Education and Training Division
Assam Electronics Development Corporation Limited
Industrial Estate, Bamunimaidam
Guwahati – 781021

Outline Syllabi of AMTRON Courses

To Run in AMTRON Centres/ Colleges under ICT@College Skill Development Programme

(Revised in October 2022 and April 2023)

[References: E&T Division, AEDC Ltd. (AMTRON) Notifications with
Ref. No. AEDC/E&T/ICT/ADMIN/2018/58/ 493 Dated 31-10-2022,
Ref. No. AEDC/E&T/ICT/ADMIN/2018/58/505 Dated 11-04-2023 and
Ref. No. AEDC/E&T/GHY/ACADCOM/2017/29/564 Dated: 08-05-2023]

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List of Courses to run under ICT@Colloege Skill Development Programme:

Sl. No.	Course Code	Course Name	Duration	Entry Level Qualification	Course Fee
1	CCA	Certificate Course in Computer Application	3 months	HSLC Pass	₹ 2,250/-
2	CCFA	Certificate Course in Computerised Financial Accounting	3 months	HSLC Pass	₹ 2,250/-
3	ACCO	Advanced Certificate Course in Computer Operation	6 months	HSLC Pass	₹ 4,500/-
4	ACDTPA	Advanced Certificate Course in Desktop Publishing & Accounting	6 months	HSLC Pass	₹ 4,500/-
5	ACCFA	Advanced Certificate Course in Computerised Financial Accounting	6 months	HSLC Pass	₹ 4,500/-
6	DICTA	Diploma in ICT Application	2 Semesters	HSLC Pass	₹ 9,000/-
7	DCOA	Diploma in Computerised Office Automation	2 Semesters	HSLC Pass	₹ 9,000/-
8	DSCSP	Diploma in Stenography and Computerised Secretarial Practice	1 Year	HSLC Pass	₹ 9,000/-
9	DCO	Diploma in Computer Operation	2 Semesters	HS Pass	₹ 9,000/-
10	DCA	Diploma in Computer Application	2 Semesters	HS Pass	₹ 9,000/-
11	DCFA	Diploma in Computerised Financial Accounting	2 Semesters	HS Pass	₹ 9,000/-
12	DMAT	Diploma in Multimedia & Animation Technology	2 Semesters	HS Pass	₹ 9,000/-
13	DCHM	Diploma in Computer Hardware Maintenance	3 Semesters	HS Pass	₹ 13,500/-
14	PGDIT	Post Graduate Diploma in Information Technology	2 Semesters	Graduation	₹ 18,000/-
15	ADCOA	Advanced Diploma in Computerised Office Automation	6 Semesters	HS Pass	₹ 27,000/-

Paper Structures in the Courses under ICT@College SDP:

Sl. No.	Course Code	Paper Code & Paper Name	
1	CCA	**ICT-CA-01**: Introduction to ICT Tools	
		ICT-CA-PR: ICT Tools Practical [50 Marks]	
2	CCFA	**ICT-FA-02**: Computerised Financial Accounting	
		ICT-FA-PR: CFA Practical [50 Marks]	
3	ACCO	**ICT-CA-01**: Introduction to ICT Tools	
		Any one of these two:	**ICT-CA-21**: Introduction to ICT Resources
			ICT-CA-22: Multimedia and Animation Technology
		ICT-CA-PR1: ICT Tools & ICT Resources/ MAT	
4	ACDTPA	**ICT-CO-05**: Desk Top Publishing and Printing Technology	
		ICT-FA-02: Computerised Financial Accounting	
		ICT-CO-PR2: DTP & CFA	
5	ACCFA	**ICT-CA-01**: Introduction to ICT Tools	
		ICT-FA-02: Computerised Financial Accounting	
		ICT-FA-PR1: ICT Tools & CFA	
6	DICTA*	***Semester – 1:***	
		ICT-CO-01: Basic ICT Tools	
		ICT-CO-02: DTP and Financial Accounting	
		Semester – 2:	
		ICT-CO-03: Computer Networking and Linux	
		ICT-CO-04: Basic On-line Applications & Google Workspace	
		ICT-CO-MP: Mini Project (60 hours) & Seminar [80 + 20 = 100 Marks]	
7	DCOA*	***Semester – 1:***	
		ICT-CO-01: Basic ICT Tools	
		ICT-CO-02: DTP and Financial Accounting	
		Semester – 2:	
		ICT-SP-03: Office Management & Secretarial Services	
		ICT-CO-04: Basic Online Applications & Google Workspace	
		ICT-OA-MP: Mini Project (60 hours) & Seminar [80 + 20 = 100 Marks]	
8	DSCSP*	**ICT-CO-01**: Basic ICT Tools	
		ICT-SP-02: Stenography	
		ICT-SP-03: Office Management & Secretarial Services	
		ICT-SP-04: Basic Employability Skills	
		ICT-SP-MP: Mini Project (60 hours) & Seminar [80 + 20 = 100 Marks]	

9	DCO	***Semester 1:***	
		ICT-CA-01: Introduction to ICT Tools	
		Any one of these two:	**ICT-CA-21**: Introduction to ICT Resources
			ICT-CA-22: Multimedia and Animation Technology
		ICT-CA-PR1: ICT Tools & ICT Resources/ MAT	
		Semester 2:	
		ICT-CO-05: Desk Top Publishing and Printing Technology	
		ICT-FA-02: Computerised Financial Accounting	
		ICT-CO-PR2: DTP & CFA	
		ICT-CO-PJ1: Mini Project/ Apprentice & Educational Tour [80 + 20 = 100 Marks]	
10	DCA	***Semester 1:***	
		ICT-CA-01: Introduction to ICT Tools	
		Any one of these two:	**ICT-CA-21**: Introduction to ICT Resources
			ICT-CA-22: Multimedia and Animation Technology
		ICT-CA-PR1: ICT Tools & ICT Resources/ MAT	
		Semester 2:	
		ICT-CA-03: Internet and Web Technology	
		Any one of these two:	**ICT-CA-41**: Object-Oriented Programming through C++ Language
			ICT-CA-42: Programming and Problem Solving though Python Language
		ICT-CA-PR2: Web Teclmology & C++/ Python Programming	
		ICT-CA-PJ1: Mini Project (100 Marks)	
11	DCFA	***Semester 1:***	
		ICT-CA-01: Introduction to ICT Tools	
		ICT-FA-02: Computerised Financial Accounting	
		ICT-FA-PR1: ICT Tools & CFA	
		Semester 2:	
		ICT-FA-03: Income Tax, GST & Control Techniques	
		ICT-FA-04: Personality and Soft Skills Development	
		ICT-FA-PR2: IT, GST & Soft Skills	
		ICT-FA-PJ : Mini Project/ Apprentice (100 Marks)	
12	DMAT	***Semester 1:***	
		ICT-CA-01: Introduction to ICT Tools	
		ICT-MT-02: Introduction to Multimedia	
		Semester 2:	
		ICT-MT-03: Multimedia Processing Techniques	

		ICT-MT-04: Multimedia Design Principles and Applications	
		ICT-MT-PR: Multimedia Practical	
		ICT-MT-PJ: Mini Project (60 hours) [100 Marks]	
13	DCHM	***Semester 1:***	
		ICT-HM-01: Basics of Computer Hardware	
		ICT-HM-02: Peripherals and Data Storage Devices	
		ICT-HM-PR1: Computer Hardware, Peripherals and Data Storage Devices	
		Semester 2:	
		ICT-HM-03: Computer Networking and Hardware	
		ICT-HM-04: Working and Maintenance of Systems	
		ICT-HM-PR2: Networking, Software Installation & Maintenance	
		Semester 3:	
		ICT-HM-05: Information and System Security	
		ICT-HM-06: System Administration using Linux	
		ICT-HM-PR3: System Security & Administration	
		ICT-HM-OJT: On-the-job training (60 hours) [100 Marks]	
14	PGDIT	***Semester 1:***	
		ICT-CA-01: Introduction to ICT Tools	
		Any one of these two:	**ICT-CA-21**: Introduction to ICT Resources
			ICT-CA-22: Multimedia and Animation Technology
		ICT-CA-PR1: ICT Tools & ICT Resources/ MAT	
		ICT-CA-03: Internet and Web Technology	
		Any one of these two:	**ICT-CA-41**: Object-Oriented Programming through C++ Language
			ICT-CA-42: Programming and Problem Solving though Python Language
		ICT-CA-PR2: Web Technology & C++/ Python	
		ICT-CA-PJ1: Mini Project (100 Marks)	
		Semester 2:	
		ICT-CA-05: SAD & DBMS	
		ICT-CA-06: Web Programming using LAMP	
		ICT-CA-PR3: DBMS & LAMP	
		ICT-CA-07: Object Oriented Programming through Java	
		Any one of these two:	**ICT-CA-81**: Android Programming
			ICT-CA-82: Internet of Things and its Applications
		ICT-CA-PR4: Java & Android Programming/ IOT	
		ICT-CA-PJ2: Major Project (120 hours) [200 Marks]	

15	ADCOA	***Semester 1:***	
		ICT-CA-01: Introduction to ICT Tools	
		Any one of these two:	**ICT-CA-21**: Introduction to ICT Resources
			ICT-CA-22: Multimedia and Animation Technology
		ICT-CA-PR1: ICT Tools & ICT Resources/ MAT	
		Semester 2:	
		ICT-CO-05: Desk Top Publishing and Printing Technology	
		ICT-FA-02: Computerised Financial Accounting	
		ICT-CO-PR2: DTP & CFA	
		ICT-CO-PJ1: Mini Project/ Apprentice (60 hours) & Educational Tour (Excursion)	
		Semester 3:	
		To select the one not taken in Semester 1:	**ICT-CA-21**: Introduction to ICT Resources
			ICT-CA-22: Multimedia and Animation Technology
		ICT-CO-06: e-Governance and e-Commerce	
		ICT-CO-PR3: ICT Resources/ MAT & Online Applications	
		Semester 4:	
		ICT-CO-07: Modern Office Management	
		ICT-CO-08: Secretarial Services	
		ICT-CO-PR4: Office Management & Secretarial Services	
		Semester 5:	
		ICT-CO-09: Communication & Business Correspondence	
		ICT-CO-10: Communicative English and Assamese	
		Semester 6:	
		ICT-CO-11: Entrepreneurship Development	
		ICT-FA-04 : Personality and Soft Skills Development	
		ICT-CO-PJ2: Educational Trip (Excursion) & Major Project/ Apprentice (120 hours) [20 + 180 = 200 Marks]	

Note:

1. Division of Marks for DICTA, DCOA & DSCSP: Each of the papers/ modules of DICTA, DCOA & DSCSP excluding the "Mini Project & Seminar" papers has a Theory Part (carrying 70 marks) and a Practical part (carrying 30 marks). In case of each theory paper 40 marks will be for objective questions and 30 marks will be for descriptive questions.

