# HARYANA STATE HIGHER EDUCATION COUNCIL

No.:- 3/49-2021 Adv./HSHEC                              Dated:- 06.03.2023

To

The Principals
1. Govt. Colleges in the State
2. Govt. Aided Colleges in the State

Sub.:- Introduction of Short Term Certificate/Diploma Courses

****** 

Respected Principals

Namaste

Greetings from Haryana State higher Education Council

As you are already aware, Haryana Govt. is committed to implement NEP-2020 in letter and spirit to achieve most of the targets by 2025. The policy has also envisioned to allow HEIs to conduct Short Term Certificate Courses in various skills including soft skills.

Haryana State Higher Education Council therefore had constituted a committee to make recommendations in regard to introducing Short Term Certificate/Diploma Courses in colleges which are employment/self employment oriented keeping in view the spirit of NEP-2020.

The committee comprised of the following:-

1. Dr. DeshBandhu, Principal (Retd.)S.D. College AmbalaCantt.

2. Dr. Sushma Arya, Principal (Retd.) DAV College Yamunanagar

3. Dr. Archna Mishra, Principal, Govt. PG College Panchkula

4. Dr. Rishi Pal, Principal (Retd.) Govt. College, Kaithal

5. Dr. Chander Shekhar, Principal, Dyal Singh College Karnal

The report was submitted to the State Govt. where under the following was proposed for consideration:-

1. Department of Higher Education may share this report with Govt., Govt. Aided Colleges, and Universities for their consideration

2. The Institutions/Universities be encouraged to introduce these courses along with regular stream. For this the Institutions may work out details, implementation plan and share with the HSHEC and Department. No formal approval should be mandatory in such courses

3. The Institutions should be given the freedom to shortlist existing faculty who will impart instructions over and above their defined workload with

additional remuneration to be worked out at Institutional level. If not possible, then contract faculty for a fixed duration or modular approach and decide the mode of payment as per coverage of course content

4. The Institutions would be given the freedom to decide course fee with concessions to deserving students who are not in a position to pay

5. The entire income be kept in a separate account and the surplus be utilized for strengthening the facilities in the concerned courses

6. Preparation should start from the current academic session and the courses be introduced with all readiness from next academic session

As per orders of State Govt. the report was shared with DGHE &TE and the Department of Higher Education vide memo no. DHE-010009/104-2022 Co (1) dated 07.12.2022 has forwarded it to you for necessary action.

It is hoped that your Institution might have initiated the action accordingly.

It is requested that in case the process has commenced, the Council may kindly be kept informed.

Regards

K.K. Agnihotri
Advisor, HSHEC

**Endst. No.:- Even**                                **Dated:- 06.03.2023**

A copy for information with reference to memo no. DHE-010009/104-2022 Co (1) dated 07.12.2022 is forwarded to Director higher Education, Haryana.

K.K. Agnihotri
Advisor, HSHEC

# HARYANA STATE HIGHER EDUCATION COUNCIL

**No.:- 3/49-2021 Adv./HSHEC**                    **Dated:- 06.03.2023**

To

 The Vice Chancellor
 State Funded University
 Haryana

**Sub.:- Introduction of Short Term Certificate/Diploma Courses**
                              ******

Respected Vice Chancellor
Namaste

 Greetings from Haryana State higher Education Council

 As you are already aware, Haryana Govt. is committed to implement NEP-2020 in letter and spirit to achieve most of the targets by 2025. The policy has also envisioned to allow HEIs to conduct Short Term Certificate Courses in various skills including soft skills.

 Haryana State Higher Education Council therefore had constituted a committee to make recommendations in regard to introducing Short Term Certificate/Diploma Courses in colleges which are employment/self employment oriented keeping in view the spirit of NEP-2020.

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—2—

additional remuneration to be worked out at Institutional level. If not possible, then contract faculty for a fixed duration or modular approach and decide the mode of payment as per coverage of course content

4. The Institutions would be given the freedom to decide course fee with concessions to deserving students who are not in a position to pay

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6. Preparation should start from the current academic session and the courses be introduced with all readiness from next academic session

As per orders of State Govt. the report was shared with DGHE &TE and the Department of Higher Education vide memo no. DHE-010009/104-2022 Co (1) dated 07.12.2022 has forwarded it to you for necessary action.

It is hoped that your Institution might have initiated the action accordingly.

It is requested that in case the process has commenced, the Council may kindly be kept informed.

This is also being shared with the Principals of Govt. as well as Govt. Aided Colleges.

Regards

K.K. Agnihotri
Advisor, HSHEC

**Endst. No.:- Even**                                                        **Dated:- 06.03.2023**

A copy for information with reference to memo no. DHE-010009/104-2022 Co (1) dated 07.12.2022 is forwarded to Director higher Education, Haryana.

K.K. Agnihotri
Advisor, HSHEC

# REPORT ON SHORT DURATION CERTIFICATE/DIPLOMA COURSES FOR COLLEGES.

The Chairman,
Haryana State Higher Education Council,
Panchkula (Haryana)

Subject:- SHORT DURATION CERTIFICATE/DIPLOMA COURSES FOR COLLEGES.

Sir,

Reference to Memo No 3/49 – 2021 Adv./HSHEC dated 22.09.2021, a committee consisting of

1. Dr. Desh Bandhu, Former Principal S.D.College, Ambala Cantt.as Chairman
2. Dr. Sushma Arya, Former Principal D.A.V. College for Girls, Yamunanagar
3. Dr. (Mrs.) Archana Mishra, Principal Govt. College, Sector 1, Panchkula
4. Dr. Rishi Pal, Former Principal Govt. College, Kaithal
5. Dr. Rajinder Singh, Principal, S. D. College, Ambala Cantt.
6. Dr. (Mrs.) Rekha Sharma, Former Principal Govt. College, Karnal
7. Dr. S.K. Mishra, Former Principal Govt. College, Hisar
   Was constituted to recommend a few short duration courses for the colleges to make students job worthy.

The first meeting of the committee was held on 28th September 2021 at S. D. College, Ambala Cantt to discuss the modalities to look for the short term courses which can be useful to the students to make them job worthy or entrepreneur and also value added course which will help them in their job or business carrier.

After large rounds of virtual interaction among team mates a good number of such courses were worked out, many of which are being successfully being run in a few colleges. These courses were categorized in three categories viz. Job Oriented, Entrepreneurship and value added courses. The courses were further grouped in various streams/subjects.

While framing the course and syllabi care was taken that the students from any faculty can study any of these course.

The committee members are of the opinion that duration of certificate courses will be six months/one semester and that of Diploma will be one year/one academic session. Ultimately the duration and any addition/subtraction is left to the wisdom of various board of studies of different Universities.

List of proposed Certificate/Diploma courses along with the syllabi is enclosed for kind consideration of the Hon'ble commission.

Dr. Desh Bandhu              Dr. Sushma Arya              Dr. (Mrs.) Archana Mishra

Dr. Rishi Pal        Dr. Rajinder Singh      Dr. (Mrs.) Rekha Sharma,        Dr. S.K. Mishra

# List of short duration Certificate/Diploma Courses

| S.No | Job oriented courses | Page No. | S.No | Entrepreneurship courses | Page No. | S.No | Value added courses | Page No. |
|------|---------------------|----------|------|--------------------------|----------|------|---------------------|----------|
| | **COMPUTER** | | | **HOME SCIENCE** | | | **COMMERCE** | |
| 1 | Comp Aided accountancy (Tally) | 1 | E-1 | Block Printing | 91 | VA-1 | Personal Grooming | 115 |
| 2 | Comp App in Commorce/Management/Business | 1 | E-1A | Block Printing | 95 | VA-1A | Personal Grooming | 119 |
| 3 | System Applications & Product in Data Processing (SAP) | 1 | E-2 | Embroidry | 91 | VA-2 | Leadership and teamwork | 115 |
| 4 | Software and app development | 1 | E-2A | Embroidry | 97 | VA-2A | Leadership and teamwork | 121 |
| 5 | Cyber Security | 1 | E-3 | Beauty and wellness | 91 | VA-3 | Professional etiquattes | 115 |
| 5A | Cyber Security | 9-16 | E-4 | Handicraft | 91 | VA-3A | Professional etiquattes | 123 |
| 6 | Ethical Hecking | 2 | E-5 | Bakery, confectionary and cookery | 91 | VA-4 | Group Discussions | 115 |
| 6A | Ethical Hecking | 17-21 | E-6 | Food and Beverage Production | 91 | VA-4A | Group Discussions | 125 |
| 7 | Microsoft certification | 2 | E-6A | Food and Nutrition | 99 | VA-5 | Interview Skills | 115 |
| 8 | Computer networking | 2 | E-7 | Fashion Technology & Apparel Designing | 91 | VA-5A | Interview Skills | 127 |
| 8A | Computer networking | 23-27 | E-7A | Apparel Designing | 101 | VA-6 | Professional grooming | 115 |
| | Desk top publishing | 2 | E-8 | Jewellery Designing | 91 | VA-7 | Time management | 115 |
| 9A | Desk top publishing | 29-34 | E-9 | Cutting, Tailoring & Surface Ornamentation | 91 | VA-8 | Stress Management | 115 |
| 9B | Desk top publishing | 35 | E-9A | Cutting, Tailoring & Surface Ornamentation | 103 | | **LANGUAGES** | |
| 10 | System administration with LINUX | 2 | E-10 | Fashion Designing | 91 | VA-9 | Public Speaking | 115 |
| 10A | System administration with LINUX | 37-42 | E-11 | Dairy Products and Processing | 92 | VA-9A | Public Speaking | 129-130 |
| 11 | Network administration | 2 | E-12 | House Keeping and Management | 92 | VA-10 | Creative writing | 115 |
| 11A | Network administration | 43-46 | E-13 | Vastu Shastra and Interior Designing | 92 | VA-11 | Spoken English & Communication Skills | 116 |
| 12 | Database administration | 2 | E-13A | Basics of Interior Decoration | 105 | VA-12 | Critical Thinking | 116 |
| 12A | Database administration | 47-50 | | **COMMERCE** | | | **HUMANITIES** | |
| 13 | Oracle SQL and PLSQL | 2 | E-14 | Entrepreneurship development | 92 | VA-13 | Gender Equality | 116 |
| | PCP design and assembly | 3 | E-15 | Women Enterpreneurship | 92 | VA-14 | Life skills (Emotional intelligence, Team Dynamics, Managing Diversity) | 116 |
| 15 | PC maintenance and networking | 3 | | | | VA-15 | Human Values and ethics | 116 |

| No. | Course | Page |
|---|---|---|
| 16 | Office automation and Tally | 3 |
| 17 | Computer application and Information Technology | 3 |
| 18 | Information Technology & Retail Management | 3 |
| 19 | Networking & Mobile Applications | 3 |
| 20 | Graphic Desiging | 3 |
| 21 | Digital Marketing | 3 |
| 21A | Digital Marketing | 51-52 |
| 22 | Web Designing | 4 |
| 23 | 3 D Animation | 4 |
| 24 | Data Science | 4 |
| 25 | Programming with Phyton | 4 |
| 25A | Programming with Phyton | 53 |
| 26 | Data Entry operator | 4 |
| 27 | Artificial Intelligence in Health Care & Bio Technology | 4 |
| 28 | Hardware & Technology | 4 |
| 29 | Office automation and E - Governance | 4 |
| 29A | Web Designing using HTML | 55-57 |
| 29B | Open Source Software | 59-61 |

### COMMERCE

| No. | Course | Page |
|---|---|---|
| 30 | Digital Marketing | 5 |
| 31 | Export, import & Logistic Mgt | 5 |
| 32 | E. Return Filling (Direct Taxatation and law | 5 |
| 33 | GST | 5 |
| 34 | E - Business | 5 |
| 35 | Typing & Short Hand English | 5 |
| 35A | Typing & Short Hand English | 63-64 |
| 36 | Typing & Short Hand Hindi | 5 |

