

Report on restructuring the syllabus of DCA programme

Diploma in Computer Applications is a computer education programme conducted by SCOLE-Kerala (formerly known as Kerala State Open School) since 2013. The course duration is 240 hours with 144 hours of theory classes and 96 hours of practical classes. The syllabus comprises of five units and the study material is covered in two self-learning modules. At the end of the course, a public examination is conducted in five papers. Since the changes are frequent in the field of computers and Information Technology, the syllabus needs the necessary updation.

In view of this, the syllabus is updated and restructured in the year 2022. Some of the outdated contents are excluded, whereas the latest developments in the IT field are incorporated in the revised syllabus. Though the basic structure is retained, the related topics scattered in different units of the existing syllabus are clubbed logically and properly in the revised syllabus. In addition to this, the practical sessions are completely revised with the latest versions of the respective software. After the completion of the course, the students will be able to work in both Windows and Linux platforms. More importance is given to practical sessions by dividing the course duration in the ratio 50:50 for theory and practical.

The revised syllabus and scheme are given below:

DC01: Information Technology

(Theory: 30 Hrs.)

- 1. Introduction to IT**
Data and Information; Data processing; Functional units of a computer; Computer as a data processor; Characteristics of computers; Generations of computers; Types of data – Number, Text, Date, Time, Image, Audio, Video.
- 2. Computer System Organization**
Components of computer – Hardware, Software, Live ware; Hardware components – Processor, Motherboard, Ports, SMPS, Memory (Measuring units, Primary – RAM, ROM, Cache, Secondary – Hard disk, SSD, Optical disks, Semi conductor memories), Peripheral devices.
- 3. Input – Output devices**
Input devices – Keyboard, Mouse, Scanner (OCR s/w), Light pen, Touch pad, Touch screen, Graphic tablet, Joy stick, Bar code /QR code Reader, OMR, MICR, Digital camera, Microphone, Biometric sensor, Smart card reader; Output devices – VDU (LCD, LED, OLED, LCD projector), Printers (Dot matrix, Inkjet, Laser, Thermal, 3D), Plotter, Audio output devices; E-waste and disposal methods.
- 4. Computer Software**
Classification of s/w; System software – OS (Functions, Examples); Language processors – Computer languages, Types of language processors (Assembler, Compiler, Interpreter); Utility programs – Compression, Disk defragmenter, Back up, Antivirus; Application software – Word processing s/w, Spreadsheet s/w, Presentation s/w, Database s/w, Multimedia s/w, Customized s/w.

5. Applications of ICT
e-Governance – Types of interactions, Benefits and challenges; e-Business – e-Commerce, EPS, e-Banking, Benefits and challenges; e-Learning (Academic, Evaluation) – Tools, Benefits and challenges.

DC02: PC and its Operations

(Theory: 15 Hrs. + Practical: 20 Hrs.)

1. Personal Computers
Types of PCs – Desk tops, Laptops, Tablets (Standard configuration of each type); Smart devices
2. Windows OS
Installation, (Areas covered in the current module based on Windows 10), Maintaining computer s/w (Disk burning, Antivirus, Cookies, Backup, Browsers, System tools – Disk Clean up, Disk Defragmenter), Updating s/w.
3. Malayalam Computing
Current module is to be incorporated. Keyboard based (One to one mapping, Transliteration), Voice recognition and Handwriting.

DC03: Office Automation

(Theory: 25 Hrs. + Practical: 35 Hrs.)

1. Automated Office
Basics of office automation – Infrastructure, Hardware requirements, Software requirements; Office packages, Internet, File handling – Conversions (jpeg – pdf, docs – pdf, spreadsheets – pdf, presentation – pdf), Resizing, Compression; Concept of Office 365 and Google packages.
2. MS Word (Concepts in the existing syllabus are illustrated using Microsoft Word 2010)
3. MS Excel (Concepts in the existing syllabus are illustrated using Microsoft Excel 2010)
4. MS PowerPoint (Concepts in the existing syllabus are illustrated using Microsoft PowerPoint 2010)
5. DBMS (Concepts in the existing syllabus are illustrated using Microsoft Access 2010)

DC04: Linux based Office

(Theory: 25 Hrs. + Practical: 30 Hrs.)

1. Linux OS
Concepts of Proprietary software and Free software (Free Software Foundation, Types of freedom, Free and Open source software); Freeware v/s Shareware; Linux users and permissions; Linux installation; Other software installations.
2. LibreOffice Writer (Concepts in the existing syllabus are illustrated in Ubuntu Linux 18.04 platform)

- 3. LibreOffice Calc (Concepts in the existing syllabus are illustrated in Ubuntu Linux 18.04 platform)
- 4. LibreOffice Impress (Concepts in the existing syllabus are illustrated in Ubuntu Linux 18.04 platform)

DC05: Internet

(Theory: 25 Hrs. + Practical: 35 Hrs.)

- 1. Computer Network
Computer network; Need; Types of network (PAN, LAN, MAN, WAN); Connectivity devices – NIC, Switch, Repeater, Bridge, Router, Gateway, Modem, Firewall; Topology – Bus, Star, Ring, Mesh; Protocol – TCP/IP, HTTP, FTP, DNS; Identifying computers in network (IP address, MAC address).
- 2. Internet
History of Internet; Basic requirements; Types of connectivity - Wired (DSL, FTTH), Wireless (Mobile broadband, Satellite); Services on Internet – WWW (Web browser, URL), Search engines, E-mail, Social media, Google Apps (Drive, Maps, Form).
- 3. HTML
Basic concepts of HTML document – HTML tags, Attributes, HTML elements, Structure of HTML document; Creating an HTML document; Essential tags; Common tags – Headings, <HR>,
, <P>, Text formatting tags, ; Reserved characters; <MARQUEE>, , <EMBED>, <A>; Lists, Table, <FRAMESET>; Forms.
- 4. Trends and Issues in ICT
Cloud computing, Cloud service models; Big data analytics; IoT; Cyber crimes – against individuals, government, property; Hacking, Phishing, Ransomware; Cyber laws; IT Act, Cyber Forensics; Infomania.