2. The Theory Papers of all other courses will have 40 marks for objective questions and 60 marks for descriptive questions.

3. Each and every Practical Papers of the Advanced Certificate & Diploma/ PG Diploma/ Advanced Diploma Courses (excluding DICTA, DCOA & DSCSP) will carry 100 Marks.

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Outline Syllabi:

1. ICT-CA-01: Introduction to ICT Tools:

Objective of the Paper:

The goal of this course is to present overview of Information and Communication Technology (ICT) tools used in day to day use of computers and data base operations. The Course has been designed to provide knowledge on various hardware and software components of computer, operating system, various packages used for different applications, data base concepts & operations and various issues related to and application of ICT.

At the end of the course the students will be able to:-

- Acquire the foundation level knowledge required to understand computer and its operations.
- Understand the hardware and software components of the computer.
- Understand the basic concept of operating system and get knowledge about various different operating systems.
- Understand to use the packages of word processing, spread sheet and presentation in detail.
- Understand various data base concepts and operations.
- Understand the issues related to ICT and ICT applications.

Duration: 120 hours (Lectures: 60 hours+ Practicals: 60 hours)

Outline of the Paper

Sl. No.	Topic	Duration (in hours)	
		Theory	Practical
1	Computer Appreciation	04	04
2	Computer Organization	06	06
3	Operating System	12	12
4	Word Processing	05	05
5	Spreadsheet Package	08	08
6	Presentation Package	05	05
7	Data Base Operations	12	12
8	Computer Communication and Internet	04	04
9	Security Overview	02	02
10	Information Technology and Society	02	02
	Total:	**60**	**60**

RECOMMENDED BOOKS

MAIN READING

1. P.K. Sinha and P. Sinha, " Foundations of Computing" , BPB Publication, 2008.
2. Sagman S, "MS Office for Windows XP", Pearson Education, 2007.
3. ITL Educational Society, "Introduction to IT", Pearson Education, 2009.
4. Miller M, "Absolute Beginners Guide to Computer Basics", Pearson Education, 2009.
5. LibreOffice, Getting Started Guide by LibreOffice Documentation Team.
6. OpenOffice.org for DUMMIES by Gurdy Leete, Ellen Finkelstein and Mary Leete.

SUPPLEMENTARY READING

1. Turban, Mclean and Wetherbe, “Information Technology and Management” John Wiely & Sons.
2. Mansfield Ron, “Working in Microsoft Office”, 2008, Tata McGraw-Hill
3. Balagurusamy E, “Fundamentals of Computers”, 2009, Tata McGraw-Hill
4. Mavis Beacon, “All-in-one MS Office” CD based views for self learning, BPB Publication, 2008
5. Perry G, “MS Office 2007”, Pearson Education, 2008.
6. D’Suoza & D’souza, “Learn Computer Step by Step”, Pearson Education, 2006.
7. Kulkarni, “IT Strategy for Business”, Oxford University Press

Refer: Open Office/ LibreOffice/ MS Office Environment for practice.

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2. ICT-CA-21: Introduction to ICT Resources

Objective of the Paper:

This course has been designed to provide an introduction to Computer Hardware and Networking troubleshooting & maintenance. The student will be able to troubleshoot problems of PC and replace the defected parts of the computer. Students will understand the basic networking concepts and they will be able to establish and manage small networks.

At the end of the course students will be able to:

- Assemble and disassemble a PC.
- Effectively use miscellaneous utilities such as: Compression, CD writing, Antivirus etc.
- Establish and configure a small LAN.
- Perform simple network administration operation.

Duration: 120 hours (Lectures: 60 hours+ Practicals: 60 hours)

Outline of the Paper

Sl. No.	Topic	Duration (in hours)	
		Theory	Practical
1	PC Assembly and Operation	15	15
2	Miscellaneous Utilities	15	15
3	Networking Concepts	15	15
4	Network Administration	15	15
	Total:	**60**	**60**

RECOMMENDED BOOKS:

MAIN READING:

1. Scott and Mueller, “Upgrading and Repairing PCs”, Techmedia, New Delhi
2. Troubleshooting, Maintenance and Repairing PCs, Fifth Edition, by Stephen J. Bigelow, Tata McGraw-Hill Publishing Company Limited, New Delhi.
3. PC Upgrade and Maintenance Guide, 15 th Edition, by Marks Minasi, BPB Publications
4. Basic of Networking. “NIIT”, Prentice, Hall of India Private Limited.
5. Networking Protocols and Standards. “NIIT”, Prentice, Hall of India Private Limited.
6. William Stallings, “Data and Computer Communication”, Prentice, Hall of India Private Limited.
7. D. Balasubramanian, “Computer Installation and Servicing”, Tata McGraw-Hill

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3. ICT-CA-22: Multimedia and Animation Technology

Objective of the Paper:

This paper aims to introduce the fundamental elements of multimedia. It will provide an understanding of the fundamental elements in multimedia. The emphasis will be on learning the representations, perceptions and applications of multimedia. Software skills and hands on work on digital media will also be emphasized. On completion of the subject, the students will understand the technologies behind multimedia applications and master the skills for developing multimedia projects. After successfully completing the module student should be able to:

- Summarize the key concepts in current multimedia technology.
- Create quality multimedia software titles.

Duration: 120 hours (Lectures: 60 hours+ Practicals: 60 hours)

Outline of the Paper

Sl. No.	Topic	Duration (in hours)	
		Theory	Practical
1	Introduction to Multimedia	08	08
2	Computer Fonts and Hypertext	10	10
3	Audio fundamentals and representations	10	10
4	Image Fundamentals and representations	10	10
5	Video and Animation	10	10
6	Multimedia Authoring	12	12
	Total:	**60**	**60**

RECOMMENDED BOOKS

MAIN READING

1. Tay Vaughan, “Multimedia making it work”, Tata McGraw-Hill, 2008.
2. Rajneesh Aggarwal & B. B Tiwari, “ Multimedia Systems”, Excel Publication, New Delhi, 2007.
3. Li & Drew, “ Fundamentals of Multimedia” , Pearson Education, 2009.

SUPPLEMENTARY READING

1. Parekh Ranjan, “Principles of Multimedia”, Tata McGraw-Hill, 2007
2. Anirban Mukhopadhyay and Arup Chattopadhyay, “Introduction to Computer Graphics and Multimedia”, Second Edition, Vikas Publishing House.

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4. ICT-CA-03: Internet and Web Technology

Objective of the Paper:

The aim of this course is to provide you the conceptual and technological developments in the field of Internet and web designing with the emphasis on comprehensive knowledge of Internet, its applications and the TCP/IP protocols widely deployed to provide Internet connective worldwide. The World Wide Web with its widespread usefulness has become an integral part of the Internet. Therefore, this course also puts emphasis on basic concepts of web design.

At the end of the course the students will be able to: -

- Review the current topics in Web & Internet technologies.
- Describe the basic concepts for network implementation.

• Learn the basic working scheme of the Internet and World Wide Web.
• Understand fundamental tools and technologies for web design.
• Comprehend the technologies for Hypertext Mark-up Language (HTML).
• Specify design rules in constructing web pages and sites.
• Effectively deal with programming issues relating to VB Script, JavaScript, Java, ASP, Front Page and Flash.
• Figure out the various security hazards on the Internet and need of security measures.

Duration: 120 hours (Lectures: 60 hours+ Practicals: 60 hours)

Outline of the Paper

Sl. No.	Topic	Duration (in hours)	
		Theory	Practical
1	Introduction to Internet	02	02
2	TCP/IP – Internet Technology and Protocol	03	03
3	Internet Connectivity	03	03
4	Internet Network	04	04
5	Services on Internet	04	04
6	Electronic Mail	07	07
7	Current Trends on Internet	03	03
8	Web Publishing and Browsing	10	10
9	HTML Programming Basics	12	12
10	Interactivity Tools and Scripting languages	08	08
11	Internet Security, Information Privacy and Copyright Issues	04	04
Total:		**60**	**60**

RECOMMENDED BOOKS

MAIN READING
1. Greenlaw R and Hepp E, "Fundamentals of Internet and www" , 2nd EL, Tata McGrawHill,2007.
2. Ivan Bayross, "HTML, DHTML, JavaScript, Perl CGI", 3 rd Edition, BPB Publications.
3. D. Comer, "The Internet Book", Pearson Education, 2009.

SUPPLEMENTARY READING
1. M. L. Young,"The Complete reference to Internet", Tata McGraw Hill, 2007.
2. Godbole AS & Kahate A, "Web Technologies", Tata McGrawHill,2008.
3. Jackson, "Web Technologies", Pearson Education, 2008.
4. B. Patel & Lal B. Barik, " Internet & Web Technology ", Acme Learning Publishers
5. Leon and Leon, "Internet for Everyone", Vikas Publishing House.

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5. ICT-CA-41: Object-Oriented Programming through C++ Language

Objective of the Course:
By the end of this course, you will be able to:
- Read and write C++ code

- Use C++ interfaces and libraries
- Understand how to use object oriented design principles in the context of the C++ language
- Understand key concepts such as abstract interfaces, polymorphism, and data abstraction.

Learning Outcomes:
At the conclusion of this course, you should be able to:
- Understand object-oriented programming features in C++,
- Apply these features to program design and implementation,
- Understand object-oriented concepts and how they are supported by C++
- Gain some practical experience of C++
- Understand implementation issues related to object-oriented techniques,
- Build good quality software using object-oriented technique

Duration: 120 hours (Lectures: 60 hours+ Practical/Tutorials: 60 hours)

Outline of the Paper

Sl. No.	Topic	Duration (in hours)	
		Theory	Practical
1	Principles of Object Oriented Programming (OOP)	03	03
2	Elements of C++ Language	06	06
3	Functions	06	06
4	Classes and Objects	06	06
5	Constructors and Destructors	04	04
6	Operator Overloading	06	06
7	Derived Classes and Inheritance	06	06
8	Pointers	04	04
9	Virtual Functions	04	04
10	Streams	04	04
11	Exception Handling	03	03
12	Class Libraries	04	04
13	Advanced Classes	02	02
14	Testing and debugging simple programs	02	02
Total:		**60**	**60**

Recommended Books

Main Reading:

1. S. B. Lippman, C++ Primer, Third Edition, 1998, Addision Wesely.
2. W. Savitch, Problem Solving with C++, Second Edition, 1999, Pearson Education.