### BIOLOGY

| Code | Course | Page |
|---|---|---|
| E-16 | Soil Mangement & Vermi - composting | 92 |
| E-16A | Vermicomposting | 107 |
| E-17 | Landscaping | 92 |
| E-18 | Rain Water Harvesting | 92 |
| E-19 | Ornamental Fish Culture | 92 |
| E-20 | Mushroom Cultivation | 92 |
| E-20A | Mushroom Cultivation | 109 |
| E-21 | Bio farming | 92 |
| E-21A | Bio farming | 111 |
| E-22 | Horticulture and Nursery Management | 93 |
| E-22A | Horticulture and Nursery Management | 113 |
| E-23 | Landscape Gardening & Management | 93 |
| E-24 | Green House Technology | 93 |

### MUSIC/THEATRE

| Code | Course | Page |
|---|---|---|
| E-25 | Theater and stage craft | 93 |
| E-26 | Western Contemporary Dance | 93 |

### PHYSICAL EDUCATION

| Code | Course | Page |
|---|---|---|
| E-27 | Panchkarma | 93 |

### CHEMISTRY

| Code | Course | Page |
|---|---|---|
| VA-16 | Chemistry in day today life | 116 |

### SCIENCE/HUMANITIES

| Code | Course | Page |
|---|---|---|
| VA-17 | Research Methodology | 116 |
| VA-17A | Research Methodology | 131 |

### MUSIC

| Code | Course | Page |
|---|---|---|
| VA-18 | Rhythm: Course on Music Instruments | 117 |
| VA-18A | Rhythm: Course on Music Instruments | 133-134 |
| VA-19 | Sound Design & Music Voval | 117 |
| VA-19A | Sound Design & Music Voval | 135-136 |

### COMPUTER

| Code | Course | Page |
|---|---|---|
| VA-20 | Power Point Presentation | 117 |
| VA-20A | Power Point Presentation | 137-138 |

### General

| Code | Course | Page |
|---|---|---|
| VA-21 | Creative skills: Art & Craft | 139 |
| VA-22 | Impromptu Speaking & Stage Management | 141 |
| VA-23 | Personality Development and Professional Groming | 143 |
| VA-24 | Circuit Design on PCB | 145 |
| VA-25 | First Aid & Home Nursing | 147 |

| 37 | Taxation | 5 |
|---|---|---|
| 37A | Taxation | 65 |
| 38 | Advertising & Marketing Communications | 5 |
| 38A | Advertising & Marketing Communications | 67 |
| 39 | Business Management | 5 |
| 39A | Business Management | 69 |
| 40 | Banking and Finance | 5 |
| 41 | Store Operation in Retail Marketing | 5 |
| 42 | Banking and Financial Sevices | 5 |
| | **PHYSICAL EDUCATION** | |
| 43 | Yoga and Meditation | 5 |
| 44 | Self defence skills | 5 |
| 45 | Aerobatics and Fitness | 5 |
| 46 | Course on sports coaching | 5 |
| 47 | Course on sports technology | 5 |
| 48 | Course on sports fitness | 6 |
| 49 | First aid training | 6 |
| | **HOME SCIENCE** | |
| 50 | Food Science and nutrition | 6 |
| 51 | Interior Desiging | 6 |
| 52 | Hospitality Management | 6 |
| 53 | Food Security | 6 |
| 53A | Food Security | 71 |
| | **CHEMISTRY** | |
| 54 | Soil & Water testing assistant | 6 |
| | **PHYSICS** | |
| 55 | Refrigiration & Airconditioning | 6 |
| 56 | Photograpy | 6 |
| | **BIOLOGY/ ENVIORNMENT SCIENCE** | |
| 57 | Enviornment Security | 6 |
| 58 | Waste Management | 6 |
| 58A | Waste Management | 73-75 |
| 58B | Waste Management | 77 |
| 59 | Energy Security | 6 |
| 59A | Energy Security | 79 |
| 59B | Environmental Impact Assessment | 81 |

# Job Oriented Courses

| Sr. No. | Department | Name of the Course | Certificate/ Dip./Adv. Dip. | Credits | Broad outline of the Syllabus |
|---|---|---|---|---|---|
| 1 | Computer | Comp. Aided Accountancy (Tally) | Diploma | 60 | Accounting Concepts, Computer Fundamentals, Operating System Fundamentals, Communicative English & PD |
| 2 | Computer | Comp. Appl. In Commerce/Management/Business | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, PC Software, Introduction to Networking and Internet, Practicals on PC Software & Internet, Personality Development, Multimedia, RDBMS, Internet Applications Web Designing, Flash Fundamentals |
| 3 | Computer | System Applications & Product in Data Processing-SAP | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, PC Software, Introduction to Networking and Internet, Practicals on PC Software & Internet, Personality Development, Multimedia, RDBMS, Internet Applications |
| 4 | Computer | Software and Application Development | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, PC Software, Introduction to Networking and Internet, Practicals on PC Software & Internet, Personality Development, Multimedia, RDBMS, Internet Applications Web Designing, Flash Fundamentals |
| 5 | Computer | Cyber Security | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, PC Software, Introduction to Networking and Internet, Practicals on PC Software & Internet, Different Antiviruses |

| Sr. No. | Department | Name of the Course | Certificate/ Dip./Adv. Dip. | Credits | Broad outline of the Syllabus |
|---|---|---|---|---|---|
| 6 | Computer | Ethical hacking | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, PC Software, Introduction to Networking and Internet, Practicals on PC Software & Internet, Ethical hacking |
| 7 | Computer | Microsoft Certification | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, Microsoft Certification |
| 8 | Computer | Computer networking | Advanced Diploma | 120 | Computer Fundamentals, Computer organization, Operating System Fundamentals, PC Software, Introduction to Networking and Internet, Practicals on PC Software & Internet |
| 9 | Computer | Desktop Publishing | Advanced Diploma | 120 | Computer Fundamentals, Computer organization, Operating System Fundamentals, PC Software, Introduction to Networking and Internet, Practicals on PC Software & Internet, Desktop Publishing |
| 10 | Computer | System Administration with Linux | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, PC Software, Introduction to Networking and Internet, LINUX |
| 11 | Computer | Network Administration | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, PC Software, Introduction to Networking and Internet, Administration |
| 12 | Computer | Database Administration | Diploma | 60 | Computer Fundamentals, Operating System Fundamentals, Data Administration and Its Analysis |
| 13 | Computer | Oracle SQL & PLSQL | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, PC Software, Introduction to Networking and Internet, SQL, PLSQL |

| Sr. No. | Department | Name of the Course | Certificate/ Dip./Adv. Dip. | Credits | Broad outline of the Syllabus |
|---|---|---|---|---|---|
| 14 | Computer | PCP Design and Assembly | Diploma | 60 | Contents and Overview In this course you will learn how to design your own PCB using Proteus and learn how to make the PCB |
| 15 | Computer | PC Maintenance & Networking | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, PC Software, Introduction to Networking and Internet, Its Maintenance |
| 16 | Computer | Office Automation and Tally | Diploma | 60 | Accounting Concepts, Computer Fundamentals, Operating System Fundamentals, Communicative English & PD |
| 17 | Computer | Computer Application and Information technology | Diploma | 60 | Accounting Concepts, Computer Fundamentals, Operating System Fundamentals, Communicative English & PD |
| 18 | Computer | Information Technology and Retail Management | Advanced Diploma | 120 | Business Organization, Retail Management, Computer Fundamentals, Business Mathematics, Communication Skills and PD, PC Softwares, Enterpreneurship Development, Supply Chain Management, Networking Fundamentals, Financial Accounting Business Communication, Internet Fundamentals, Tax, Advertising |
| 19 | Computer | Networking & Mobile Application | Certificate | 30 | Programming Different Languages, Mobile user Interface Designs, MYSQL, Wireless Networks, LINUX. |
| 20 | Computer | Graphic Designing | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, Graphic Designing |
| 21 | Computer | Digital Marketing | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, Digital Marketing |

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| Sr. No. | Department | Name of the Course | Certificate/ Dip./Adv. Dip. | Credits | Broad outline of the Syllabus |
|---|---|---|---|---|---|
| 22 | Computer | Web Designing | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, Web Designing |
| 23 | Computer | 3D Animation | Diploma | 60 | Computer Fundamentals, 3D Animation and VFX, Production |
| 24 | Computer | Data Science | Certificate | 30 | Computer Fundamentals, Computer organization, Data Structure and Types, Analysis |
| 25 | Computer | Programming with Python | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, Programme |
| 26 | Computer | Data Entry Operator | Advanced Diploma | 120 | Computer Fundamentals, Computer organization, Operating System Fundamentals |
| 27 | Computer | Artificial Intelligence in Health Care & Bio-technology | Advanced Diploma | 120 | Biological Intelligence Vs Artificial Intelligence Basics: concepts, terminologies and workflow, ML, DL, Applications of AI in the Pharmaceutical Industry, AI-driven applications for drug design, lead optimization, and clinical trials, Artificial Intelligence for Biomarker Discovery, AI in Precision Medicine, AI in shaping the future of Bioinformatics, AI in health diagnostics / Confluence of AI and Smart Devices for Monitoring Health and Disease AI in medical imaging Artificial Intelligence and Synthetic Biology, AI in biology: Risks involved and ethical concerns, Future Prospects of AI in healthcare and research |
| 28 | Computer | Hardware and Technology | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, Hardware and Its Maintainenace |
| 29 | Computer | Office Automation and E-Governance | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, Softwares |

| Sr. No. | Department | Name of the Course | Certificate/ Dip./Adv. Dip. | Credits | Broad outline of the Syllabus |
|---|---|---|---|---|---|
| 30 | Commerce | Digital Marketing | Diploma | 60 | Computer Fundamentals, Computer organization, Operating System Fundamentals, Digital Marketing |
| 31 | Commerce | Export, Import & Logistic Management | Diploma | 60 | Introduction, Case Studies and training |
| 32 | Commerce | E-Return Filling (Direct Taxation & Law) | Diploma | 60 | Computer Fundamentals, Accounting Concepts, E-return Filing |
| 33 | Commerce | GST | Certificate | 30 | Computer Fundamentals, Accounting Concepts, GST |
| 34 | Commerce | E-Business | Certificate | 30 | Computer Fundamentals, Business Concepts, E-Business |
| 35 | Commerce | Typing & Shorthand English | Diploma | 60 | Computer Fundamentals, Softwares and Shorthand |
| 36 | Commerce | Typing & Shorthand Hindi | Diploma | 60 | Computer Fundamentals, Softwares and Shorthand |
| 37 | Commerce | Taxation | Certificate | 30 | Computer Fundamentals, Accounting Concepts, E-return, GST, various softwares |
| 38 | Commerce | Advertising & Marketing Communications | Diploma | 60 | Computer Fundamentals, Marketing Concepts, Advertising Concepts, Communications |
| 39 | Commerce | Business Management | Diploma | 60 | Computer Fundamentals, Business Concepts, Planning and Management |
| 40 | Commerce | Banking and Finance | Diploma | 60 | Computer Fundamentals, Introduction to Banking and Finance. Planning and Management |
| 41 | Commerce | Store Operation in Retail Marketing | Diploma | 60 | Business Organization, Retail Management, Computer Fundamentals, Business Mathematics, Communication Skills and PD, PC Softwares |
| 42 | Commerce | Banking and Financial Services | Diploma | 60 | Computer Fundamentals, Introduction to Banking and Finance. Planning and Management |
| 43 | Physical Education | Yoga and Medication | Diploma | 60 | Yoga, Naturopathy, Common Problem and Solutions |
| 44 | Physical Education | Self Defence Skills | Certificate | 30 | Introduction, Need, techniques and topics |
| 45 | Physical Education | Aerobatics and Fitness | Certificate | 30 | History, Organisation, Diseases and its prevention |
| 46 | Physical Education | Course on Sports Coaching | Advanced Diploma | 120 | History, Organisation, Games |
| 47 | Physical Education | Course on Sports Technology | Advanced Diploma | 120 | History, Organisation, Softwares |

