators b. Work with sum, sum if, count and count if functions c. Fill cells automatically. | Use built in functions in Excel |
| 22 | To practice Excel Graphs and Chart | <ul style="list-style-type: none"> a. Create Excel Pie chart, b. Create column chart c. Practice creating any chart | Use data in Excel sheet to create charts |
| 23 | To familiarize with Ribbon layout features of PowerPoint 2007 | Use various options in Home, insert, design, animation, slideshow, Review & View in the power point | Access required options in the tool bar |
| 24 | To create a simple PowerPoint Presentation | <ul style="list-style-type: none"> a. insert new slide in power point b. change slide title c. insert bullets d. add images in the slides e. add text boxes in the slides | <ul style="list-style-type: none"> a. Create simple power point presentation with photographs and animations b. Use bullets option |
| 25 | To insert Text, Objects, Flow Charts, Table, Charts/Graphs, video and audio | <ul style="list-style-type: none"> a. Insert text and objects b. Create flow charts in power point c. Set indents and line spacing d. Insert shapes and WordArt e. Creating a table f. Change table background g. Create 3D bar charts in power point | <ul style="list-style-type: none"> a. Insert text and objects b. Create charts a flow charts c. Insert tables |
| 26 | To practice Animating text and objects | <ul style="list-style-type: none"> a. Apply transitions to slides | Add animations effect |
| 27 | Principles of networking , Identify different Components and networks types | <ul style="list-style-type: none"> a. Principles of networks b. Networks standards c. Identify network components and types of networks Like LAN, MAN, WAN, PAN | Create small networks |

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| 28 | Basic networking concepts and technologies, | a. Networking concepts b. Configure Network connectivity between PCs | Familiarize with network equipment and protocols |
| 29 | Computer to network connection | a. Connect a computer to Wired and Wire-Less Networks b. Network sharing c. Remote connections | Create wired and wireless networks |
| 30 | Purpose and characteristics of ISP connection technologies | a. Practice on DSL and ASDL b. Selecting an ISP for customer c. WIMAX | Broadband Technologies |
| 31 | Cloud concepts and network host services | a. Data centres and cloud computing concepts. b. Networked- host services | Internet technologies |
| 32 | Perform preventive maintenance on network using common techniques | a. Preventive maintenance procedures | Familiarize with network maintenance |
| 33 | To troubleshoot Networks | a. Identify the problem in the network b. Establish a theory of probable cause. c. Establish a plan of action to resolve the problem | Identify all common problems in the networks |
| 34 | Security threats | a. Types of threats | Familiarize with basic security threats |
| 35 | Security procedures-configure IT security | a. windows local security policy b. securing web access c. protecting data d. protection against malicious software e. security techniques f. protecting physical equipment | Security techniques and policies |
| 36 | Common preventive maintenance techniques for security | b. Security procedures c. Common preventive maintenance techniques for security d. Basic trouble shooting process for security | Use security procedures and troubleshooting techniques. |
| 37 | Troubleshoot basic security problems | a. Applying the Troubleshooting process to security b. Common problems and solutions for security | Identify the common network problems and solutions |
| 38 | Communication skills and IT professional | a. Communications skills b. Working with a customer c. Employee best practices | Communication skills needed to deal with customer |
| 39 | Ethical and legal issues in IT industries | a. Ethical and legal considerations b. Legal procedures | Familiarize with Ethical and legal procedures |

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| 40 | Call centre technicians –call centre environment and technicians responsibilities | a. Call centres b. Level one technicians c. Level two technicians | Familiarize about call centres and about technicians |
| 41 | Laptop components | a. Purpose and components of laptops | Explain block diagram of laptop, function of components |
| 42 | Laptop configuration | a. To configure laptop power settings and wireless settings | Different Power settings on power and battery source, wireless peripheral and internet settings |
| 43 | Laptop hardware and component installation and configuration | a. Explain how to install and remove laptop components | Install drivers of each components, plug and play , using control panel to un install |
| 44 | Mobile device hardware overview | a. Explain purpose and characteristics of mobile devices | Explain block diagram of mobile devices , function of components |
| 45 | Common preventive maintenance techniques for laptop and mobile devices | a. Explain maintenance and preventive techniques for laptop and mobile devices | Ergonomics, maintenance and prevention techniques to avoid mal function of laptops and mobile devices |
| 46 | Mobile operating system | a. Purpose and characteristics of mobile operating system IOS, SYMBION, ANDROID | Types of mobile OS, characteristics and purpose |
| 47 | Methods for securing mobile devices | a. Mobile data security | Measures to avoid unauthorized access to data, internet activities, virus protection |
| 48 | Linux and OS X Operating Systems. | a. Characteristics of REDHAT linux, and other OS | Structure of linux, windows and key functions |
| 49 | Network connectivity and email on Mobile devices. | a. To configure Network connectivity and email on Mobile devices | Email notifications settings, internet, wifi , hotspot settings, data usage restrictions etc |
| 50 | Troubleshoot Operating Systems. | a. Maintenance, and trouble shooting of Mobile, Linux and OS X | Procedures to maintain, repair, reinstall , customized installation and trouble shooting |
| 51 | Troubleshoot basic computer problems | a. Causes of malfunction of computer and trouble shoot | BIOS, RAM settings, Booting, identify different problems on screen while booting |

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| 52 | Troubleshoot computer peripherals | Study the maintenance and causes of malfunction of peripherals, their trouble shoot | Trouble shooting of keyboard, mouse, mother monitor, RAM, printer and other peripherals |
| 53 | Trouble shoot operating systems | a. study the possible causes of OS problems and solutions | Full and customized Install and reinstallation and repair methods, |
| 54 | Troubleshoot network and security | Methods to solve network and security problems | Check the status of cables, routers, switches, other hardware and software components |

Reference:

1. CISCO – IT Essentials online course material
2. MS – Office 2016 for dummies.