Supplementary Reading:

1. R. Lafore, Object Oriented Programming in C++, Fourth Edition, 2001, Techmedia.
2. B. Stroustrup, The Elements of C++ Programming, Third Edition, 2000, Addison Wesley.
3. K. V. Venugopal, R.Kumar and T.Tavishankar, Mastering C++, First Edition, 1997. Tata McGraw Hill.

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6. ICT-CA-42: Programming and Problem Solving though Python Language

Objectives of the Paper:

The objectives of this module are to make the beginners understand the programming language concepts like Data Types, Loops, Functions; Python Lists, Strings, Tuples, Dictionaries, Elementary Data Handling using Pandas, NumPy Arrays, Creating Forms etc.

After completion of this course the learner is expected to analyze the real life problem and write a program in Python to solve the problem. The main emphasis of the module will be on writing algorithm to solve problems and implement in Python. After completion of the module, the learner will be able to

- Draw flow charts for solving different problems
- Develop efficient algorithms for solving a problem
- Use the various constructs of Python viz. conditional, iteration
- Write programs making judicious use of Lists, Strings, Tuples, Dictionaries wherever required
- Manage data using Numpy
- Handle files and create Modules in Python

Duration: 120 Hours - (Theory: 48 hrs + Practical: 72 hrs)

Outline of the Paper

Module Unit	Duration in Hours	
	Theory	**Practical**
1. Introduction to Programming	02	03
2. Algorithm and Flowcharts to solve problems	06	09
3. Introduction to Python	02	03
4. Operators, Expressions and Python Statements	10	15
5. Sequence data types	06	09
6. Functions	10	15
7. File Processing	06	09
8. Modules	02	03
9. NumPy Basics	04	06
Total	**48**	**72**

Reference Books/ Study Material

1. Python Programming- A modular Approach (with Graphics, database, Mobile and Web Applications by Sheetal Taneja and Naveen Kumar, Pearson.
2. Python Network Programming Cookbook by Pradeeban Kathiravelu, Dr. M. O. Faruque Sarkar, PACKT.
3. Head First Python by Paul Berry, O'Reilly
4. Dive into Python by Mark Pilgrim, APress
5. Beginning Programming with Python Dummies by John Paul Meuller.

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7. ICT-CA-05: SAD & DBMS

Objectives:

The Objective of the course is to provide the necessary skills, learning and exposure in developing an information system. This course will allow students to develop background knowledge as well as core

expertise in Database Management Systems. The students will learn Database concept, Data Structure, Data Models, various approaches to Database design, strengths of relational model, Normalization.

At the end of the course the student will be able to:

- Study, Analysis and Design of a System
- Understand Database design and normalisation techniques.
- Use Standard Query Language and its various versions.
- Understand Importance of backup and recovery techniques.
- Develop Database system to handle the real world problem.

Duration: 120 Hours - (Theory: 60 hours + Practical: 60 hours)

Outline of the Paper

Sl. No.	Topic	Duration (in hours)	
		Theory	Practical
1	Basic Concepts of System Analysis and Design	08	08
2	An Overview of Database Management System	04	04
3	An Architecture of the Database System	04	04
4	Relational Database Management System	08	08
5	Normalization	08	08
6	The SQL Language	12	12
7	Backup and Recovery	02	02
8	Security	02	02
9	Integrity	02	02
10	Design and Development of Database Applications	10	10
	Total:	**60**	**60**

RECOMMENDED BOOKS:

MAIN READING

1. Silberschatz A, Korth H.F and Sudarshan S, "Database System Concepts", Fifth Edition, Tata McGraw-Hill, 2006.
2. C.J.Date, " An introduction to Database Systems", Pearson Education, 2007.
3. R. Elmasri, S. B Navathe, " Fundamentals of Database System", Pearson Education, 2007.
4. Desai C. Bipin, "An Introduction to Database Systems", Galgotia Publication, 2009.
5. Elias Awad, "System Analysis and Design", Galgotia Publication

SUPPLEMENTARY READING

1. Leon A and Leon M, "Fundamentals of DBMS", Vijay Nicole & Tata McGraw-Hill, 2007.
2. Gill P.S, "DBMS", I.K. International, 2008.
3. Singh S.K, "Database Systems: Concepts, Design & Applications", Pearson Education, 2008.
4. Leon A and Leon M, "Database Management Systems", Vikas Publishing House.

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8. ICT-CA-06: Web Programming using LAMP

1. Course Objectives:

- To be able to develop web application using open source technologies
- To learn PHP scripting language and deploying application on Apache Web Server
- To learn Apache Web Server configuration
- To learn MySQL database deployment for web applications

2. Prerequisites: Knowledge of Internet, HTML, JavaScript, LINUX, CSS and Database Concepts

Duration: 120 Hours - (Theory: 60 hours + Practical: 60 hours)

Outline of the Paper

Sl. No.	Topics	Duration (in hours)	
		Theory	Practical
1	Installation and Configuration of Apache, PHP & MySQL in Linux Environment	02	02
2	PHP Overview Flow control and building blocks	04	04
3	Working with Functions, Arrays and Objects	05	05
4	Working with Forms	02	02
5	JavaScript	05	05
6	Interacting with MySQL	05	05
7	Working with Cookies, User Sessions, Files, Directories and Images	07	07
8	JSON	05	05
9	Site Security	04	04
10	PEAR and PECL	03	03
11	Code Efficiency	04	04
12	PHP Extensions	03	03
13	AJAX	04	04
14	Caching Engines	03	03
15	Content Management Systems	04	04
	Total:	**60**	**60**

RECOMMENDED BOOKS:

TEXT BOOKS:

1. Julie C Meloni, “Sams Teach Yourself PHP, MySQL and Apache All in One” 4th edition, Pearson Education
2. Jeremy McPeak Beginning JavaScript Wrox Publication
3. Sharanam Shah, Vaishali Shah, “LAMP Programming For Professionals”, SPD, 2010

REFERENCE BOOKS:

1. James Lee and Brent Ware, “Open source web development with LAMP”, Pearson Education

2. Jason Gerner, Morgan Owens, Elizabeth Naramore, Matt Warden, “Professional LAMP: Linux, Apache, MySQL and PHP5 Web Development” WROX publication
3. PHP6 and MySQL Bible –Steve Suehring, Tim Converse and Joyce Park – Wiley India Edition.
4. PHP and MySQL Web Development – Luke Welling, Laura Thomson – Pearson
5. Beginning Ajax with PHP From Novice to Professional, By Lee BabinApress
6. Head First AJAX by Rebecca Riordan , O’Reilly Media
7. Head First PHP& MySQL by Lynn Beighley, Michael Morrison, O’Reilly Media
8. Head First jQuery by Ryan Benedetti and Ronan Cranley, O’Reilly Media
9. Learning jQuery By Jonathon chaffer and Karl Swedberg, O’Reilly Media

List of Software/Learning Websites:
1. http://www.codecademy.com/learn
2. https://www.udemy.com/learn-html5-programming-from-scratch/
3. http://www3schools.com
4. http://www.tutorialspoint.com/ajax/
5. http://www.tutorialspoint.com/jquery/
6. http://www.tutorialspoint.com/php

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9. ICT-CA-07: Object Oriented Programming through Java

Objective of the Course:
The course is designed to impart knowledge and develop skills required to solve real world problems using object oriented approach, Java Language constructs and Unified Modelling Language. This course covers the subject in 3 sections, viz, Introductions to Object Oriented Programming, Introduction to Java Programming Language, Introduction to UML.

After the completion of the course the student is expected to understand:
- Basics of Object Oriented Programming.
- Various Object Oriented programming concepts - Abstraction, Objects and Classes, Inheritance, Polymorphism.
- Basic data structures in Java, Objects and Classes , Super Class, sub-class, Interfaces, Inner classes.
- GUI programming using AWT/Swing.
- Deploying Java Applications.
- Accessing Databases in Java.
- What is unified Modeling Language and Why is it used.
- Using Class, Interface, Interaction, State and Activity, Physical diagrams in modeling software.

Duration: 120 Hours - (Theory: 60 hours + Practical: 60 hours)

Outline of the Paper

S. No.	Topics	Duration (in hours)	
		Theory	**Practical**
1	Introduction to Object Oriented Programming	14	14
2	Introduction to Java programming Language	32	32
3	Introduction to UML	14	14
	Total:	**60**	**60**

RECOMMENDED BOOKS

MAIN READING

1. Timothy Budo, ”An Introduction to Object-Oriented Programming with Java”, Pearson Education, 2009.
2. Martin Fowler,”UML Distilled: A Brief Guide to the Standard Object Modeling Language”, 3rd Edition, Pearson Education, 2009.

SUPPLEMENTARY READING

1. H. Schildt, “The Complete Reference -Java2”, Tata McGraw-Hill, 2008.
2. P. J Dietel and H. M Dietel, “Java How to Program”, 7th Edition, Pearson Education, 2008.
3. Grady Booch, James Rumbaugh, Ivar Jacobson, “Unified Modeling Language User Guide”, 2nd Edition, Pearson Education, 2009.
4. Wu C Thomas, “Introduction to Object Oriented Programming with Java”, 4th Edition, Tata McGraw-Hill, 2008.
5. Balaguruswamy E, “Programming with Java”, Tata McGraw-Hill, 2007.
6. Muthu C, “Essentials of Java Programming”, 2008, Tata McGraw-Hill, 2007.
7. Bhave M.P, Patekar S.A, “Programming with Java”, Pearson Education , 2009.
8. Khurana Rohit , “Object Oriented Programming with C++”, Vikas Publishing House.

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10. ICT-CA-81: Android Programming

Objective: To enable the students to develop Android Applications and publish them.
Prerequisites: Knowledge of Object Oriented Programming using Java
Duration: 120 Hours - (Theory: 60 hours + Practical: 60 hours)

Outline of the Paper

Sl. No.	Topics	Duration (in hours)	
		Theory	Practical
1	Getting Started with Android Programming	02	02
2	Using Android Studio for Android Development	03	03
3	Using the Android Emulator	03	03
4	Activities, Fragments and Intents	07	07
5	The Android User Interface	08	08
6	Designing User Interface with Views	06	06
7	Displaying Pictures and Menus with Views	04	04
8	Data Persistence	04	04
9	Content Providers	03	03
10	Messaging	02	02
11	Location-Based Services	08	08
12	Networking	04	04
13	Developing Android Services	04	04
14	Publishing Android Applications	02	02
	Total:	**60**	**60**

RECOMMENDED BOOKS:

MAIN READING:

1. Wei-MengLee,"Beginning Android 4 Application Development", Wrox publications, 2012
2. Wei-Meng Lee, "BEGINNING Android™ 4 Application Development", John Wiley & Sons, Inc.