| Sr. No. | Department | Name of the Course | Certificate/ Dip./Adv. Dip. | Credits | Broad outline of the Syllabus |
|---|---|---|---|---|---|
| 48 | Physical Education | Course on Sports Fitness | Certificate | 30 | History, Organisation, Diseases and its prevention |
| 49 | Physical Education | First Aid Training | Certificate | 30 | Introduction, Basic Treatments |
| 50 | Home Science | Food Science and Nutrition | Advanced Diploma | 120 | Food Production Module, Food and Beverage, Hygiene And Sanitation, Nutrition and Food Sciences, Personality Development |
| 51 | Home Science | Interior Designing | Advanced Diploma | 120 | Material and Construction, Architecture, Costing and Estimates |
| 52 | Home Science | Hospitality Management | Advanced Diploma | 120 | Food and Beverages, Front Office, Culinary Art, Management Skills, House Keeping |
| 53 | Home Science | Food Security | Certificate | 30 | Introduction, Need and different methods |
| 54 | Chemistry | Soil & Water Testing Assistant | Certificate | 30 | Introduction, Types, tests and analysis |
| 55 | Physics | Refrigiration & Airconditioning | Certificate | 30 | refrigeration cycles and understanding of psychrometry and psychrometric processes |
| 56 | Physics | Photography | Certificate | 30 | History and Origion, Types and Practical Work |
| 57 | Biology/Environment Sci. | Environment Security | Certificate | 30 | Introduction, Need and different methods |
| 58 | Biology/Environment Sci. | Waste Management | Certificate | 30 | Introduction, Need and different methods |
| 59 | Biology/Environment Sci. | Energy Security | Certificate | 30 | Introduction, Need and different methods |
| 60 | Languages | Journalism & Mass Communication | Diploma | 60 | Introduction, History & Origion, Need |
| 61 | Languages | Patrachar | Diploma | 60 | Introduction, Writing and Reporting |
| 62 | Languages | Newsreading & Anchoring | Diploma | 60 | Writing and Reporting, Anchoring, Radio Jockey |
| 63 | Library Science | Library Automation | Diploma | 60 | Introduction, Need and Library Automation Softwares, KOHA, etc. |
| 64 | Library Science | Library Management | Diploma | 60 | Need & Classification, Planning and Management. |
| 65 | Humanities | Resource Security | Certificate | 30 | Resource Security Introduction, Need and different methods |
| 66 | Humanities | Social Security | Certificate | 30 | Social Security Introduction, Need and different methods |
| 67 | Humanities | Human Security | Certificate | 30 | Human Security Introduction, Need and different methods |

| Sr. No. | Department | Name of the Course | Certificate/ Dip./Adv. Dip. | Credits | Broad outline of the Syllabus |
|---|---|---|---|---|---|
| 68 | Humanities | Cultural Security | Certificate | 30 | Cultural Security Introduction, Need and different methods |
| 69 | Humanities | Fire Security | Certificate | 30 | Introduction, Need and different methods |
| 70 | Humanities | Disaster Management | Certificate | 30 | Introduction, Need and different methods |
| 71 | Humanities | Psychology | Advanced Diploma | 120 | General Psychology, Mental Health & Counseling |

## Certificate Course in Cyber Security (VCS-106)

**Course Duration: 60 hours**

### Scheme of Course

| Paper No. | Title of Paper | Maximum Marks | Passing Marks | Duration of Exam |
|---|---|---|---|---|
| VCS-106 (i) | Cyber Security(Theory) | 50 | 20 | 3 hours |
| VCS-106 (ii) | Cyber Security(Practical) | 50 | 20 | 3 hours |

## Program Outcome

At the end of programme students will be able:

- To gain a good understanding of the concepts and foundation of computer security.
- To identify vulnerabilities of IT system.
- To Implement technical strategies ,tools, and techniques to secure data and information for any organisation
- To describe how cyber attacks against an organisation can be monitored and investigated for actionable intelligence
- Apply skills and knowledge to create new responses to emerging cyber security problems so that they can respond to new attacks as they evolve

## Job Roles

- Security analyst
- Security Engineer
- Security Consultant
- Security Administrator
- Security Software Developer
- Cryptanalyst
- Security Architect

## Objective

The objective of this course is to train candidates from the multiple disciplines instilling in them the necessary knowledge of ethics, management, and policy related to cyber security and the threat related to the field.

**Paper Code: VCS-106 (i)**
**Nomenclature: Cyber Security(Theory)**

**Maximum Marks: 50**
**Minimum Marks: 20**
**Time: 3 hour**

## Course Learning Outcome:

The student will learn to
- Apply master hacking concepts to manage information security efficiently
- Design security architecture and framework for a secure IT operation
- Frame data security strategies, and utilize them to analyze risks
- Protect data movement, perform disaster recovery, access network security and manage client databases

**Note:** Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of four (short-answer type) questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

## Unit 1

**Introduction to Cyber Security** Overview of Cyber Security, Cyber Threats:- Cyber Warfare-Cyber Crime-Cyber terrorism- Types of Attacks, Digital Privacy, Online Tracking, Privacy Laws, Types of Computer Security risks ( Malware, Hacking, Pharming, Phishing, Ransomware, Adware and Spyware, Trojan, Virus, Worms, WIFI Eavesdropping, Scareware,), Antivirus and Other Security solution, Password, Secure online browsing, Email Security, Cloud storage security, IOT security

## Unit 2

**Security Threats and vulnerabilities**

Overview of Security threats, Hacking Techniques, Password Cracking, Insecure Network connections, Malicious Code, Programming Bug, Cyber crime and Cyber terrorism, Information Warfare and Surveillance

## Unit 3

**OS Security**

OS Security Vulnerabilities, updates and patches, OS integrity checks, Anti-virus software, Design of secure OS and OS hardening, Configuring the OS for security, Trusted OS

## Unit 4

**Cryptography and Secure Communication**

The Difference Between Encryption and Cryptography, Cryptographic Function, Cryptographic Types, Digital Signature, The Difference Between Digital Signatures and Electronic Signatures, Intrusion, Physical Theft, Abuse of Privileges, Unauthorized Access by Outsider, Malware infection, Intrusion detection and Prevention Techniques

## Books Recommended:

| | | |
|---|---|---|
| 1. Nandan Kamath Technology | : | A Guide to Cyber Laws and the Information Act, 2000 with Rules and Notifications. |
| 2. Rodney, D. Ryder | : | Guide to Cyber Laws. |
| 3. Yogesh Barua& Denzyl | : | Cyber Crimes |
| 4. Sharma, Vakul | : | Information Technology: Law and Practice |
| 5. Justice Yathindra Singh | : | Cyber Laws |
| 6. Bakshi, R.M. | : | Cyber & E- Commerce Laws |
| 7. Farooq Ahmad | : | Cyber Law in India (Law of Internet) |

## Text Books:
1. Nelson Phillips and Enfinger Steuart, "Computer Forensics and Investigations", Cengage Learning, New Delhi, 2009.
2. Sunit Belapure and Nina Godbole, "Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives", Wiley India Pvt. Ltd.

**Paper Code: VCS-106 (ii)**
**Nomenclature: Cyber Security(Practical)**

**Course outcomes:**
After successful completion of this course, students will be able to:

- Install, configure and deploy public key infrastructure and network components while accessing and troubleshooting issues to support organizational security
- Understand the concepts of cyber security in today's environment.
- Obtain the understanding of how cyber security is changing the concepts and expectations of IT fields.I
- Have an understanding of basic cyber security tools to enhance system security and can develop basic security enhancement in stand alone applications.

**List of Experiments:**

➢ **Operating system security**
- **Securing User accounts**
- **Account polices**
- **File system**
- **Network services**
- **Logging and Monitoring**
- **System Integrity**

➢ **Packet sniffing**

➢ **Cryptography Tool**
- **Ciphers**
- **Cryptanalysis**
➢ **Networking Security Monitoring Tools**

Certificate Course in Ethical Hacking

**Program Duration: 60 hours**

## Scheme of Course

| Paper No. | Title of Paper | Maximum Marks | Passing Marks | Duration of Exam |
|---|---|---|---|---|
| | Ethical Hacking(Theory) | 50 | 20 | 3 hours |
| | Lab based on Ethical Hacking | 50 | 20 | 3 hours |
| | Project based on Ethical Hacking | 50 | 20 | 3 hours |

**Program Outcome:**

**At the end of the program student will be able to:**

- Learn various aspects of Ethical Hacking like network security, web security, OS and Database Security.
- Applyadvanced techniques which are used by both black and white hats.
- Understand methodologies and provide better security and defend severe data breaches.
- Develop theart of identifying and securing potential threats to digital assets like websites, server, networks, operating system and more of an organization.

**Job Roles in Government Sector, IT Firm & Private Organizations:**

- Network Security Administrator
- Chief Information Security Officer
- Application Security Tester
- Chief Application Security Officer
- Network Security System Manager
- Security Investigator
- Network Security Engineer
- Systems/Applications Security Executive
- Web security Administrator/Manager
- Security Auditor
- Ethical Hacker
- Data security specialist
- Chief Information Security Officer
- Computer Forensics Investigator
- IT Security Administrator/Consultant/ Manager
- Security Certified Programmer
- Forensics Investigator
- Security consultant

**Objectives:**

1. To understand and analyze Information security threats &counter measures.
2. To perform security auditing & testing
3. To understand issues relating to ethical hacking
4. To study & employ network defense measures
5. To understand penetration and security testing issues

**Paper Code:**
**Nomenclature: Ethical Hacking (Theory)**

**Maximum Marks: 50**
**Minimum Marks: 20**
**Time: 3 hours**

**Note:** Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of four (short-answer type) questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

## UNIT I

Ethical Hacking Overview & Footprinting:

Understanding the importance of security, Concept of ethical hacking. Threat, Attack, Vulnerabilities, Exploit. Phases involved in hacking

Footprinting - Introduction to foot printing, Understanding the information gathering methodology of the hackers,Tools used for the reconnaissance phase.

## UNIT II

Port Scanning & System Hacking:

Port Scanning - Introduction, using port scanning tools, ping sweeps, Scripting Enumeration-Introduction, Enumerating windows OS & Linux OS

Aspect of remote password guessing, Role of eavesdropping ,Various methods of password cracking, Keystroke Loggers, Understanding Sniffers ,Comprehending Active and Passive Sniffing, ARP Spoofing and Redirection, DNS and IP Sniffing, HTTPS Sniffing.

## UNIT III

Hacking Web Services & Session Hijacking:

Web application vulnerabilities, application coding errors, SQL injection into Back-end Databases, cross-site scripting, cross-site request forging, authentication bypass, web services and related flaws, protective http headers Understanding Session Hijacking, Phases involved in Session Hijacking,Types of Session Hijackingand Session Hijacking Tools

## UNIT IV

Hacking Wireless Networks & Cryptography:

Introduction to 802.11,Role of WEP, Cracking WEP Keys, Sniffing Traffic, and Wireless DOS attacks,WLANScanners,WLANSniffers,HackingTools, and Securing Wireless Networks. Cryptography and its types.

Text books:

1. Patrick Engebretson, The Basics of Hacking and Penetration Testing, Elsevier, 2013.
2. Network Security and Ethical Hacking, RajatKhare, Luniver Press, 2006.