Evaluation Process

According to the revised syllabus, the content of the papers in the examination is also modified and guidelines are prepared for the course-end evaluation as follows. Evaluation process consists of both theory examination and practical examination in addition to the internal assessment. Internal marks for each paper is retained as 50 as per the previous guidelines.

Theory Examination Guidelines

DC01: Information Technology

Duration : 3 Hours

Total score : 100

Weight to content:

- 1. Introduction to IT : 20 score
- 2. Computer System Organization : 25 score
- 3. Input – Output devices : 25 score
- 4. Computer Software : 20 score
- 5. Applications of ICT : 10 score

Approved
[Signature]

SENIOR JOINT DIRECTOR (ECS)
DIRECTORATE OF TECHNICAL EDUCATION
GOVERNMENT OF KERALA

SENIOR JOINT DIRECTOR (ECS)
DIRECTORATE OF TECHNICAL EDUCATION
GOVERNMENT OF KERALA

Type of Questions and Marks distribution:

Type of Questions	Score	No. of Qns.	No. of Mandatory Qns.	Total Score
Objective	1	11	10	10
Very short answer	2	12	10	20
Short answer	3	10	8	24
Descriptive	5	8	6	30
Essay	8	3	2	16
Total		44	36	100

DC02: PC and its Operations

Duration : 2 Hours

Total score : 50

Weight to content:

1. Personal Computers : 20 score
2. Windows OS : 20 score
3. Malayalam Computing : 10 score

DC03: Office Automation

Duration : 2 Hours

Total score : 50

Weight to content:

1. Automated Office : 14 score
2. MS Word : 12 score
3. MS Excel : 12 score
4. MS PowerPoint : 12 score

DC04: Linux based Office

Duration : 2 Hours

Total score : 50

Weight to content:

1. Linux OS : 20 score
2. LibreOffice Writer : 10 score
3. LibreOffice Calc : 10 score
4. LibreOffice Impress : 10 score

Approved
A. Chinnappa

SENIOR JOINT DIRECTOR (ECS)
DIRECTORATE OF TECHNICAL EDUCATION
GOVERNMENT OF KERALA

SENIOR JOINT DIRECTOR (ECS)
DIRECTORATE OF TECHNICAL EDUCATION
GOVERNMENT OF KERALA

DC05: Internet

Duration : 2 Hours

Total score : 50

Weight to content:

- 1. Computer Network : 14 score
- 2. Internet : 14 score
- 3. HTML : 10 score
- 4. Trends and Issues in ICT : 12 score

Type of Questions for DC02, DC03, DC04 & DC05 and Marks distribution:

Type of Questions	Score	No. of Qns.	No. of Mandatory Qns.	Total Score
Objective	1	6	5	6
Very short answer	2	10	8	20
Short answer	3	10	8	30
Essay	5	2	1	10
Total		28	22	50

Practical Examination Guidelines

There will be two units for practical evaluation. Unit 1 consists of office packages from DC03 and DC04. Unit 2 consists of Malayalam computing from DC02 and Web designing from DC05.

Unit	Part	Topic	Procedure	Score
I	A	Document preparation (3 exercises) (MS Word & Writer)	One marked question each from any of these two parts are to be attempted. One using MS Office suite and the other using LibreOffice.	50 + 50 = 100
	B	Worksheet creation (3 Exercises) (MS Excel & Calc)		
	C	Presentation making (2 Exercises) (MS PowerPoint & Impress)		
II	A	Malayalam Computing (3 Exercises)	One marked question from each part is to be attempted.	50 + 50 = 100
	B	HTML coding (5 Web pages)		

Approved
S. Cherian
SENIOR JOINT DIRECTOR (ECS)
DIRECTORATE OF TECHNICAL EDUCATION
GOVERNMENT OF KERALA

Score distribution

Unit	Unit	Qn.	Procedure	Output	Viva	Record Book	Total
I	DC03	1	20	20	5	5	50
	DC04	2	20	20	5	5	50
II	DC02	1	20	20	5	5	50
	DC05	2	20	20	5	5	50

The panel of Syllabus revision is constituted by the following members.

*Approved
S. J. Thomas*

1. Dr. Madhu Nair
Assistant Professor,
CUSAT, Ernakulam.

4. Rejimoan R.
Asst. Professor, Dept. of Computer
Science and Engineering,
Sree Chithra Thirunal College of
Engineering,
Thiruvananthapuram.

SENIOR JOINT DIRECTOR (C&E)
DIRECTORATE OF TECHNICAL EDUCATION
GOVERNMENT OF KERALA
Assistant Professor,
Prajyothinikethan College, Thrissur.

3. Dr. Sonia B.
Professor and HOD,
Dept. of CSE
Sree Chithra Thirunal College of
Engineering,
Thiruvananthapuram.

5. Joy John
HSST Sr. Sel. Gr. Computer Science
St. Joseph's HSS, Tvpm.

[Signature]

[Signature]

[Signature]

SENIOR JOINT DIRECTOR (C&E)
DIRECTORATE OF TECHNICAL EDUCATION
GOVERNMENT OF KERALA