REFERENCES:

1. James Steele, Nelson, "The Android Developer's Cookbook: Building Applications with the Android SDK", Addison Wesley Publications 2010 First Edition.
2. Reto Meier, "Professional Android Application Development", Wrox publications, 2009, Second Edition
3. "Android Application Development", Tutorialspoint

Note: Latest and additional good books may be suggested and added from time to time.

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11. ICT-CA-82: Internet of Things and its Applications

Objectives:

After completing the module, the learner will be able to:

- Understand how connected devices work together to update other applications.
- Acquire knowledge to interface sensors and actuators with microcontroller based Arduino platform.
- Writing C programs in Arduino IDE .
- Understand the Communication between microcontroller and PC using serial communication.
- Build IoT based applications and understand how data flows between things.
- Understand how electronic devices control electrical appliances working at 220v AC.
- Understand security aspect of IoT devices.
- Enhance skill set towards better personality development.

Prerequisites: Knowledge of C/ C++ Language Programming

Duration: 120 Hours - (Theory: 50 hrs + Practical: 70 hrs)

Outline Syllabus

Unit No.	Unit	Duration (in Hours)	
		Theory	Practical
1	Introduction to IoT – Applications/Devices, Protocols and Communication Model	06	08
2	Things and Connections	06	08
3	Sensors, Actuators and Microcontrollers	10	14
4	Building IoT Applications	22	32
5	Security and Future of IoT Ecosystem	06	08
	Total:	**50**	**70**

Reference Books/Study Material:

1. Macro Schwartz, "Internet of Things with Arduino- Cookbook", Packt 2016
2. Arshdeep Bajga and Vijay Madisetti, "Internet of Things- A Hands-on Approach" Universities Press, 2014
3. Massimo Banzi, "Getting started with Arduino", 2nd Edition, Oreilly, 2011 [Make:Makezine.com]

4. Macro Schwartz, “Internet of Things with Arduino”, Open Home Automation
5. Michael Margolis, “Arduino Cookbook”, Oreilly, 2011

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12. ICT-CO-01: Basic ICT Tools

Objectives:

The goal of this paper is to make the students familiar to-

1. To make the participants familiar with the computer system: Hardware, Software and Internet.
2. To make the participants familiar with the Office Packages and use these packages in doing their personal/ official works.

Duration: 120 hours (Lectures: 60 hours+ Practicals: 60 hours)

Marks Distribution: Theory – 70, Practical – 30

Outline of the Paper

Sl. No.	Topic	Minimum number of hours	
		Theory	Practical
1	Introduction to the Computer System	09	04
2	Computer Software	09	05
3	Office Packages	32	39
4	Internet Fundamentals	10	12
Total:		**60**	**60**

References:

1. Foundations of Computing - by Pradeep K. Sinha., Priti Sinha.
2. IT Tools and Business Systems – Prof. Satish Jain, Shashank Jain, Shashi Singh, M.Geetha Iyer.
3. Fundamentals of Computers – E Balagurusamy.
4. LibreOffice, Getting Started Guide by LibreOffice Documentation Team.
5. OpenOffice.org for DUMMIES by Gurdy Leete, Ellen Finkelstein and Mary Leete.
6. 'O' Level made simple: Internet Technology and Web Design – Satish Jain, Shashank Jain.
7. Data Communications and Networking – Behrouuz A Forouzan.
Links: 1. https://wiki.documentfoundation.org/images/c/c4/0100GS3-GettingStartedLibO.pdf

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13. ICT-CO-02: DTP and Financial Accounting

Objectives:

The goal of this paper is to present overview of DTP and Computerised Accounting tools used in day to day use of computers in Offset press/ Industry use. The Course has been designed to provide knowledge on various hardware and software components of computer used in Offset press and maintaining Accounting in an Industry.

At the end of the course the students will be able to:-

- Use a Page Layout Software like Pagemaker or Scribus for designing pages
- Use an Image Manipulation Software like Adobe Photoshop or GIMP Image Editor for editing photos.
- Use a Vector Graphics Software like Corel Draw, Inkscape, or LibreOffice Draw for drawing vector graphics.
- Use a Bilingual Software for typing documents in Assamese or any other regional language.
- Use an Accounting Software like Tally ERP9 or GNU Cash.

Duration: 120 hours (Lectures: 60 hours+ Practicals: 60 hours)

Marks Distribution: Theory – 70, Practical – 30

	Marks Distribution	
	Theory	**Practical**
Part A: Desktop Publishing	35	15
Part B: Financial Accounting	35	15
Total:	**70**	**30**

Outline of the Paper:

Sl. No.	**Topic**	**Minimum number of hours**	
		Theory	**Practical**
	Part A: Desktop Publishing		
1	Page Layout Software	09	09
2	Image Manipulation Software	09	09
3	Vector Graphics Software	09	09
4	Bilingual Software (for Assamese Typing)	03	03
	Part B: Financial Accounting		
5	Fundamental of Accounting	05	-
6	Tally ERP 9 / GNU Cash	25	30
Total:		**60**	**60**

References:

1. Vishnu Priya Singh, Meenakshi Singh, “DTP Course Book”, Computech Publications Ltd.
2. Scribus DTP Software Tutorial: https://www.lifewire.com/scribus-software-tutorials-1078942
3. GNU Image Manipulation Program User Manual
4. GIMP Tutorials: https://www.gimp.org/tutorials/
5. Inkscape Tutorials: https://inkscape.org/learn/tutorials/
6. LibreOffice Draw - Learning to Design: Https://www.edu.xunta.gal/espazoAbalar/sites/espazoAbalar/files/datos/1426066131/contido/LibreOffice%20Draw/Draw%20-%20Carpeta%20autocontenida/Draw/intro.html
7. B.B. Dam, R.A. Sarda, R. Barman, B. Kalita, Theory And Practice Of Accountancy, Capital

Publishing Company
8. “Tally Power Of Simplicity- Tally.ERP 9 At A Glance”, Tally Solutions Pvt. Ltd.
9. A. K. Nadhani & K. K. Nadhani, Implementing Tally ERP 9, BPB Publication
10. A. K. Nadhani & K. K. Nadhani, Implementing Fact Accounting For Widows, BPB Publication
11. GnuCash Tutorial and Concepts Guide: https://code.gnucash.org/docs/C/gnucash-guide/

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14. ICT-CO-03: Computer Networking and Linux

Objectives:

- To enable the students to have some basic ideas on Computer Networking and Internet
- To enable the students to have some basic skills to handle the Linux Operating System

Duration: 120 hours (Lectures: 60 hours+ Practicals: 60 hours)

Marks Distribution: Theory – 70, Practical – 30

	Marks Distribution	
	Theory	**Practical**
Part A: Computer Networks And Communication	35	15
Part B: Linux OS	35	15
Total:	**70**	**30**

Outline of the Paper:

Sl. No.	**Topic**	**Minimum number of hours**	
		Theory	**Practical**
	Part A: Computer Networks And Communication		
1	Introduction to Networking	05	05
2	Categories of Network	01	01
3	Wireless Network	02	02
4	Internet	08	08
5	Transmission Media	06	06
6	Network Connecting Devices	04	04
7	Network Setup	04	04
	Part B: Linux OS		
1	Introduction to Linux OS	01	01
2	Basic Operations	08	08
3	Text Editors	03	03
4	Linux based Office Tools	06	06
5	Network setup	03	03
6	Installing devices	03	03

7	Using external storage devices	04	04
8	Playing and Editing audio and video files	02	02
Total:		**60**	**60**

Books for References:

- Behrouz A Forouzan, "Data Communication and Networking", Tata McGraw-Hill, 2008
- Andrew S. Tanenbaum, "Computer Networks", Fourth Edition, Pearson Education.
- Sumitabha Das, "Unix : Concepts and Applications", Tata McGraw-Hill , 2008.

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15. ICT-CO-04: Basic On-line Applications & Google Workspace

Objectives:

- To enable the students to have some basic ideas on Online Application
- To enable the students to have some basic idea on how to handle electronic devices like- Mobile Phones, Tablets etc.
- To enable the students to have some basic ideas on Online Transactions and Digital Payments

Duration: 120 hours (Lectures: 60 hours+ Practicals: 60 hours)

Marks Distribution: Theory – 70, Practical – 30

	Marks Distribution	
	Theory	**Practical**
Part A: Basic Online Applications	35	15
Part B: Google Suite & Multimedia Packages	35	15
Total:	**70**	**30**

Outline of the Paper:

Sl. No.	**Topic**	**Minimum number of hours**	
		Theory	**Practical**
	Part A: Basic Online Applications		
1	Introduction to Digital Devices	05	05
2	Operating Digital Devices	05	05
3	Accessing Services Through Internet	05	05
4	Communications Using The Internet	05	05
5	Internet & Mobile Applications	05	05
6	Safety and Security in Digital Technology	05	05
	Part B: Google Workspace & Multimedia Packages		
7	Google Workspace	20	20
8	Multimedia Packages	10	10
Total:		**60**	**60**

Books for References:

1. NDLM hand book-English-final
2. The Ultimate Guide to G Suite, Zapier Team
3. Sumitabha Das, "Unix : Concepts and Applications", Tata McGraw-Hill , 2008.

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16. ICT-CO-05: Desk Top Publishing and Printing Technology

Objectives:

The goal of this course is to present overview of Information and Communication Technology (ICT) based Publishing & Printing Technology. The programme has been designed to develop some persons among the community skilled in the field of Desktop Publishing and Printing Technology.

At the end of the programme the students will be able to:-

- Acquire the foundation level knowledge on publishing.
- Gather basic ideas on publishing related Hardware & Software components.
- Gather both theoritical and practical knowledge on Desktop Publishing.
- Understand to use the different packages of Page Composition, Graphics Illustration and Image Manipulation in detail.
- Gather basic ideas on Printing Technology.