REFERENCES:

1. Kimberly Graves, "Certified Ethical Hacker", Wiley India Pvt Ltd, 2010
2. Michael T. Simpson, "Hands-on Ethical Hacking & Network Defense", Course Technology, 2010
3. Ramachandran V, BackTrack
4. Wireless Penetration Testing Beginner's Guide (3rd ed.). Packt Publishing, 2011 5. Thomas Mathew, "Ethical Hacking", OSB publishers, 2003

**Paper Code:**
**Nomenclature: Lab based on Ethical Hacking (Practical)**

**M.M: 50**
**Time: 3 hours**

**Course Outcome:**

After learning the course the students should be able to:
  i.   Understand the basics of the ethical hacking.
  ii.  Perform the foot printing and scanning.
  iii. Perform the techniques for system hacking.
  iv.  Characterize the malware and their attacks, detect and prevent them.
  v.   Determine the signature of different attacks and prevent them.
  vi.  Detect and prevent the security attacks in different environments

**List of Experiments:**

1. List the tools for Ethical Hacking.
2. Implement Footprinting and Reconnaissance using tools 3d Traceroute, Alchemy Eye, DNS Tools and Network Solution Whois.
3. Implement Network scanning using tools Advanced Port Scanner, Colasoft Ping Tool, Hide Your IP Address, Nessus and Nmap.
4. Implement Enumeration using tools Default Password List, Default Password List, OpUtil Network Monitoring Tool and OpUtil Network Monitoring Tool.
5. Implement system hacking using tools Actual spy, Alchemy Remote Executor, Armor Tool and FSecureBlackLight.
6. Implement Trojan and Backdoors using tools Absolute Startup Manager, Absolute Startup Manager, Netwirx Services Monitor and StartEd Lite.
7. Implement Viruses and Worms using tools Anubis Analyzing UnknownBinaries, Filterbit, Sunbelt CWSandbox and ThreatExpert.
8. Implement sniffers using tools ColasoftCapsa Network Analyzer, EffeTech HTTP Sniffer, Packet Sniffer and PRTG Network Monitor.

**Major Equipment's:** - Latest PCs with related software

**List of Open Source Software/learning website:**
  •https://hackaday.com/
  •https://breakthesecurity.cysecurity.org/
  •https://www.eccouncil.org/programs/certified-ethical-hacker-ceh/
  •https://www.hackthissite.org/

**Paper Code:**
**Nomenclature: Project based on Ethical Hacking (Viva)**

**M.M: 50**
**Time: 3 hrs**

<u>**Distribution of Marks**</u>
Viva Voce: 50

**Course Outcomes:**

After learning the course the students should be able to:
1. Evaluate the countermeasures of advanced hacking techniques.
2. Perform techniques used to break into an insecure web application and identify relevant countermeasures.
3. Demonstrate an advanced security topic with an independent project.

**Note:**

Each student shall be required to undertake a real life project problem under the supervision of a faculty. The project may be development assignment in a real environment on below given areas or any other area related to ethical hacking.

**List of Projects:**
  i.   Web Server Fingerprinting tool
  ii.  IP Spoofing attack demonstration
  iii. ARP Spoofing attack and demonstration
  iv.  ICMP Flood attack simulation
  v.   Mac flooding attack demonstration and mitigation
  vi.  ARP cache poisoning and man in the middle attack
  vii. Syn flood tool
  viii. Web Exploitation and Privilege Escalation
  ix.  Wireless Exploitation
  x.   Web/Network Sniffing
  xi.  Network Spoofing Attacks
  xii. Web Back-doors
  xiii. Unauthorized Access to Resources etc.

**Report-on Project work will consist of the following:**

1. Index
2. A duly signed certificate from supervisor certifying that the candidate has done the project under his supervision and the work done in the project is the result of candidate's own effort.
3. A certificate from college principal certifying that the candidate is the student of this college and he has attended the college IT Labs for required no of days.
4. Acknowledgement duly signed by student.
5. Introduction of Topic.
6. Objective of the project.
7. Definition of the problem.
8. System documentation and flowchart.
9. Listing of the software development along with sample inputs inputs and output.
10. Conclusions.
11. Advantages and disadvantages of the software developed.

12. Future scope of the project.
13. References.

# Certificate Course in Computer Networking

**Course Duration: 60 hours**

## Scheme of Course

| Paper No. | Title of Paper | Maximum Marks | Passing Marks | Duration of Exam |
|---|---|---|---|---|
| | Computer Networking(Theory) | 50 | 20 | 3 hours |
| | Lab based on Computer Networking | 50 | 20 | 3 hours |

## Program Outcome:

### At the end of the program , student will be able to :

- Analyze, design, diagnose and document computer network specifications to meet client needs.
- Install and troubleshoot system hardware.
- Install, configure and troubleshoot client operating system.
- Disassemble, troubleshoot/debug, upgrade, replace basic components, and reassemble servers and client systems.
- Use proper computer system and networking terminology.
- Perform help desk functions to answer user questions and provide user training on application software and fundamental operating systems functions.

## Job Roles in Government Sector, IT Firm & Private Organizations:

- Network Engineer/ Junior Engineer
- Network Administrator
- Network  System Manager
- Network Consultant
- Web Administrator
- Computer Network Technician
- System Engineer

## Objectives:

1. Build an understanding of the fundamental concepts of computer networking.
2. Resource sharing
3. Increase system performance as the work load increases (load balancing).
4. To understand issues relating to networking.
5. To study & employ network defense measures.
6. User Authorization to access resource in a computer network
7. Describe the general principles of data communication.
8. Describe how computer networks are organized with the concept of layered approach.
9. Describe how signals are used to transfer data between nodes.
10. Implement a simple LAN with hubs, bridges and switches.
11. Describe how packets in the Internet are delivered.

**Paper Code:**
**Nomenclature: Computer Networking (Theory)**

Maximum Marks: 50
Minimum Marks: 20
Time: 3 hours

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. Student will be required to attempt FIVE questions in all. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions selecting one question from each Unit. All questions will carry equal marks.

## Unit I

Introduction to Data Communication and Computer Networks; Uses of Computer Networks; Types of Computer Networks and their Topologies; Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways;

Uses of computer networks ; Networks for companies, Networks for people, Social Issues: Classification of networks; Based on transmission technology, Based on the their scale,

Network Software: Network Design issues and Protocols; Connection-Oriented and Connectionless Services; OSI Reference Model; TCP/IP Model; Comparison of the OSI & the TCP/IP Reference Models;

Networking Models: Distributed Systems, Client/Server Model, Peer-to-Peer Model, Web-Based Model and Emerging File-Sharing Model;

## UNIT – II

Analog and Digital Communications, data and signals Concepts: Analog and Digital data and signals; Bandwidth and Data Rate, Capacity, Baud Rate; Guided and Wireless Transmission Media; Communication Satellites; Switching and Multiplexing; Modems and modulation techniques; ADSL and Cable Modems;

Data transmission modes: Serial & Parallel, Simplex, Half duplex & full duplex; Synchronous & Asynchronous transmission;
Network topologies: Linear Bus Topology, Ring Topology, Star Topology, Hierarchical or Tree Topology, Topology Comparison, Considerations when choosing a Topology;

## UNIT - III

Data Link Layer Design issues; Error Detection and Correction; Sliding Window Protocols: One-bit, Go Back N and Selective Repeat; Media Access Control: ALOHA, Slotted ALOHA, CSMA, Collision free protocols; Introduction to LAN technologies: Ethernet, Switched Ethernet, Fast Ethernet, Gigabit Ethernet; Token Ring; Introduction to Wireless LANs and Bluetooth; VLANs

## UNIT – IV

Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing; Link State Routing, Hierarchical Routing; Congestion Control; Traffic shaping; Choke packets; Load shedding; Elements of Transport Protocols; Application Layer: Introduction to DNS, E-Mail and WWW services;

Network Security Issues: Security attacks; Encryption methods; Digital Signature; Digital Certificate;

TEXT BOOKS:

- Andrew S. Tanenbaum, "Computer Networks", Pearson Education.

•Michael A. Gallo, William M. Hancock, "Computer Communications and Networking• Technologies", CENGAGE Learning.

REFERENCE BOOKS:

- Behrouz A Forouzan, "Data Communications and Networking", McGraw Hill.

•Bhushan Trivedi, "Computer Networks", Oxford• BCA-355: Programming Using Visual Basic

**Paper Code:**
**Nomenclature: Lab based on Computer Networking (Practical)**

**M.M: 50**
**Marks Time: 3 hours**

<u>**Distribution of**</u>
Experiment: 25
Practical Work Book: 15
Viva Voce: 10

**Course Outcome**:

After learning the course the students will be able to:

- Demonstrate a basic understanding of components of computer networks.
- Present conclusions effectively, orally and in writing.
- Identify the different types of network devices and their functions within a network
- Install LAN and WAN Connections.
- Installation and configure of Server and Clients.
- Administer and maintain a Computer Network.

**List of Experiments**

| S.No | Experiment |
|------|------------|
| 1 | Overview of Networks and layered communications, understanding of Network equipment, wiring in details 5 2 CAT6 UTP EIA/TIA 568A/B straight and cross-over wiring |
| 2 | Study of different types of Network cables and Practically implement the cross-wired cable and straight through cable using clamping tool. |
| 3 | Study of Network Devices in Detail. |
| 4 | Study of network IP. |
| 5 | Exploring Different LAN Switch Options |
| 6 | Creating of a LAN and Connect the computers in Local Area Network. |
| 7 | Installation of LAN cards(Wired / Wi-Fi) |
| 8 | Installation of CAT5 cable and RJ 45 connectors |
| 9 | Study of basic Network command and Network configuration commands. |
| 10 | Installation and connection of switches |
| 11 | Installation of Server(Windows and Linux) |
| 12 | Installationof Client |

| 13 | Creation of users and policies |
|----|-------------------------------|
| 14 | Assigning permissions |
| 15 | Sharing of resources(Printer, Drives, Scanner) |
| 16 | Configuring and Troubleshooting a switched network |
| 17 | Introduction to Packet Tracer |
| 18 | Configure a Network topology using packet tracer software. |
| 19 | Firewall Implementation, Router Access Control List (ACL) |
| 20 | Planning Network-based Firewalls |

## Hardware and Software Requirement

### Hardware Requirement

RJ-45 connector, Climping Tool, Twisted pair Cable

### Software Requirement
Command Prompt And Packet Tracer.

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# Certificate Courses In Desktop Publishing

**Duration of Course: 60 Hours**

## Scheme of the Course:.

| Paper No. | Title of Paper | Maximum Marks | Passing Marks | Duration of Exam |
|---|---|---|---|---|
| | Desktop publishing(Theory) | 50 | 20 | 3 hours |
| | Lab based on Desktop publishing | 50 | 20 | 3 hours |

**Program Outcome:** Upon successful completion of this course, students will be able to:

1. Develop proficiency in image editing with the help of Adobe Photoshop- a powerful and popular image editing software that helps to apply various effects easily and get consistent results.

2. Develop Proficiency in Designing using Corel draw-one of the most popular graphics designing software.

3. Work effectively with publications using Page maker- a software application that enables individuals and groups to create and edit publications

## Job Roles in Government Sector, IT Firm & Private Organizations:

- Newsletter Designer
- Font Designer
- Graphic Designer
- Web Designer
- DTP operators
- Desktop publishing specialists
- Electronic console display operators
- Electronic imagers
- Electronic pagination system operators
- Electronic publishers
- Electronic publishing specialists

## Objectives:

1. To train skilled manpower for Designing and publication market.
2. To learn Adobe PageMaker -a software application that enables individuals and groups to create and edit publications
3. To learn CorelDraw- one of the most popular graphics designing software available in market. This amazing designing Software meet the day-to-day demands of working designers.
4. To learn Photoshop- a powerful and popular image editing software that helps you to apply various effects easily and get consistent results.

**Organising Department/Association** DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS

- **Eligibility:**
  - Students of all streams can enroll for the course.

- **Structure of the Course:**
  - Paper I: Theory Paper
  - Paper II: Practical

**Paper Code:**
Nomenclature: Desktop publishing (Theory)

**Maximum Marks: 50**
**Minimum Marks: 20**
**Time: 3 hours**

**Note:** Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of four (short-answer type) questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

## UNIT 1

**INTRODUCTION TO COMPUTER :**booting process , history of computer , types of computers - , applications of computers , advantages of computers , basic computer organization - input devices - memory - processor - output devices , types of memory, difference between data and information , need of information types of programming languages, data organization , what are data files , what are program files , what are batch files multi-media technology & d.t.p 6 , types of software - system software - application software - custom software ,introduction to windows.

## UNIT 2

**INTRODUCTION TO PAGEMAKER 6.5** : hardware requirements for pagemaker 6.5, how to install pagemaker 6.5 , starting pagemaker 6.5,  opening screen ,menu bar introduction · file menu · edit menu · layout menu · type menu · element menu · utilities menu · view menu · window menu

tool box introduction · pointer tool · text tool · rotate tool · cropping tool · line tool · constrained line tool · rectangle tool · rectangle frame tool · ellipse tool · ellipse frame tool · polygon tool · polygon frame tool · hand tool · zoom tool,Control palette introduction · character view · paragraph view · object view working with palettes · color palette · styles palette · layers palette · master pages palette · hyperlink palette · library palette multi-media technology &d.t.p 8 · scripts palette  uses of guides ,

## UNIT 3

**INTRODUCTION TO CORELDRAW 9.0**: hardware requirement ,starting , opening screen , introduction of tool box :file menu · new · new from template · open · close · save · save as · revert · acquire image · import · export · send · print · print preview · print setup · document info · version control multi-media technology , edit menu · undo paste · redo · repeat · cut · copy · paste · paste special · delete · duplicate · clone · select all · properties · copy properties from · find and replace · insert new object · insert bar code , view menu · simple wire frame · wire frame · draft · normal · enhance · full screen preview · preview selected only · color palette · scrapbook · roll ups · dockers · toolbars · property bar · status bar · rulers · grid · guide lines · printable area · overprinted objects · text frames ,layout menu · insert page · delete page · rename page · goto page · page setup · object manager · graphic and text styles · color styles multi-media technology  · guide line setup · snap to grid · snap to guidelines · snap to objects , arrange menu · transform · clear transformations · align and distribute · order · group · ungroup · ungroup all · combine · break apart · lock object · unlock object · intersection · trim · weld · separate · convert to curves , effect menu · color adjustment · transform · artistic media · lens · add perspective · power click · clear effect · copy effect · clone effect , bitmap menu · convert to bitmap · edit bitmap · crop bitmap · trace bitmap · resample · inflate

bitmap · bitmap color mask · resolve link · update from link · 3d effects · art strokes · blur · color transform · contour · creative · distort multi-media technology · noise · sharpen · plug-ins , text menu · format text · edit text · fit text to path · fit text to frame · align to baseline · straighten text · writing tool · change case · make text html compatible · convert · text statistics · show non printing characters , tools menu · options · object manager · color management · palette editor · color styles · graphic and text styles · create · color scripts , window menu · new window · cascade · tile horizontally · tile vertically · arrange icon · color palettes · toolbars · close · close all · refresh window

## UNIT 4

**INTRODUCTION TO PHOTOSHOP 5.5**: hardware requirements , install photoshop ,multi-media technology , opening screen · menu bar · title bar · toolbox · status bar · pallets different menus in photoshop 5.5 file menu · new · open · open as · close · save · save as · save a copy · revert · place · import · export · automate · file info · page setup · print · jump to · preference · color setting · adobe online · exit , edit menu · undo · cut · copy · copy merged · paste · paste info · clear · fill · stroke · free transform · transform · purge , image menu · mode · adjust · duplicate · apply image · calculation · image size · canvas size multi-media technology · crop · rotate canvas · histogram · trap layer menu · new · duplicate layer · delete layer · layer option · adjustment option · effects · type · add layer mask · enable layer mask · disable layer mask · group with previous · ungroup · arrange · align linked · distribute linked · merge layer · merge visible · flatten image , select menu · all · deselect · reselect · inverse · color range · feather · modify · grow · similar · transform selection · load selection · save selection filter menu · artistic · blur · brush strokes · distort · noise · pixelate · render · sharpen · sketch · stylize · texture multi-media technology · video · other view menu · new view · preview · gamut warning · zoom in · zoom out · fit on screen · actual pixel · print size · show/hide path · show/hide edges · show/hide guides · lock guide · clear grid · show/hide grid · snap to grid window menu · cascade · title · arrange icon · close all · show tools · show navigator · show info · show options · show color · show channels · show paths · show history · show status bar introduction to photoshop toolbars · marquee tool & its subtools · move tool & its subtools · lasso tool & its subtools · stamp tool & its subtools · history brush tool & its subtools · pencil tool & its subtools · blur tool & its subtools · dodge tool & its subtools · pen tool & its subtools · type tool & its subtools · gradient tool & its subtools · magic tool · airbrush tool · paint brush tool · eraser tool multi-media technology · measure tool · paint bucket tool · eye dropper tool · hand tool · zoom tool working with pallets · navigator pallet · info pallet · options pallet · color pallet · swatches pallet · brushes pallet · layer pallet · channels pallet · paths pallet · history pallet · actions pallet

Text books:

1. Design Principles for Desktop Publishers by Tom Lichty
2. D.T.P (Desktop Publishing) Hand Book Paperback (2012) by Mr. Kalpesh Patel

REFERENCES:

1. "Qlik Sense (R) Cookbook" by Philip Hand and Neeraj Kharpate
2. "Adobe InDesign CC Classroom in a Book (2017 release)" by Kelly Kordes Anton and John Cruise
3. Inside Adobe Photoshop 4by Gary David Bouton
4. Adobe in design cs5 bible by Galen_Gruman
5. Desktop Publishing: Practical Guide To Publish Anything on Your Desktop by Bittu Kumar

**Paper Code:**
**Nomenclature: Lab based on Desktop publishing(Practical)**

**M.M: 50**
**Time: 3 hours**

<u>**Distribution of Marks**</u>
Experiment: 25
Practical Work Book: 15
Viva Voce: 10

**Course Outcome**:

After learning the course the students should be able to:

i.    Understand the basics concepts of designing and editing.
ii.   Alter an image to fix the faults
iii.   Give a professional look to a photograph
iv.   Create and edit New artwork images
v.    Working with Layers
vi.   Working with Bitmaps

**List of Practical**

1.  WINDOWS BASICS

    ✓ EDITING APPEARANCE OF DESKTOP
    ✓ ADDING AND REMOVING PROGRAMS THROUGH CONTROL PANEL
    ✓ FONT MANAGEMENT

2.  PAGEMAKER

✓ EDITING & HANDLING TEXT

✓ GRAPHICS HANDLING

✓ WORKING WITH PALLETTES

✓ WORKING WITH MULTIPLE OPEN PUBLICATIONS


3.  COREL DRAW

✓ DRAW SHAPES AND ADD COLOR TO OBJECTS

✓ DUPLICATE AND ROTATE OBEJCTS

✓ MIRROR OBJECTS

✓ IMPORT FILES

✓ USE SMART DRAWING TOOLS


4.  PHOTOSHOP

✓ This exercise can be solved using the following functions:
  Selection Tools, Copy, Cut, Paste, Move Tool

✓ This exercise can be solved using the following functions:
  Lasso- and Polygonal Lasso Selection Tools, Copy, Paste Into, Move Tool, Zoom Tool, Transform

✓ This exercise can be solved using the following functions:
  Quick Select Tool (or Magic Wand Tool), Invert Selection, Copy, Paste

✓ This exercise can be solved using the following functions:
  Paint Bucket Tool, Color Picker, Brush Tool

**Major Equipment's:** - Latest PCs with related software
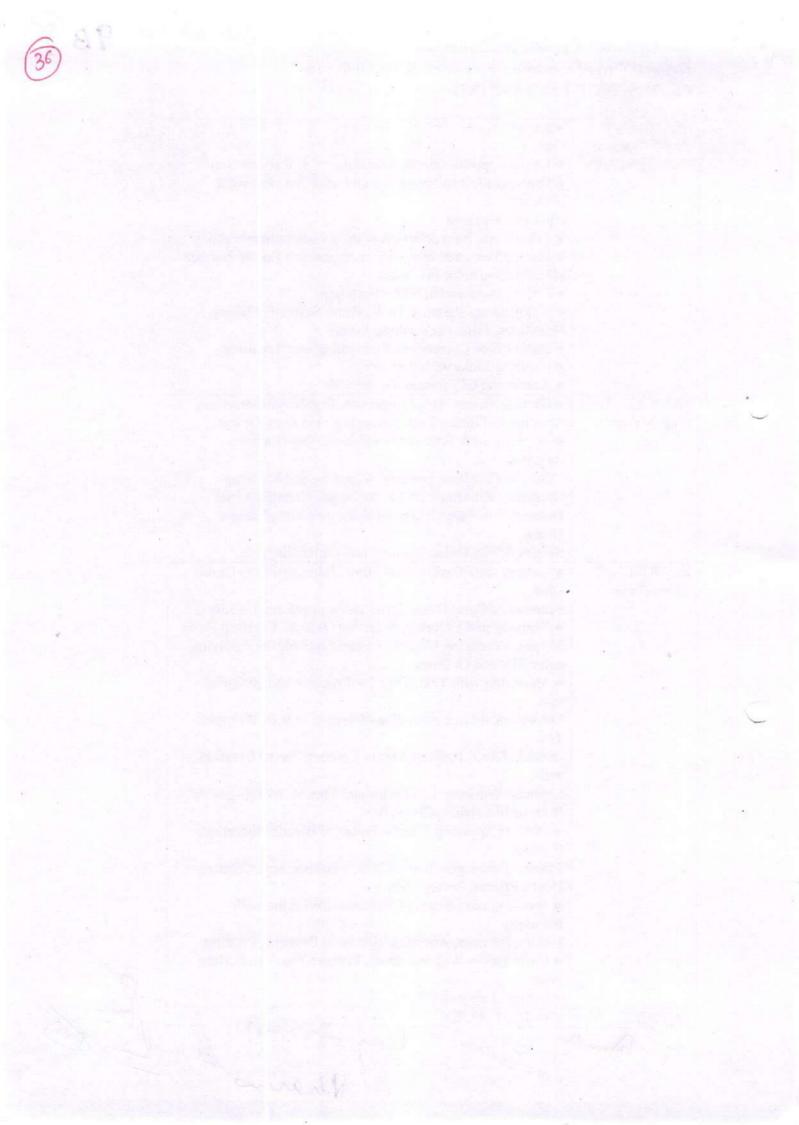
**List of Open Source Software/learning website:**

- Corel Draw X7 Graphic Designing From Scratch with Projects!
- Corel Draw Tutorials
- learning resources on the Adobe site.
- Tuts+ network of learning sites.
- https://download.cnet.com/Web-Page-Maker/3000-10247_4-10213459.html