Duration: 120 hours (Lectures: 60 hours+ Practicals: 60 hours)

Outline of the Paper

Sl. No.	Topic	Duration (in hours)	
		Theory	Practical
1	Introduction to Publishing	06	06
2	Document Development	03	03
3	Text Processing in Documents	11	11
4	Image and Graphics	08	08
5	Basics of Colour and Colour Separations	04	04
6	Page Layout Design and Proofing	11	11
7	Using Objects and Templates	02	02
8	Raster Image Processing	03	03
9	HTML & CSS	04	04
10	Introduction to Printing Technology	08	08
Total:		**60**	**60**

RECOMMENDED BOOKS:

MAIN READING:

1. VK Jain, "'O' Level Module M3.2 – Desktop Publishing & Presentation Graphics", BPB Publication, 2001
2. Helmut Kipphan, "Handbook of Print Media – Technologies and Production Methods", Springer, 2001
3. Vishnu Priya Singh, Meenakshi Singh, "DTP Course Book", Computech Publications Ltd.
4. Scribus DTP Software Tutorial: https://www.lifewire.com/scribus-software-tutorials-1078942
5. GNU Image Manipulation Program User Manual

6. GIMP Tutorials: https://www.gimp.org/tutorials/
7. Inkscape Tutorials: https://inkscape.org/learn/tutorials/
8. LibreOffice Draw - Learning to Design:
Https://www.edu.xunta.gal/espazoAbalar/sites/espazoAbalar/files/datos/1426066131/contido/LibreOffice%20Draw/Draw%20-%20Carpeta%20autocontenida/Draw/intro.html
9. B.B. Dam, R.A. Sarda, R. Barman, B. Kalita, Theory And Practice Of Accountancy, Capital Publishing Company

ASSIGNMENTS: Student may be asked to do assignments using the Page Payout, Raster Image Processing and Vector Graphics Editor software mentioned below.

SOFTWARE: The software required for this course are the Page Payout applications PageMaker (in Windows Platform) & Scribus (in Linux Platform), both of the Raster Image Processing applications Photoshop (in Windows Platform) or GIMP Image Editor and Vector Graphics Editor applications CorelDraw (in Windows Platform), either Inkscape and LibreOffice Draw (in Linux Platform), apart from the Windows and Linux Operating Systems. In addition to the these, students to be given ideas on Lucidpress Online Broacher Making Software and some bilingual software like Ramdhenu/ Portable Rodali for Windows platform or Indic Onscreen Keyboard (IOK)/ IBUS for Linux platform will be required.

Note: For Practical Classes follow the syllabus of the paper **ICT-CO-02: Part-A - Desktop Publishing.**

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17. ICT-CO-06: e-Governance and e-Commerce

Objective: This paper will make students understand the concepts and applications of e-Governance and e-Commerce.

Outline of the Paper

S. No.	Topics	Duration (in hours)	
		Theory	Practical
	Part A : e-Governance		
1	Introduction to e-Governance	04	02
2	e-Governance : Conceptual Framework	03	02
3	e-Governance : Initiatives in India	03	03
4	Improving Self- Governance Through ICT	05	05
5	Role of ICT in Rural Development	02	03
6	Delivery of Citizen Services: Role of ICT	02	05
7	National e-Governance Plan (NeGP)	02	02
8	Infrastructure of e-Governance	03	02
9	Maturity Model, e-Readiness, Challenges	02	02
10	Introduction to m-Governance	04	04
	Part B : e-Commerce		
11	Introduction to e-Commerce	12	03

12	Technology for Online Business	06	10
13	Applications in e-Commerce	04	08
14	Virtual Existence	08	09
	Total:	**60**	**60**

Suggested Readings:

1. Murty, C.V.S., E-Commerce, Himalaya Publications, New Delhi
2. Kienam, Managing Your E-Commerce Business, Prentice Hall of India, N. Delhi.
3. Kosiur, Understanding E-Commerce, Prentice Hall of India, N. Delhi.
4. Kalakota, Whinston, Frontiers of Electronic Commerce, Addison Wesley.
5. IGNOU Study Material: MPA-017 Electronic Governance

Note:

1: Latest and additional good books may be suggested and added from time to time.

2. For Practical Classes follow the syllabus of the paper **ICT-CO-04: Part A: Basic Online Applications**.

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18. ICT-CO-07: Modern Office Management

Objective: This paper will make students understand the Basic concepts and Procedures of Modern Offices.

Outline of the Paper

S. No.	Topics	Duration (in hours)	
		Theory	Practical
1	Modern Office	04	04
2	Modern Office Appliances and Furnitures	06	06
3	Office Accommodation and Layout	07	07
4	Office Stationeries and supplies	08	08
5	Records Management	08	08
6	Electronic Data Processing	05	05
7	Planning and Controlling of Office Functions	07	07
8	Personnel Management	07	07
9	Time Management	04	04
10	Stress Management	02	02
11	Conflict Management	02	02
	Total:	**60**	**60**

Recommended Books:

1. RK Sharma, Shashi Gupta and Sushil Nayar, “Office Management and Procedure”, Kalyani Publication, Ludhiana
2. PK Gupta, “Office Management”

3. Ghosh and Aggarwal, “Office Management”
4. Gupta, Bansal, Jain and Malik, “Office Management”
5. Dr. IM Sahai, “Modern Office Management”
6. Singh and Chhabhria, “Office Management and Procedure”, Dhanpat Rai and Sons, New Delhi
7. BN Tondon, “Manual of Office Management and Correspondence”, S Chand and Co., Ram Nagar, New Delhi
8. B.R. Duggal, “Office Management”, Kitab Mahal, New Delhi.
9. Dr. R.C. Bhatia, “Principles of Office Management”, Lotus Press, Darya Ganj, New Delhi-110002
10. S.P. Arora, “Office Organisation and Management”, Vikas Publishing House.
11. R.K. Chopra, “Administrative Office Management”, Himalaya Publishing House.
12. Duggal, Balraj, “Office Management and Commercial Correspondence”, Kitab Mahal, New Delhi.
13. Chhabra, T. N., Modern Business Organisation, Dhanpat Rai & Sons, New Delhi.
14. P. K. Ghosh, “Office Management”, Sultan Chand & Sons. New Delhi
15. R. K. Chopra, “Office Management”, Himalaya Publishing House
16. Chopra & Chopra, “Office Management”, Himalaya Publications
17. Sharma & Gupta, “Office Organisation & Management”, Kalyani Pub.
18. Krishna Murty, “Office Management”, S. Chand Publications

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19. ICT-CO-08: Secretarial Services

Objectives:
The main objective is to familiarize the students with the activities of a modern office, role of a Private Secretary in an office besides gaining essential skills in handling of various office operations. As it is very important for an Executive Assistant to write rapidly and accurately, the knowledge of art of writing spoken sounds with the help of principles of Sir Isaac Pitman would help the students to take notes and carry out office work speedily.

Outline of the Paper

Sl. No.	Topic	Duration (in hours)	
		Theory	Practical
1	Secretarial Services	07	07
2	Handling of Office Machines and Equipments	08	08
3	Organizing Meetings	06	06
4	Appointments and Travel Arrangements	05	05
5	Public Relation	04	04
6	Income Tax, Auditing and Banking	05	05
7	Essential Tools	04	04
8	Office Correspondence and Mails	05	05
9	Management Reporting	06	06
10	Introduction to Phonography	10	10
	Total:	**60**	**60**

Reference Books -
1. Secretarial Practice - B.N.TANDON
2. Secretarial Practice - S.A.Sherlekr
3. Secretarial Practice - M.C Kuchhal.

4. Secretarial Services by Evelyn Anstin, Macdonald &Evavs.
5. Shorthand Made Easy for Beginners, O.P. Kuthiala, Pitman S.S. Publications
6. Phono Phrase Book, O.P. Kuthiala, Pitman S.S. Publications, New Delhi.
7. Modern Phrase Book, N.V. Krishna Murty.
8. Way to High Speed Writing, O.P. Kuthiala.
9. Principles of Modern Phraseography, Edgar E. Thorpe.
10. Shorthand Made Easy for Beginners, O.P. Kuthiala, Pitman S.S. Publications

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20. ICT-CO-09: Communication & Business Correspondence

Objectives:

This paper will helps students to develop verbal and non-verbal communication skills placing emphasis on the practical applications of both. After the Successful Completion of the Course the student must be able to Communicate Clearly in the day-to-day Business World and Government system.

Outline of the Paper

Sl. No.	Topic	Duration in hours	
		Theory	Practice
1	Introduction to Communication	08	07
2	Business Correspondence	15	15
3	Banking Correspondence	12	13
4	Government Correspondence	15	15
5	Other Official Correspondence	05	05
6	Office meetings	05	05
Total:		**60**	**60**

Suggested Readings:

- Sinha, K.K., Business Communication, Galgotia and Sons, New Delhi.
- P.K. Ghosh, “Office Management”, Sultan Chand & Sons. New Delhi
- Chawla, Shailesh K. Essential Business Communication, Mayur Paper Back.
- Campbell, Jeremy, Grammatical Man. Simon & Schuster.
- Rajendra Pal Korahill, “Essentials of Business Communication”, Sultan Ch and & Sons,New Delhi, 2006.
- Ramesh, MS, & C. C Pattanshetti, “Business Communication”, R.Chand&Co, New Delhi, 2003.
- Rodriquez M V, “Effective Business Communication Concept” Vikas Publishing Company, 2003.

Note: Latest and additional good books may be suggested and added from time to time.

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21. ICT-CO-10: Communicative English and Assamese

Objective:

1. To enable the students to communicate correctly and properly in Basic English communication.
2. To enable the student to write correct English and Speak in the proper order and fluency.

Outline of the Paper

Sl. No.	Topic	Duration in hours for Theory & Practice
1	English for Social Purposes	10
2	English for Academic Purposes	10
3	English for Occupational Purposes	12
4	English for Creative Purposes	13
5	Supplementary Modules in English 1. Letters 2. Usage 3. Idioms 4. Phrasal Verbs 5. Phonetics	15
6	Assamese for Social Purposes	10
7	Assamese for Academic Purposes	10
8	Assamese for Occupational Purposes	12
9	Assamese for Creative Purposes	13
10	Supplementary Modules in Assamese 1. Letters (চিঠি) 2. Usage (প্রয়োগবিধি) 3. Idioms (জতুৰা ঠাচ) 4. Phrasal Verbs (খণ্ডবাক্য) 5. Phonetics (ধ্বনিতত্ত্ব)	15
Total:		**120**

Referecne Books:

1. Mohan K. Das: Developing Communication Mac Millan Press, New Delhi.
2. Tom Allens & Walter: English for Specific Purpose, Cambridge University Press.
3. G. Taylor: English Conversation Practice, Tata McGrow-Hill Publishing Company Ltd.
4. Raymond Murphy: Essential English Grammar, Cambridge University Press
5. Wren and Martin, High School English Grammar, S.Chand Publications
6. Sutapa Benerjee, English For Engineering and Management, S.Chand Publications

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22. ICT-CO-11: Entrepreneurship Development

Objective: To make the students aware about Entrepreneurship & SSI, how to prepare business plans and implement the project.