# Job Oriented Certificate Courses –
## Department of Computer Science & Applications
### #1. DESKTOP PUBLISHING

| | |
|---|---|
| MODULE - I<br>(MS-PAINT)<br>(PHOTOSHOP) | • Knowledge of available file types (JPG, TIFF, ICO, PNG, GIF...)<br>• Display options (zoom, miniature, grid, resizing etc.)<br>• Drawing tools overview, Colors selection with right click/left<br>click in the palette<br>• Copy/Paste from selection with or without transparency<br>• Insert an external image in a composition Colors number selection and color inversion<br>• Getting Acquainted with Photoshop<br>• Color Basics Painting Tools, Brush Settings, Making Selections, Filling & stroking Layers<br>• Basic Photo Corrections Retouching and Repairing,<br>• Creating Links within an image<br>• Animating GIF images for the web |
| MODULE - II<br>(PageMaker) | • Getting Started with PageMaker, PageMaker Interface, Creating & Editing Text, Managing Text as an Object.<br>• Working with Text and Graphics, Using Graphics, Applying<br>Colors to Graphics, Framing, Cropping and Masking Graphics, Working with Master pages, Creating a PDF Document in PageMaker, Working with Data Merger, Using<br>Scripts, Using Object Linking and Embedding. |
| MODULE - III<br>(CorelDraw) | • Getting started with Corel Draw, Introduction to Corel Draw,<br>Features of Corel Draw, Corel Draw Interface, Tool Box,<br>• Drawing and Coloring, Selecting Objects, Creating Basic Shapes, Reshaping Objects, Organizing objects, Applying color fills and Outlines<br>• Mastering with Text, Text Tool Artistic and paragraph text,<br>Formatting Text, Embedding Objects into text, Wrapping Text<br>around Object, Linking Text to Colours; Frame Creation and<br>Layouts; Working with Forms and Menus; Working with Buttons like Radio, Check Box<br>• Objects Applying Effects, Power of Blends Distortion, Contour<br>Effects, Envelopes, Lens effects, Transparency, Creating Depth Effects, Power Clips<br>• Working with Bitmap Commands, Working with Bitmaps,<br>Editing Bitmaps, Applying effects on Bitmaps, Printing<br>• Corel Draw- Web resources, Internet Tool bar, Setting your<br>webpage, Exporting files. |
| MODULE – IV | PROJECT WORK |

# Certificate course in System Administration with LINUX

**Course Duration:60 hours**

## Scheme of Course

| Paper No. | Title of Paper | Maximum Marks | Passing Marks | Duration of Exam |
|-----------|----------------|---------------|---------------|------------------|
| VCS 108(i) | System Administration with LINUX | 50 | 20 | 3 Hours |
| VCS 108(ii) | Lab Based on System Administration with LINUX | 50 | 20 | 3 Hours |

**Program Outcome:**

After completing this course, students will be able to:

- Install and configure the Linux operating system
- Manage the resources and security of a computer running Linux at a basic level
- Make effective use of Linux utilities, **and scripting languages**
- Configure and manage simple TCP/IP network services on a Linux system
- Carry the duties of a Linux System Administrator

**Outline of Course**

1. Commands
2. Shell & AWK Programming
3. User administration
4. File system administration
5. Disk Quota administration
6. Network administration
7. Introduction to mail and file server.

**Job Roles in Government Sector,IT Firm & Private Organization:**

- Linux Administrator
- Linux Engineer
- Junior System Administrator
- Senior System Administrator

**Objectives:**

On completion of this course learner will be able to:

• Understand the role and responsibilities of a Unix system administrator

- Troubleshoot Linux problems
- Perform user administration
- Apply user-level security
- Manage logging
- Manage kernel services and configure the kernel
- Manage devices

**Paper Code: VCS 108(i)**

**Nomenclature: System Administration with LINUX**

**Maximum Marks: 50**
**Minimum Marks: 20**
**Time: 3 hours**

**Note:** Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of four (short-answer type) questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

## Unit I

Linux basic concepts & installations:Installation in Standalone Machine, Installation through NFS,Installation through·FTP, Installation through HTTP, Installation through KICKSTART. File System Management:Creation of File Systems, Understanding EXT2, EXT3& EXT4 File Systems, Converting Ext2 to Ext3 file systems, Reverting back from Ext3 to Ext2 files systems, Understanding fdisk,e2label, mount, umount commands. Linux basic concepts & installations: Installation in Standalone Machine,Installation through NFS, Installation through FTP, Installation through HTTP, Installation through KICKSTART. File System Management:Creation of File Systems, Understanding EXT2, EXT3& EXT4 File Systems, Converting Ext2 to Ext3 file systems, Reverting back from Ext3 to Ext2 files systems, Understanding fdisk,e2label, mount, umount commands, Understanding fstab and mtab files ,TROUBLESHOOTING.
User management:Understanding different types of groups and creation of groups,Creation of users in different groups,Understanding Passwd, Shadow Files, Understanding passwd aging,Creation of quotas for users, groups and file systems, Understanding users security files ,The different commands for Monitoring the users, TROUBLESHOOTING.Run levels:Understanding the different types of run-levels, Understanding different types of shutdown commands, Understanding run control scripts, Understanding the different types,

## Unit 2

Network file system (NFS):Understanding NFS server and NFS clients, Understanding daemons and files in NFS of boot phases, Configuring NFS server and different NFS clients, Configuration of autofs, NFS securityFile transfer protocol:Understanding the features and advantages of FTP server, Configuring FTP server and FTP clients, Configuring FTP server for anonymous and real users with download and upload permissions, Configuring FTP user access, FTP security, Understanding FTP Basic Commands, Configuring of anonymous FTP Server. XINETD:Understanding xinetd based and non xinetd based services, Configuring xinetd based services, Xinetdsecurity.TCP WRAPPER:Understanding TCP WRAPPER, Configuring TCP WRAPPER for services.Domain naming service:Understanding DNS service and different types of DNS servers, Configuring DNS (master) DNS (Slave), Understanding & Configuring forward (DNS) and cache (DNS) of boot phases, Understanding different types of files when the system is booting, TROUBLESHOOTING.

## Unit 3

Logical volume manager (LVM):Creation of file systems and converting into LVM, Creation of physical partitions, Creation of volume groups, Creation of logical partitions, Extending the volume group, Extending the logical partitions.Package Manager (RPM):Understanding the features and advantages of RPM,

Installation of RPM packages, Upgradation of RPM, Verification of RPM, Q u e r y i n g , T R O U B L E SHOOTING.Backup and recovery:Understanding different types of file system backup, Understanding different types of files backups, Understanding different types of file system backups, Understanding different types of dump levels, Understanding monthly/ weekly/ daily backups, Different types of backup strategies.Automation of jobs:At Jobs .Cron JobsNetwork information service:Understanding NIS and daemons at NIS (Server, Slave and Clients), Configuring NIS (master), NIS (slave) and NIS clients in heterogeneous environments, Integrating NIS (master and slave) with NFS Server.

## Unit 4

Dynamic host configuration protocol:Understanding DHCP, Configuring DHCP server for different DHCP clientsAPACHE:Understanding APACHE, Configuring APACHE web server with virtual hosting, Configuring APACHE web server with IP BASED, HOST BASED and PORT BASED, Configuring member logins for APACHE web server.SAMBA:Understanding the features and advantages of SAMBA server, Configuring SAMBA for heterogeneous environment, Sharing the resources between unix to unix using SAMBA, Sharing the resources between windows to unix (vice-versa), SAMBA security.SQUID:Understanding SQUID proxy, Configuring SQUID proxy with ACL.Raid levels:Understanding RAID LEVELS, Configuring different types of RAID LEVELS (0,1and5).

**Paper Code: VCS 108(i)**

**Nomenclature: System Administration with LINUX**

**M.M: 50**
**Time: 3 hours**

**Distribution of Marks**

Experiment: 25
Practical Work Book: 15
Viva Voce: 10

**Course Outcome:**

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

- Install and administer Linux Operating System.
- Apply file processing, process management, IO management, queues management, networking, storage backup, account management, proper system start-up and shutting down, as well as other tasks.
- Understand and administer file permissions on directories and regular files
- Planning and creating disk partitions and file systems
- Performing maintenance on file systems
- Identifying and managing Linux processes
- Performing backups and restoration of files
- Working with system log files
- Troubleshooting system problems
- Analyzing and taking measures to increase system performance

**List of Experiments:**

1. Installation of LINUX operating system
2. Installation of office productivity software (MS Office/ Open Office)
3. User Management
4. Directory Management commands
5. Startup & Shutdown scripts
6. Process management commands and their execution.
7. Firewall configuration in Linux
8. Study of Important LINUX Services
9. Superusers and the Root Login, Sharing Superuser Privileges with Others (su and sudo Commands)
10. TCP/IP Networking Fundamentals
11. Partitions,Logical Volume Manager - LVM
12. File System Overview
13. Swap Partition Considerations
14. Other Partition Considerations
15. The Linux Boot Loader: grub
16. Software Package Selection
17. Adding and Configuring Peripherals,Printers,Graphics Controllers
18. Basic Networking Configuration: File Permissions,Directory Permissions,Octal Representation

Changing Permissions,Setting Default Permissions

19. Access Control Lists (ACLs)
20. Filesystem Types
21. Conventional Directory Structure
22. Mounting a File System, The `/etc/fstab` File
23. Special Files (Device Files),Inodes
24. Hard File Links,Soft File Links
25. Creating New File Systems with `mkfs`
26. Repairing File Systems with `fsck`
27. File and Disk Management Tools
28. Characteristics of Processes,Parent-Child Relationship,Examining Running Processes Background Processes,Controlling Processes,Signaling Processes,Killing Processes Automating Processes
29. System Processes (Daemons)
30. Backup Concepts and Strategies ,User Backups with the `tar` Command,System Backup Options
31. Common Problems and Symptoms,Troubleshooting Steps
32. Repairing General Boot Problems
33. Hard Drive Problems
34. Restoring Shared Libraries

# Certificate Course in Network Administration

**Course Duration: 60 hours**

## Scheme of Course

| Paper No. | Title of Paper | Maximum Marks | Passing Marks | Duration of Exam |
|---|---|---|---|---|
| | **Network Administration (Theory)** | 50 | 20 | 3 hours |
| | **Network Administration (Practical)** | 50 | 20 | 3 hours |

- **Program Outcome:** To Enhance the excellent analytical skills to understand the complexities of the network to diagnose and repair any issues that may arise.

- **Job Roles:** Network Administrator
  Technical Support Engineer
  System Administrator
  Network Connectivity Engineer
  Server Engineer

- **OrganizingDepartment/Association:** Computer Science & Applications.
- **Structure of the Course:**
  - Paper I: Theory Paper
  - Paper II: Practical

- **Scheme of Examination:** There will be an Examination of 50 marks each. There will be a written examination carrying 50 marks and practical examination will carry 50 marks.

**Paper Code:**
Nomenclature: Network Administration (Theory)

**Maximum Marks: 50**
**Minimum Marks: 20**

Time: 3 hours
**Course Learning Outcome:**
After learning the course the students should be able to:

1 Design and configure peer-to-peer networks to share resources;
2. Analyse requirements and design network architecture for a given scenario;
3. Design and configure IP addressing schemes for a given scenario;
4. Design and configure a client-server network and required network services for a given scenario;
5. Evaluate and critique a design for a systems and network solution.

**Note:** Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of four (short-answer type) questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

# Unit –I

Basics of computer, Organization of computer, Software and hardware, Input/output devices, Network Hardware, Computer topology, LAN, WAN, MAN, PAN, CAN, Networking Model: The OSI model, TCP/ IP Model

# Unit-II

Network adapters, introducing protocols, Cabling and troubleshooting, Types of networks, various networking devices: Routers, Switches. Modems. Hub,basicaddressing, Wired and Wireless technology.

# Unit-III

Introduction to servers and network security, Types of servers: Files servers,  Email Servers, Proxy servers etc .Basics of Internet and Intranet:. Types of Internet connections:  Dialup, Broadband, Leased Line, Wi-Fi,  Wi-Max, 2G, 3G, 4G, WWW,

# Unit-IV

E-mails, Search Engines, Social Networking, Cloud application, Audio-video Conferencing. Voice over Internet Protocol (VOIP), Recovery and backup, Essential security measures.

**Text books:**

1 Behrouz A. Forouzan, "Data communication and Networking", Fourth Edition, Tata McGraw – Hill,2011.

2   "Data and Computer Communication" by William Stallings.

3   Nader. F. Mir, "Computer and Communication Networks", Pearson Prentice Hall Publishers, 2010.

4   Ying-Dar Lin, Ren-Hung Hwang, Fred Baker, "Computer Networks: An Open Source Approach",Mc Graw Hill Publisher, 2011.

## Reference books

1.  "The Practice of System and Network Administration: Volume 1: DevOps and other Best Practices for Enterprise IT" by Thomas A Limoncelli and Christina J Hogan.

2.  TCP/IP Illustrated, Volume 1: The Protocols by W. Richard Stevens.
3.  Unix Network Programming: Networking APIs: Sockets and XTI (Volume 1) by W. Richard Stevens.
4.  Advanced Programming in the Unix Environment by W. Richard Stevens, Addison-Wesley, 1993.

**Paper Code:**
**Nomenclature: Network Administration (Practical)**

**M.M: 50**   <u>**Distribution of Marks**</u>
**Time: 3 hours**

Viva Voce: 10

Experiment: 25
Practical Work Book: 15

**1 Inside the PC:**

Opening the PC and identification

Study of different blocks

Assembling and disassembling

**2 Network basic and configuration**

Setting IP addresses

Sharing files and folders

Network troubleshooting

PING test, ipconfig etc.

**3 Check MAC address**

**4 Subnet Calculations**

**5 Upgrading and repairing computer networks**

**6 Deploying and updating software**

**7 Managing servers and their operating systems**

**8 Managing cloud and physical network storage**

**9 Implementing security measures and basic testing**

### 'Certificate Course in Database Administration

### Scheme of Course

| Course Code | Course Name | Duration of the course | Maximum Marks | | | Duration of Exam | Medium of Instruction |
|---|---|---|---|---|---|---|---|
| | | | Theory | Practical | Total | | English and Hindi |
| | PAPER 1 | 30 hours | 50 | - | 100 | 3 Hours | |
| | PAPER 2 | | - | 50 | | | |

**Program Outcome:**

**At the end of the program student will be able to:**

- Use DBMS software to store and organize data.
- Plan, install, configure and design database.
- Apply migration, performance monitoring, security, troubleshooting, as well as backup and data recovery of the database.
- Learn about database administration concepts through real-time examples.
- Develop in-demand skills to administer Oracle Database through hands-on projects and use cases.

**Job Roles in Government Sector, IT Firm & Private Organizations:**

➢ Database Administrator

➢ Computer and Information Systems Manager

➢ Computer Network Architect

➢ Computer Programmer

➢ Computer Systems Analyst

**Objectives:**

➢ To equip learner with the skill of installation ,planning &database design
➢ To train student to store and organize data efficiently and economically.
➢ To make learner understand the role of DBA in organisation.
➢ Apply logical database design principles , including ER Diagram and database normalization.
➢ To Understand Backup systems in case of power outage and other disasters.
➢ To understand database integrity, transaction management, concurrency control of database, reliability and journaling.

**Course: Certificate Course in Database Administration**

**Paper Code:**

**Nomenclature of Paper:Database Administration(Theory)**

**Max Marks50**                                                    **Time:3 hrs**

**Note:** Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of four (short-answer type) questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

## UNIT 1

Introduction: DBMS architecture and data independence, DBA roles and responsibilities, SQL *PLUS Overview: SQL Plus Fundamentals, Producing more readable outputs, Accepting values at urntime, Using iSQL *Plus, Modifying Data: Introduction to DML Statements, Truncating a table, Transaction control language, Managing Constraints: Creating constraints, Dropping constraints, enabling and disabling constaints, deferring constraints checks

## UNIT 2

Managing Views: Creating and modifying views, Using views, Inserting, Updating and deleting data through views

User Access and Security: Creating and modifying use accounts, creating and using roles, granting and revoking privileges, Managing user groups with profiles

## UNIT 3

Oracle Overview and Architecture: An overview of logical an physical storage structures, Oracle memory structures, Oracle background processes, connecting to oracle instance, processing SQL command.Managing Oracle,Control and Redo Log Files: Managing the control files, Maintaining and monitoring redo log filesManaging tables, indexes and constraints: Storing data (create, alter, analyzing, querying table information), Managing indexes, Managing constraints

Managing Users and Security: Profiles, Managing users, managing privileges, managing roles, querying role information

## UNIT 4

Introduction to Network Administration: Network design considerations, network responsibilities for the DBA, network configuration, Overview of oracle Net features, Oracle Net Stack Architecture

Backup and Recovery Overview: Database backup, restoration and recovery, Types of failure in oracle environment, defining a backup and recovery strategy, Testing the backup and recovery plan

Introduction to performance tuning: brief overview of Tuning methodology, General tuning concepts

**Course: Certificate course in Database Administration**

## Paper Code:

## Nomenclature of Paper :Database Administration(Practical)

**Max Marks50**                                           **Time:3 hrs**

**Practical Notebook:10**

**Experiment:30**

**Viva Voce:10**
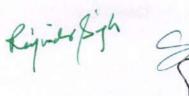
**Course Outcome**: After learning the course the students should be able to:

- ➢ understand Oracle Database Architecture

- ➢ understand how to install Oracle database/client binaries

- ➢ Query data using SQL and perform DDL, DML and DCL operations

- ➢ Configure backups and perform the recovery using the recovery manager

- ➢ Work with Oracle database parameters

- ➢ Managing Users/Schemas, and profiles

- ➢ understand to work with RDBMS to store and retrieve data

**List of Practicals**

1. Introduction to Oracle DBA.

2. Creating of multi-container databases and pluggable databases

3. Managing multi-container databases(cdb) and pluggable databases(pdb)

4. Managing tables spaces and users in multi-container databases(cdb) and pluggable databases(pdb)

5. Backup recovery and flashback multi-container databases(cdb) and pluggable databases(pdb)

6. Heat map,automatic data optimization and online datafile move

7. Auditing

8. Privileges

9. Oracle data pump,sql * loader and external tables

10. Recovery managers new features

11. Oracle data guard
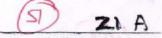
## Syllabus Description ofValue Added Course

Remark: Successful completion of the following course earns the student a certification issued by college.

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam |
| --- | --- | --- | --- | --- | --- |
| | | Theory | Practical | Total | |
| Digital Marketing and Web Designing | 34 | 40 | 60 | 100 | 3 Hours |

- **Objective:** Students will learn about different aspects of Digital Marketing and how they come together in a cohesive and effective Digital Marketing plan.Students will learn how to increase the visibility of your website using paid advertising. Students will also get an opportunity to develop websites and how to drive Traffic to your website using Keyword planning SEO and Google Analytics.

- **Programme outcome:** Students will develop digital advertising campaigns and develop websites using Wordpress, HTML & CSS and create content for proportional purposes develop a successful marketing strategy to position a brand, maintain its reputation and build a website, conduct surveys to identify the interest and concerns of key stakeholders.Students will alsogain knowledge of how to advertise your business on domestic as well as international market to increase visitors and ultimately more income.

- **Eligibility:**
  - Students of all streams can enroll for the course.
- **Structure of the Course:**
  Paper 1:Practical Examination and Viva-Voce
- **Scheme of Examination:**There will be aPractical Examination of **50**marks and Viva-voce of**50** marks.

## SYLLABUS
### Unit-I

**HTML**: Web Designing Introduction, HTML-Introduction,HTML-Basic Formatting Tags, HTML-Grouping Using Div Span, HTML-Lists, HTML-Images, HTML-Hyperlink, HTML-Table, HTML-Iframe, HTML-Form, HTML-Headers, Javascript, CSS

**FLASH: Flash Basics,** Shapes & objects, Transformation tools, Colors, palettes, text, Frame, key frames, layering, Sounds & video, Shapes, symbols, Animation, Publishing & exporting flash files.

## Unit-II

**PHOTOSHOP**:Introduction: Theory on graphic designing, Toolbar, Menu Bar, Options Bar, Toolbox All New, Opening an Existing File, Screen Modes, Standard Screen Mode, Full Screen Mode with Menu Bar, Creating a New Document, Saving Files, Reverting Files, Closing Files and Quitting Photoshop.Basic Image Manipulation, Color Basics, Paining Tools, Brush Settings, Making Selections, **Mastering Layers in Photoshop,**Layer Style and Filter Effects, **Automation, 3D and printing in Photoshop,**Exporting Formats.

## Unit-III

**WORDPRESS:**Introduction,Set up a MySQL database on their server,Install WordPress on the MySQL database, Plan their website by choosing color schemes, fonts, layouts, and more, Search for themes in WordPress,Select, install, and activate a theme,Add posts to their website,Create website pages,Add images, photo galleries, and more,Create tags for SEO and categories to organize their posts, Use WordPress as a content management system (CMS),Use widgets and plugins,Create an ecommerce site,Integrate WordPress with social media

**DIGITAL MARKETING :Basics**: Search Engine Optimization, Social Media Optimization, Social Media Marketing **Advanced**:SEO, Web Master Tool, Social Media Marketing, Google Adwords,Google Analytics, Affiliate Marketing,Email Marketing,Mobile Marketing,Digital Marketing Strategy,Ecommerce Marketing,Infographics Content Marketing,App Store Optimization

# #2. Programming with PYTHON

| | |
|---|---|
| MODULE - I (Getting started with PYTHON) | • Features, Advantages & Limitations of PYTHON<br>• Installing PYTHON<br>• Interacting with PYTHON; Python Shell, Command Line Interaction, Python Editor Window (Working in Script Mode)<br>• PYTHON Character Set, Tokens & Keywords<br>• Variables & Data Types (Mutable & Immutable)<br>• Expressions & Operators, Indentation in PYTHON<br>• User defined FunctionsSelections, Filling & stroking Layers<br>• Rules and Conventions for writing PYTHON Programs<br>• Comments & Debugging (Syntax, Run-time & Logical Errors) |
| MODULE - II (Conditional & Looping Constructs)) | • Types of Statements in PYTHON<br>• Program Control Flow<br>• Conditional Statements (if, if-else, if-elif-else statements)<br>• Iteration (for loop, while loop & Nested Loops)<br>• Jump Statements (break, continue & pass statement) |
| MODULE - III (Strings & Lists) | • Creating Strings & Accessing Characters (Indexing) in a string<br>• Traversing a String<br>• Special String Operations (Concatenating & Replicating), Membership Operators, Comparison Operators<br>• String Operators, String Methods & Built - in Functions<br>• Declaring/Creating/Initialising LIST<br>• Indexing (Accessing List Elements)<br>• Traversing a List, Aliasing, Comparing Lists<br>• Operators on Lists (Concatenation, Repetition/Replication, Membership Testing, Indexing, Slicing)<br>• Nested Lists, Copying Lists, Deletion Operation<br>• Built-in Functions/Manipulating Lists, Sorting Lists |
| MODULE - IV (Tuples, Dictionary & Modules) | • Creating, Accessing & Traversing a Tuple, Nesting of Tuples<br>• Tuple Operations (Tuple Slicing, Addition/Concatenation, Multiplication/Repetition, Membership Operator 'in' & 'not in'<br>• Comparing Tuples, Deleting a Tuple<br>• Dictionary in PYTHON, Methods to Create Dictionary<br>• Accessing Elements in Dictionary, Traversing a Dictionary<br>• Appending Values to a Dictionary<br>• Updating & Removing Elements in Dictionary<br>• Common DIctionary Functions & Methods<br>• Importing PYTHON Modules, Retrieving Objects from Module<br>• Module Aliasing, Member Aliasing, Locating Modules<br>• Standard Built - in PYTHON Modules & Functions |