Outline of the Paper

Sl. No.	Topic	Duration in hours	
		Theory	Practice
1	Entrepreneurship	15	15
2	Small Scale Industries	15	15

3	Preparing the Business Plan (BP)	15	15
4	Implementation of the Project	15	15
Total:		**60**	**60**

Suggested Readings:

1. Mark. J. Dollinger, Entrepreneurship – Strategies and Resources, Pearson Edition.
2. Udai Pareek and T.V. Rao, Developing Entrepreneurship
3. S.V.S. Sharma, Developing Entrepreneurship, Issues and Problems
4. Srivastava, A Practical Guide to Industrial Entrepreneurs
5. Government of India, Report of the Committee on Development of Small and Medium Entrepreneurs, 1975

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23. ICT-FA-02: Computerised Financial Accounting

Objectives:

The objective of the course is to develop some skilled person among the community. On successful completion of the programme, the students will be enabled to effectively use a computer for the purposes of financial accounting.

Duration: 120 hours (Lectures: 60 hours+ Practicals: 60 hours)

Outline of the Paper

Sl. No.	Topic	Duration (in hours)	
		Theory	Practical
1	Introduction to Business System	03	03
2	Basic Concepts of Financial Accounting	02	02
3	Book Keeping	06	06
4	Books of Accounts	06	06
5	Organisation for Financial Accounting, Control and Audit	06	06
6	Computerised Financial Accounting	06	06
7	Financial Accounting Computer Packages	08	08
8	Role of Programmer in Financial Accounting	15	15
9	Organisation, Controls and Security in Computerised Environment	02	02
10	Electronic Commerce	06	06
	Total:	**60**	**60**

RECOMMENDED BOOKS:

Main Reading:

1. P. H. Bassett, Computerised Accounting, BPB Publication
2. T. S. Grewal, Double Entry Book Keeping, Sultan Chand
3. A. K. Nadhani & K. K. Nadhani, Implementing Tally ERP 9, BPB Publication
4. A. K. Nadhani & K. K. Nadhani, Implementing Fact Accounting for Widows, BPB Publication

Supplementary Reading:

1. J.R. Monga, Company Accounts, Mayur Paperbacks
2. Shukla, Grewal and Gupta, Advance Accounts, Sultan Chand & Company
3. S.N. Maheswari, Financial Accounting, Vikash Publication
4. S.N. Maheswari, Problems & Solutions in Advanced Accountancy Vol. I, Vikash Publication
5. B.B. Dam, R.A. Sarda, R. Barman, B. Kalita, Theory and Practice of Accountancy, Capital Publishing Company

ASSIGNMENTS: Student may be asked to do assignments for writing in Cash Book & Ledger and preparing Profit & Loss account and Balance sheet manually as well as using the Tally and other accounting packages in Computer.

SOFTWARE: The software required for this course are any Spreadsheet Package, Tally, GNU Cash packages apart from the Windows and Linux Operating Systems.

Note: For Practical Classes follow the syllabus of the paper **ICT-CO-02: Part-B- Financial Accounting**.

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24. ICT-FA-03: Income Tax, GST & Control Techniques

Objective:

After completion of the course students will get ideas on the rules regarding Income Tax, Sales Tax, VAT, GST etc., and will know to prepare the relevant necessary documents. Students will also get ideas on preparation of Payroll, Salary Statements and Pay Slips. Students will also get ideas on functions of Share Market and Equity Market.

Duration: 120 hours (Lectures: 60 hours+ Practicals: 60 hours)

Outline of the Paper

Sl. No.	Topic	Duration in hours	
		Theory	Practical
1	Income Tax	13	13
2	Goods & Service Tax	13	13
3	E-Filing of Returns	08	08
4	Cost Planning	09	09
5	Budgeting	09	09
6	Stock Market	08	08
Total:		**60**	**60**

Suggested Readings:

1. Taxation- Vinod Kr. Singhania, Taxmann Publication, New Delhi.
2. Official publication of national institute of Financial Planning, New Delhi.
3. Official Publication of CBDT, New Delhi.
4. B.B. Lal: Direct Taxes, Income Tax, Wealth Tax and Tax Planning; Pearson Eduction, New Delhi.
5. Ahuja, Girish and Gupta, Ravi, Systematic Approach to Income Tax, Bharat Law House, Delhi
6. Gitman and Joehnk, Fundamentals of Investing, Pearson.
7. Chandra, Prasanna, Investment Analysis and Portfolio Management, Tata McGraw Hill.

Software: Excel Utility available at https://www.incometaxindiaefiling.gov.in

Note: Latest and additional good books may be suggested and added from time to time.

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25. ICT-FA-04: Personality and Soft Skills Development

Objective:

After completion of the course students will be familiar with different aspects of personality, role of soft skills in personality development and some interview preparation techniques.

Duration: 120 hours (Lectures: 60 hours+ Practices: 60 hours)

Outline of the Paper

Sl. No.	Topic	Duration in hours	
		Theory	Practice
1	Introduction to Personality	10	10
2	Personality Determinants	12	12
3	Personality Development	13	13
4	Interpersonal and Group Skills	15	15
5	Interview Preparation	10	10
Total:		**60**	**60**

Suggested Readings:

1. Hurlock, Elizabeth B, Personality Development, Tata McGraw Hill, New Delhi
2. McGrath, E.H., Basic Managerial Skills for All, Prentice Hall of India Pvt. Ltd., New Delhi
3. Wehtten, David A and Kim S Cameron, Developing Managerial Skills, Pearson Education, New Delhi
4. R.K. Mishra, "Personality Development", Rupa Publications
5. S.K.P. Selvam, "Personality Development", APH Publication Corporation

Note: Latest and additional good books may be suggested and added from time to time.

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26. ICT-MT-02 : - Introduction to Multimedia

Objective:

The objective of this course is to provide concept about an application, which uses a collection of multiple media sources e.g. text, graphics, images, audio, animation and video. Students will learn about Multimedia, which is a field concerned with the computer-controlled integration of text, graphics, drawings, still and moving images (Video), animation, audio, and any other media where every type of information can be represented, stored, transmitted and processed digitally.

Duration: (Lectures: 60 Hours, + **Practicals:** 60 Hours**)**

Outline of the Paper

Sl. No.	Topic	Minimum No. of Hours	
		Theory	Practical
1.	Introduction to Multimedia	08	08

2.	Representation of Multimedia Objects	20	20
3.	Concept of Multimedia Editing	10	10
4.	Introduction to Compression Technology	06	06
5.	Multimedia Application Design	06	06
6.	Multimedia Authoring and Publishing	10	10
	Total:	**60**	**60**

Reference:

MAIN READING

1. Tay Vaughan, "Multimedia making it work", Tata McGraw-Hill, 2008.
2. Rajneesh Aggarwal & B. B Tiwari, "Multimedia Systems", Excel Publication, New Delhi, 2007.
3. Li & Drew, "Fundamentals of Multimedia" , Pearson Education, 2009.

SUPPLEMENTARY READING

1. Parekh Ranjan, "Principles of Multimedia", Tata McGraw-Hill, 2007
2. Anirban Mukhopadhyay and Arup Chattopadhyay, "Introduction to Computer Graphics and Multimedia", Second Edition, Vikas Publishing House.

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27. ICT-MT-03: - Multimedia Processing Techniques

Objective of the Course:

The objective of this course is to provide a basic knowledge about processing and editing of multimedia content with more emphasis on image processing. The students will be able to understand how to create, edit and modify the multimedia content using different software tools.

Duration: 120 Hours **(= Lectures:** 60 Hours + **Practicals:** 60 Hours**)**

Outline of the Paper

Sl. No.	Topic	Minimum No. of Hours	
		Theory	**Practical**
1.	Introduction	02	02
2.	Digital representation of Color	02	02
3.	Image Capture	02	02
4.	Scanning	02	02
5.	Image Processing	04	04
6.	Scalable Vector Graphics (SVG)	02	02
7.	Introduction to MIDI	02	02
8.	Image Editing	20	20
9.	Image and Graphics Pattern Generation	10	10
10.	Sound Editing	06	06

11.	Video Editing	08	08
	Total:	**60**	**60**

Reference: Same as **ICT-MT-02 : - Introduction to Multimedia**

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28. ICT-MT-04: - Multimedia Design Principles and Applications

Objective of the Course:

This course will teach the use of visually rich and dynamic graphics elements to enhance web pages and sites. Advanced concepts in page layout and site optimization will be studied with emphasis on principles used to craft dynamic web pages that get noticed. Exercises and projects will allow students to apply the principles of web design to their own sites that will be created in the course.

Duration: (Lectures: 60 Hours, + **Practicals:** 60 Hours**)**

Outline of Course

Sl. No.	Topic	Minimum No. of Hours	
		Theory	**Practical**
1.	Design Overview	06	06
2.	Elements of Visual Design	12	12
3.	Human Computer Interface Design	10	10
4.	Information Architecture	08	08
5.	Animation Design	12	12
6.	Visual Effects	08	08
7.	Application Examples/ Case studies	04	04
	Total:	**60**	**60**

Reference:

MAIN READING:

1. Designing Interactive Systems: People, Activities, Contexts, Technologies, by David Benyon
2. Designing Visual Interfaces: Communication Oriented Techniques, by Kevin Mullet and Darrell Sano
3. Show Me the Numbers: Designing Tables and Graphs to Enlighten , by Stephen Few
4. An Introduction to Digital Multimedia by Terry Michael Savage and Karla E Vogel
5. Basics Animation: Digital Animation by Andy Chong
6. Envisioning Information by Edward R. Tufte
7. Thinking with Type: A Primer for Designers: A Critical Guide for Designers, Writers, Editors, & Students by Ellen Lupton
8. Design Basics by David Lauer, Stephen Pentak

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29. ICT-HM-01: Basics of Computer Hardware

Objective:
On completion program the students will be able to understand the fundamentals of Computer Hardware, handling, testing & troubleshooting of personal computer problems.

Duration: 120 Hours (= Theory: 45 Hours + Practical: 75 Hours)

Outline of the Paper

Module Unit	Duration in Hours	
	Theory	**Practical**
1. Power Supplies	10	20
2. Mother Board	15	20
3. Chipset	05	10
4. Primary and Secondary Memories	10	15
5. Buses & I/O Ports	05	10
Total:	**45**	**75**

Reference Books/Study Material:

1. Book Title : Upgrading and Repairing PCs
Author : Scott Mueller
Edition : 22nd Edition
Publisher : Que

2. Book Title : Modern Computer Hardware Course
Author : Lotia Manahar
Publisher : B P B Publications

3. Book Title : Computer Hardware
Author : Hing Lown
Publisher : Independently Published (Copy Right Material of Author)

4. Book Title : Computer Hardware and Troubleshooting Lab Guide: (Understand, Repair, Upgrade and do troubleshooting your computer (PC's) yourselves)
Author : G. Ganesh Shashidhar
Publisher : Independently Published (Copy Right Material of Author)

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30. ICT-HM-02: Peripherals and Data Storage Devices

Objective:
Subject contents are designed with an intention to provide some basic ideas about functionings of the basic peripheral devices like Mouse, Keyboard and different Printers; some basic ideas on functionings of Display and Data Storage Divices and finally deals with general troubleshooting and maintenance of these peripherals and divices using some System Diagnostic Tools.

Duration: 120 Hours (= Theory: 45 Hours + Practical: 75 Hours)

Outline of the Paper

Module Unit	Duration in Hours	
	Theory	**Practical**
1. Mouse, Key Board, Printers	10	25
2. Display Devices and Data Storage Devices	15	25
3. System Diagnostic Tools	20	25
Total:	**45**	**75**

* Duration may change based upon delivery of contents

Reference Books/Study Material

1. Book Title : Upgrading and Repairing PCs
Author : Scott Mueller
Edition : 22nd Edition
Publisher : Que

2. Book Title : Modern Computer Hardware Course
Author : Lotia Manahar
Publisher : B P B Publications

3. Book Title : Computer Hardware
Author : Hing Lown
Publisher : Independently Published (Copy Right Material of Author)

4. Book Title : Computer Hardware and Troubleshooting Lab Guide:
(Understand, Repair, Upgrade and do troubleshooting your computer (PC's) yourselves)
Author : G. Ganesh Shashidhar
Publisher : Independently Published (Copy Right Material of Author)

5. Book Title : Personality Development and Soft Skill
Author : Barun K. Mitra
Publisher : Oxford University Press, 2nd Edition

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31. ICT-HM-03: Computer Networking and Hardware

Objective:

Subject contents are designed with an intention to provide an Introduction to Computer Networks, other relevant networks and extensively used Network peripherals. it also focuses on various types of internet connections, network services, network security and finally deals with general troubleshooting and maintenance of Networks and networking peripherals.

Duration: 120 Hours (= Theory: 45 Hours + Practical: 75 Hours)

Outline of the Paper

Module Unit	Duration in Hours	
	Theory	**Practical**
1. Network Hardware Devices	15	30

2. Internet	20	20
3. Bluetooth and Wireless Networking	05	15
4. Networking Diagnostic Tools	05	10
Total:	**45**	**75**

Reference Books/Study

1. Book Title : Computer Network and Data Communications: Guide Question and Answer
   Author: Prof. Satish Jain
   Publisher : B P B Publication
2. Book Title : Computer Network
   Author: Suresh Fatehpuria, Dimple Jayaswal
   Publisher : Genius
3. Book Title : Internetworking Technology: An Engineering Perspective
   Author: Rahul Banerjee
   Publisher : Prentice Hall
4. Book Title : Fundamental of Wireless Communication
   Author: David Tse and Pramod Viswanath
   Publisher : Cambridge University Press)

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32. ICT-HM-04: Working and Maintenance of Systems

Objective:
After completion of this paper the learner will be able to diagnose the problem Desktop /Laptop /Mobile/ Note pad etc. and repair.

Duration: 120 Hours (= Theory: 45 Hours + Practical: 75 Hours)

Outline of the Paper

Module Unit	Duration in Hours	
	Theory	**Practical**
1. Computer Hierarchy	05	10
2. Processor	10	15
3. Laptop	15	20
4. BIOS, Booting and POST Test	05	10
5. OS and Application Software	05	10
6. Virus Removal and Protection	05	10
Total:	**45**	**75**

Recommended Books/Study Material

1. Book Title : Upgrading and Repairing PCs

Author : Scott Mueller
Edition : 22nd Edition
Publisher : Que
ISBN-13 : 978-0789756107
ISBN-10 : 9780789756107

2. Book Title : Modern Computer Hardware Course
   Author : Lotia Manahar
   Publisher : B P B Publications
   ISBN No. : 9788183331678, 818333167X

3. Book Title : Computer Hardware
   Author : Hing Lown
   Publisher : Independently Published (Copy Right Material of Author)
   ISBN No. : 9781718124493

4. Book Title: Computer Hardware and Troubleshooting Lab Guide:
   (Understand, Repair, Upgrade and do troubleshooting your Computer (PC's) yourselves)
   Author : G. Ganesh Shashidhar
   Publisher : Independently Published (Copy Right Material of Author)
   ISBN No. : 1983336319, 9781983336317

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33. ICT-HM-05: Information and System Security

Objective:
This course has been designed to provide an introduction to Information Security. The basics ideas behind Authentication, Network, Internet, E-mail Wireless Security has been covered here. The students are introduced to Computer Forensics and Information Security Laws.

Duration: 120 Hours (= Theory: 60 Hours + Practical: 60 Hours)

Outline of the Course

S. No.	Topics	Duration in Hours	
		Theory	Practical
1	Basics of Information Security	10	10
2	Security threats and Vulnerabilities	08	08
3	Cryptography	06	06
4	Identification and Authentication	02	02
5	Network Security	08	08
6	Security Tools and Techniques	02	02
7	Internet Security	05	05
8	E-mail Security	02	02
9	Wireless Security	05	05
10	Risk Assessment and Disaster Recovery	06	06

11	Computer Forensics	04	04
12	Information Security laws	02	02
	Total:	**60**	**60**

RECOMMENDED BOOKS:

MAIN READING:

1.Network Security Bible Eric cole and Ronald L KrutzWile dreamtech India Pvt Ltd, New Delhi
2.Fundamentals of Network Security by Eric Maiwald , Dreamtech Press
3.Absolute Beginner's Guide To: Security, Spam, Spyware & Viruses By Andy Walker, Publisher: Que
4.Computer Security Basics, 2nd Edition By Rick Lehtinen, Publisher: O'Reilly

SUPPLEMENTARY READING:

1. Network Security Essentials: Applications and standards Stallings, Pearson Education Pvt. Ltd, Delhi
2. Computer viruses, Computer Security, A Global challenge by Cohen Elsevier Press.
3. Incident Response & Computer Forensics by Kevin Mandia, Chris & Matt Pepe TATA McGRAW Hill Edition
4. 802.11 Security Bruce Potter Bob Flick, O'Reilly
5. B.Schnier, Applied Cryptography: Protocols, Algorithms, and Source Code in C, 2/e, John Wiley and Sons, New York, 1996.
6. Foundations of Computer Security by David Solomon, Publisher: Springer
7. Security+ In depth by Paul Campbell, Publisher: Vijai Nicol Imprints Chennai
8. Digital Security Concepts and Cases , ICFAI University Press, Hyderabad

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34. ICT-HM-06: System Administration Using Linux

Objective :

This course has been designed to provide an introduction to the Linux Operating System, the basics ideas behind Linux File System, Basic Linux Commands, Process Creation, General User Administration and Networking in Linux. The students will be enabled to do System Administration related jobs in Linux OS.

Duration: 120 Hours (= Theory: 60 Hours + Practical: 60 Hours)

Outline of the Course

Sl. No.	Topic	Duration in Hours	
		Theory	Practical
1	Introduction to Linux	08	08
2	Linux file system	11	11
3	Basic Linux Commands	11	11
4	Process Creation	09	09
5	General User Administration	10	10
6	Networking in Linux	11	11
	Total:	**60**	**60**

Recommended Books:

Main reading:

1. Sumitabh Das, UNIX : Concepts and Applications, Tata McGraw Hill, 4th Edn.

2. Satish Jain, Basics of OS, Unix and Shell Programming, BPB Publications, (A8-R4 Revised Syllabus).
3. Mark G Sobell, A Practical Guide to Linux, Prentice Hall, 2 nd Edition

Supplementary Reading:
1. Red Hat Linux: Proffitt: PHI
2. Introduction to System Administration: IBM series: PHI
3. Essential System Administration: Frisch: O'REILLY
4. Red Hat Linux Security and Optimization. Red Hat press.
5. Building Secure Server with Linux. O'Reilly Publishers
6. Linux Security by Hontanun. BPB Techmedia

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35. ICT-SP-02: Introduction to Stenography

Objectives:

The goal of this paper is to make the students familiar to Stenography, often known as shorthand writing, the practice of writing or typing documents at a rate that is significantly faster than that of conventional writers and typists.

At the end of the course the students will be able to:-

- Get practice of writing or typing documents at a rate that is significantly faster than that of conventional writers and typists.
- To write quickly in a variety of languages of their preference, with English serving as the required shorthand language.

Duration: 120 hours (Lectures: 50 hours+ Practicals: 70 hours)

Outline of the Course

S. No.	Topic	Duration (in hours)	
		Theory	Practical
1	Introduction to Stenography	02	00
2	Responsibilities of a Stenographer	02	00
3	Introduction to Shorthand	02	03
4	Consonants	02	03
5	Vowels	02	03
6	Short Forms	02	03
7	Dipthongs	02	03
8	Alternative forms of R&H Strokes	01	02
9	Thick Downward R & L	01	02
10	Alternative forms of Semi Vowels & their uses	02	03
11	Phraseography	01	02
12	The Circle	02	03
13	Large Circle	02	03
14	The loops	02	03

15	Initial small hooks	02	03
16	Alternative forms of curved hooked strokes	02	03
17	Compound Consonants	02	03
18	Final Hooks	02	03
19	Large Final	02	03
20	Halving Principles	02	03
21	Pairs of word confused and misused	01	02
22	Doubling Principles	02	03
23	Single word substitution	01	02
24	Prefixes	02	02
25	Suffixes	02	02
26	Figures/ Intersection	02	03
27	Contractions	02	03
28	Translation & Note Taking Techniques	01	02
	Total:	**50**	**70**

Note: An orientation programme on the course and related job opportunities by the industry expert and Instructor.

Recommended Books:

1. Shorthand Made Easy for Beginners, O.P. Kuthiala, Pitman S.S. Publications
2. Phono Phrase Book, O.P. Kuthiala, Pitman S.S. Publications, New Delhi.
3. Modern Phrase Book, N.V. Krishna Murty.
4. Way to High Speed Writing, O.P. Kuthiala.
5. Principles of Modern Phraseography, Edgar E. Thorpe.
6. Shorthand Made Easy for Beginners, O.P. Kuthiala, Pitman S.S. Publications
7. Shorthand Instructor & Key, First Edition, Pitman, Pearson
8. New Era: Pitman New Era Shorthand, Pitman, Pearson
9. Stenographer Secretarial Assistant (English), NIMI, Chennai

Syllabus for Practicals:

a) Practice of:
- The Consonants according to their pairs and dictation thereof.
- Joining stroke consonants.

b) Practicing of:
- Long and Short Vowels,
- Dot & Dash Vowels,
- Preceding and Following vowels,
- Intervening Vowels etc.
- Dictation of the same.

c) Practice of:
- The Consonants according to their pairs and dictation thereof.
- Joining stroke consonants.

d) Practicing of:
- Long and Short Vowels,
- Dot & Dash Vowels,

- Preceding and Following vowels,
- Intervening Vowels etc.
- Dictation of the same.

e) Practice of Alternative Forms of R & L
f) Use of Thick R and L and dictation
g) Practice of:
- Abbreviated W,
- Semicircle Y,
- Diaphone U
- Dictation Practice

h) Use of:
- Downward H,
- Tick H
- Dot H
- Upward SH
- Dictation Practice

i) Practice of Phraseography and dictation
j) Practice of Small Circle for S & Z,
k) Use of circle S & Z with other stroke Consonants and dictation
l) Practice of:
- Large Circle for SW and their medially and finally use and dictation
- Small Loop for ST/SD
- Large loop of STR and dictation

m) Practice of Initial small hooks for R & L
n) Other related principles for attaching with other strokes consonants and
o) Dictation practice
p) Practice of:
q) Curved hooked strokes i.e. F/ V/ th/ TH
- Dictation practice
- Compound Consonants and Dictation WH/ WHL/ KY/ GY/ KW/ GW/ MP/ MB and Dictation

r) Practice of:
- Final hook N and F/V and Dictation
- Shun Hook and joining with other Strokes and dictation

s) Practice of Halving Principles,
t) Halving of other compound consonants and dictation
u) Practice of Prefixes and their representative strokes and Dictation
v) Practice of Suffixes and their representative strokes and Dictation
w) Practice of Intersection-
- Monetary Units & Round Figures and dictation
- Contraction-
- formation and uses,
- Essential Vowels and dictation

x) Practice of Simple Letters writing in shorthand and Useful Note Taking Techniques
y) Practice of Translation & Note Taking Techniques
z) Revision of Theory

Points for Practice:

1. Revision of basic principles of Shorthand & Practical Exercises.
2. Additional/ Simple Grammalogues, Contractions, derivatives and Simple Phrasing
3. Practice of Intext Words, Phrases and Short Forms.
4. Uses and Dictation of the Advance Phraseography.
5. Dictation of Various Business Letters, Official Letters and others.

6. Uses and Dictation of Foreign Phrases.
7. Dictation of General Budget, Appropriation and Finance.
8. Dictation on Education Policy- Intext Words & Phrases.
9. Dictation on essential Commodities- Intext Words, Short Forms and Phrases.
10. Dictation on Phone and dictation in the General Meetings.
11 High Speed Dictation in long span of Time and verbatim Transcription of the same on Computers.
12. Practice of High Speed Dictation @ 80-100 WPM and verbatim transcription of the same on Computer.

Note: The Transcription of the Shorthand Dictation would be on Computers only to enable the Employment in the Competitive Exams.

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36. ICT-SP-03: Office Management & Secretarial Services

Objectives:

The goal of this paper is to make students understand the basic concepts and procedures of Modern Offices. Also the students will be familiarize with the activities of a modern office, role of a Private Secretary in an office besides gaining essential skills in handling of various office operations. As it is very important for an Executive Assistant to write rapidly and accurately, the knowledge of art of writing spoken sounds with the help of principles of Sir Isaac Pitman would help the students to take notes and carry out office work speedily.

Duration: 120 hours (Lectures: 60 hours+ Practicals: 60 hours)

Outline of the Course

Sl. No.	Topic	Duration (in hours)	
		Theory	Practical
	Part A: Office Management		60
1	Modern Office	05	
2	Planning and Controlling of Office Functions	07	
3	Personnel Management	07	
4	Time Management	04	
5	Stress Management	02	
6	Conflict Management	02	
7	Office Equipments	02	
8	Other Useful equipments	01	
	Part B: Secretarial Services		
9	Secretarial Services	07	
10	Handling of Office Machines	07	
11	Organizing Meetings	04	
12	Public Relation	02	
13	General financial principles	04	

14	Use of Office Manuals	02	
15	Office Correspondence and Mails	02	
16	Management Reporting	01	
17	Post Office Services	01	
	Total:	**60**	**60**

Recommended Books:

1) RK Sharma, Shashi Gupta and Sushil Nayar, "Office Management and Procedure", Kalyani Publication, Ludhiana
2) Singh and Chhabhria, "Office Management and Procedure", Dhanpat Rai and Sons, New Delhi
3) BN Tondon, "Manual of Office Management and Correspondence", S Chand and Co., Ram Nagar, New Delhi
4) B.R. Duggal, "Office Management", Kitab Mahal, New Delhi.
5) Dr. R.C. Bhatia, "Principles of Office Management", Lotus Press, Darya Ganj, New Delhi-110002
6) S.P. Arora, "Office Organisation and Management", Vikas Publishing House.
7) R.K. Chopra, "Administrative Office Management", Himalaya Publishing House.
8) Duggal, Balraj, "Office Management and Commercial Correspondence", Kitab Mahal, New Delhi.
9) Chhabra, T. N., Modern Business Organisation, Dhanpat Rai & Sons, New Delhi.
10) P. K. Ghosh, "Office Management", Sultan Chand & Sons. New Delhi
11) R. K. Chopra, "Office Management", Himalaya Publishing House
12) Chopra & Chopra, "Office Management", Himalaya Publications
13) Sharma & Gupta, "Office Organisation & Management", Kalyani Pub.
14) Krishna Murty, "Office Management", S. Chand Publications
15) Secretarial Practice - B.N.TANDON
16) Secretarial Practice - S.A.Sherlekr
17) Secretarial Practice - M.C Kuchhal.
18) Secretarial Services by Evelyn Anstin, Macdonald &Evavs.

Syllabus for Practicals: *Official and Business Correspondence*

(a) Application Writing
(b) Complaint Writing.
(c) Social Letters like Informal Letters/ Invitation Letters/ Congratulation Letters/ Thanks Giving Letters/ Condolence Letters etc. and letters to the Editors.
(d) Government Correspondence:- General Govt. Letters, Demi Official Letters, Office Memorandum, Circulars, Notifications, Office Orders, Endorsements, Press Release, Advertisements, Tender, Unofficial Notes etc.
(e) Business Correspondence:- Letters of enquires and replies. Letters of status and credit enquiries. Letters placing orders. Confirmation, modification and non-acceptance of orders. Letters of complaints and adjustments. Circular letters. Quotation, Order, Tender, Complaint letter, Adjustment Letter etc.
(f) General Banking Correspondence:- Account opening letters, Credit Letters, Guarantee Documents, Standing Instructions for Payment, Request for Bank over Draft etc. Dunning Letter, Insurance letters.
(g) Identification of Dispatch and Diary Register with the entry Procedure and practical use
(h) Identification of various files and practical use thereof.
(i) Practical knowledge of various official tools and equipment and their use.
(j) Visit to the various post offices
(k) Filling up of various online forms by using internet i.e. rail, bus, air tickets and booking of hotels etc.

Suggested Readings:

- Sinha, K.K., Business Communication, Galgotia and Sons, New Delhi.
- P.K. Ghosh, "Office Management", Sultan Chand & Sons. New Delhi
- Chawla, Shailesh K. Essential Business Communication, Mayur Paper Back.
- Campbell, Jeremy, Grammatical Man. Simon & Schuster.
- Rajendra Pal Korahill, "Essentials of Business Communication", Sultan Ch and & Sons,New Delhi, 2006.
- Ramesh, MS, & C. C Pattanshetti, "Business Communication", R.Chand&Co, New Delhi, 2003.
- Rodriquez M V, "Effective Business Communication Concept" Vikas Publishing Company, 2003.

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37. ICT-SP-04: Basic Employability Skills

Objectives:

The goal of this paper is to take care of generic skills embedded in various job roles in a comprehensive manner and also provides more opportunities and scope for students to engage with these common and necessary skills, such as communication, critical thinking and decision making in different situations pertaining to different job roles.

Duration: 120 hours (Lectures: 60 hours+ Practicals: 60 hours)

Outline Syllabus

Sl. No.	Topic	Duration in hours	
		Theory	Practice
1	Introduction to Employability Skills	04	04
2	Career Development & Goal Setting	03	03
3	Becoming a Professional in the 21st Century	03	03
4	Basic English Skills	02	02
5	Communication Skills	08	08
6	Financial and Legal Literacy	04	04
7	Self-management Skills	05	05
8	ICT Skills	13	13
9	Entrepreneurial Skills	06	06
10	Diversity & Inclusion	03	03
11	Constitutional values - Citizenship	02	02
12	Essential Digital Skill	03	03
13	Green Skills	04	04
Total:		**60**	**60**

Recommended Books:

- "Employability Skills" Textbook for Class X, NCERT
- "Employability Skills - Common For All Trades", National Instructional Media Institute, Chennai

- "Promoting Diversity And Inclusion Through Workplace Adjustments - A Practical Guide", International Labour Organization – 2016
- Nisha Nair & Neharika Vohra, "Diversity and Inclusion at the Workplace: A Review of Research and Perspectives", Indian Institute Of Management - Ahmedabad - India
- "Career learning for the 21st century", CPD series, Learning and Skills Improvement Service (LSIS), March 2012.

Note:
1. Latest and additional good books may be suggested and added from time to time.
2. Teachers are suggested to arrange Special Seminars/ Workshops to make the students aware of some additional Employability Skills like "Customer Service Skills" and "Skills for Getting Ready for Apprenticeship & Jobs", etc. that are not covered in the syllabus.

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Apprentice/ Mini Project:

An Apprentice or Mini Project of 60 (sixty) hours duration [to be completed in 10 (ten) or 20 (twenty) working days] to be carried out by a student in a reputed organisation/firm. He/ she has to submit a report along with a certificate from the qualified supervisor in a prescribed format after completing the period to become eligible to get PDWKT/ DCA/ DIA/ DMAT/ ADCA Original Certificate from AEDC Ltd. Such an activity provides the students to acquire a real-life experience to develop their skills. The Apprentice/ Mini Project carries 100 marks.

Major Project:

A Major Project of 120 (sixty) hours duration to be carried out by a student under the supervision of a qualified supervisor in a reputed organisation/firm and submit a report along with a certificate from the supervisor in a prescribed format after completing the Project Period to become eligible to get the PGDCSA Original Certificate from AEDC Ltd. It provides the students to acquire a better real-life experience to develop their skills. The Major Project carries 200 marks.

On-the-job training (OJT):

The On-the-job training (OJT) will be a practical approach to help the students in acquiring new competencies and skills needed for a job in a real, or close to real, working envirnment for the students of DCHN course. It will be of 60 (sixty) hours duration and will be used to learn how to use particular tools or equipment in a live-work practice, simulated, or training environment. OJT will carry 100 marks.

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