# Value - Added Courses - Department of Computer Science & Applications

## #1. WEB DESIGNING USING HTML

| MODULE – I | Introduction to Internet and World Wide Web; Evolution and History of World Wide Web; Basic Features; Web Browsers; Web Servers; Hypertext Transfer Protocol; URLs; Searching and Web Casting Techniques; Search Engines and Search Tools |
|---|---|
| MODULE – II | Steps for Developing Website; Choosing the Contents; Home Page; Domain Names; Internet Service Provider; Planning and Designing Web Site; Creating a Website |
| MODULE – III | Web Publishing: Hosting Site; Introduction to HTML; Hypertext and HTML; HTML Document Features; HTML Tags; Header, Title, Body, Paragraph, Ordered/Unordered Line, Creating Links; Hea Styles; Text Structuring; Text Colors and ders; Text Background; Formatting Text; Page layouts; Insertion of Text, Movement of Text |
| MODULE – IV | Images: Types of Images, Insertion of Image, Movement of Image, Ordered and Unordered lists; Inserting Graphics ; Table Handling Functions like Columns, Rows, Width, Colours; Frame Creation and Layouts; Working with Forms and Menus; Working with Buttons like Radio, Check Box |

## #2. DIGITAL MARKETING

| MODULE-I | Introduction to Digital Marketing | Digital Marketing Principles and different channels, Difference between inbound and outbound marketing strategies, using several tools to create a buyer persona |
|---|---|---|
| | Content Marketing | Content Marketing Concepts & Strategies; Planning, Creating, Distributing & Promoting Content, Using Content Research for Opportunities, Latest trends in digital marketing, creating content for social media platforms and websites. |
| MODULE-II | Social Media Marketing | Introduction to Major Social Media Platforms for Marketing, Developing Data-driven Audience & Campaign Insights, Social Media for Business, Creation & Optimization of Social Media Campaigns. |
| | Search Engine Optimization | Search Engine Optimization Basics, Keywords and SEO Content Plan, SEO - Business Objectives, Writing SEO Content; On-site & off-site SEO, Optimize Organic Search Ranking, etc. |
| MODULE-III | E-mail Marketing | Effective E-mail Campaigns, E-mail Plan, E-mail Marketing Campaign Analysis, |
| | Web Design | Web design, optimization of websites; Publishing a basic website; User-centred Design and Website Optimization; Design Principles and Website Copy. |
| MODULE-IV | Introduction to CRM | Fundamentals to CRM; CRM Platforms; CRM Models; CRM Strategy, etc. |
| | Video Advertising | Basics of Video Advertising; Creating Video Campaigns; Measurement & Optimization; Creating & Managing a YouTube Channel; Targeting Video Campaigns, etc. |

## #3. MS – WORD

| MODULE - I (Text & Paragraph Formatting) | • Introduction to Word-Processing & Office Automation<br>• Installation of MS-Office & familiarisation with Toolbars<br>• Concept of Files & Folders, Usage of Windows Explorer<br>• Basics of Typing, Creation, Saving, Moving, Deletion etc..<br>• Text Formatting; applying font styles, sizes and colors etc..<br>• Paragraph Formatting; Drop Cap, Spacing, Text Columns etc.. |
|---|---|
| MODULE - II (Using In-built Utilities) | • Using Spell Checker, Checking Grammar & using Thesaurus<br>• Adding Autocorrect Entries with & without formatting<br>• Headers & Footers<br>• Bullets & Numbering<br>• Borders & Shading<br>• Creating Bookmarks<br>• Inserting ClipArt, Word Art, Pictures, Objects, symbols, equations, hyperlinks etc.. |
| MODULE - III (Working with Tables & Tabs) | • Table creation and setting custom row - column width<br>• Entering & editing data in tables<br>• Formatting style and applying grid lines<br>• Merging & Splitting of cells<br>• Converting text to table<br>• Working with TABs; Setting Custom Tabs |
| MODULE - IV (Mail Merge & MACRO) | • Creating Data Source & Main Document<br>• Creating a Mail Merged Document<br>• Creating & Running MACRO |

## #4. MS – EXCEL
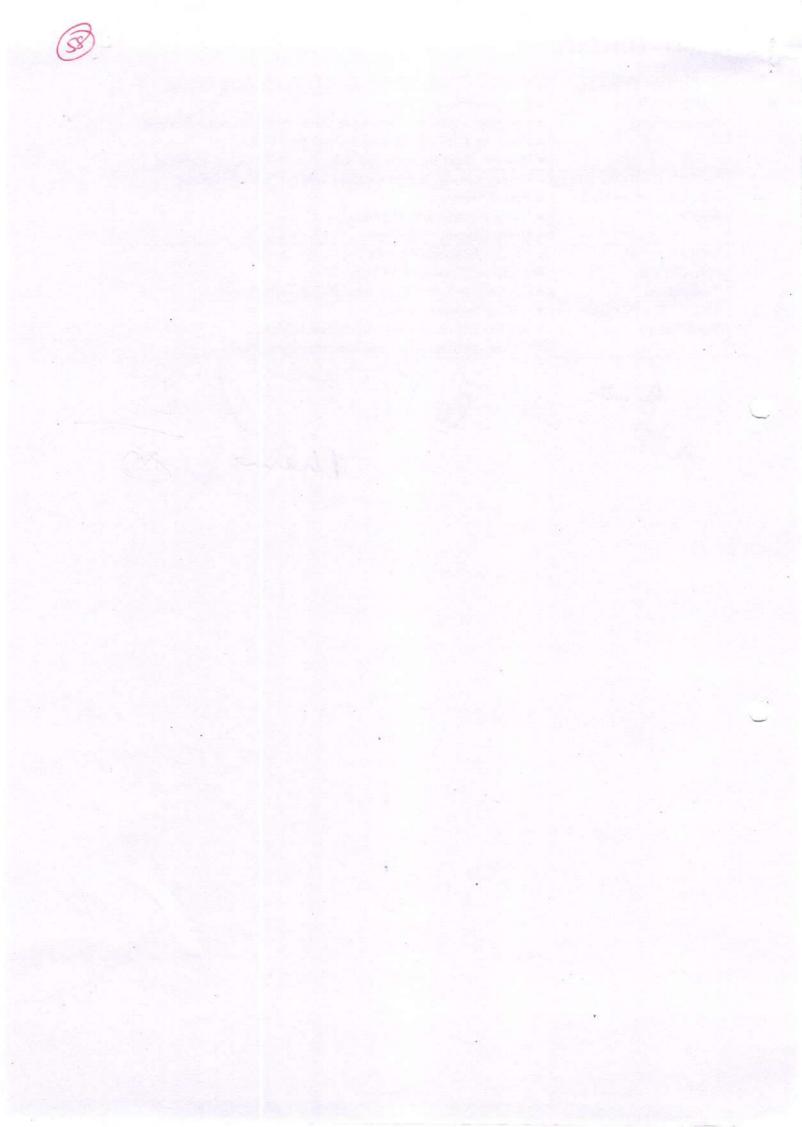
| MODULE - I (Starting with Spreadsheets) | • Introduction to Spreadsheets & Office Automation<br>• Installation of MS-Office & familiarisation with Toolbars<br>• Creating, Closing, Saving & Opening of Workbook<br>• Concept of Workbook - Worksheets, Row, Column & Cell<br>• Components of Workbook & Worksheet<br>• Inserting, Deleting, Copying, Moving, Renaming Worksheets |
|---|---|
| MODULE - II (Working with Data) | • Autofill<br>• Merging - Unmerging, Vertical and Horizontal Alignments<br>• Headers & Footers<br>• Border or gridline styles<br>• Data Sorting and Filtering<br>• Inserting ClipArt, Word Art, Pictures, Objects, symbols, equations, hyperlinks etc.. |
| MODULE - III (Working with Formulas & Functions) | • Using Names in Formulas and Commands; Referencing Named Cells, Naming Formulas and Constants<br>• Using Operators in Formulas<br>• Changing Formulas to Values<br>• Categories of Functions<br>• Moving or Copying Formulas<br>• MACRO |
| MODULE - IV (CHARTS) | • Understanding of various types of CHARTS<br>• Creating, Editing & Printing CHARTS |

# #5. MS – POWERPOINT

| MODULE - I (Starting with PowerPoint Presentations) | • Starting Powerpoint & Understanding of Screen Elements<br>• Components of a Slide<br>• Creating, Copying, Moving & Deleting a Slide with in a ppt<br>• Creating, Closing, Saving & Opening of PPT<br>• Placing "Text Box, Picture, Clip Art, Video Clip" in Slide |
|---|---|
| MODULE - II (Working with Views & in-built utilities ) | • Using existing Templates and Creation New Templates<br>• PowerPoint Views<br>• Using Layouts and Themes<br>• Using Shapes, Word Art |
| MODULE - III (CHARTS & Transitions) | • Using Charts and Graphs<br>• Applying Transition Effects<br>• Controlling Transitions manually and with timer |
| MODULE - IV (Slide Show Setup) | • Adding Sound to a ppt<br>• Adding and controlling Animation Effects<br>• Setting up Slide show and Looping Slide show |

# Certificate Course in Open Source Software

**Course Duration: 60 hours**

## Scheme of Course

| Paper No. | Title of Paper | Maximum Marks | Passing Marks | Duration of Exam |
|---|---|---|---|---|
| | Open Source Software | 50 | 20 | 3 hours |
| | Lab based on Open Source Software | 50 | 20 | 3 hours |

## Program Outcome:

- Able to recognize the benefits and features of Open Source Technology.

- Interpret, Contrast and compare open source products among themselves.

- Understand and demonstrate Version Control System along with its commands.

- Be familiar with open source software products and development tools currently available in the market.

## Job Roles in Government Sector, IT Firm & Private Organizations:

- Software Developer
- System Engineer
- Security Professional
- Project Manager
- Software Executives
- System Designer.
- Information Systems Manager.

## Objectives:

To provide a basic idea of Open source technology, their software development process so as to understand the role and future of open source software in the industry along with the impact of legal, economic and social issues for such software.

**Paper Code:**
**Nomenclature: Open Source Software (Theory)**

Maximum Marks: 50
Minimum Marks: 20
Time: 3 hours

**Note:** Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of four (short-answer type) questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

## UNIT I

**Introduction:**

Open Source Systems: Introduction, Objectives, Overview of Open Source System, Open source tools, Open source components, Open source methodology
Contrasting and comparing open source vs. traditional development methodologies
Open Source Software Development Models, OSS: UNIX, PHP (WordPress, Zoomla) and Android, MySQL, Libre Office, VLC Media Player, Mozilla Firefox, Linux

## UNIT II

**Licensing:**

Commercial License versus Open Source License, Open Source Licensing: Contract, and Copyright Law -Basic Principles of Copyright Law, Contract and Copyright, Open Source Software Licensing, Types of OSS licenses, OSS licensing strategies, Issues
with Copyrights and Patents, Warranties, License Issues (MPL, GPL, LGPL, etc.)

## UNIT III

**Open Source Development:**

**Linux:** User accounts, Logging in and Logging out, Command line, Simple commands
Linux file system, Linux files, i-nodes and structure and file system related commands,
Shell as command processor, Shell variables, Creating command substitution, Scripts, Functions, Conditionals, Loops, Customizing environment.
**Libre Office:** Writer, Calc, Impress, Draw (vector graphics), Base (database), Math (formula editor)

## UNIT IV

**Open source software tools:**

**Core Applications:** GIT, GIMP, Inkscape, Scribus, MyPaint, Blender, Krita
**Video tools:** Kdenlive, Shotcut, OpenShot Video Editor

Text books:

1. Ellen Siever, Stephen Figgins, Robert Love, Arnold Robbins, "Linux in a Nutshell", Sixth Edition, OReilly Media, 2009

REFERENCES:

1. Professional Linux Programming by Mathew, vol. 1 & 2, Wrox-Shroff, 2001.
2. Running Linux by Welsh & Kaufmann, O'Reiley & Associates, 2000.

**Paper Code:**
**Nomenclature: Lab based on Open Source Software (Practical)**

**M.M: 50**
**Time: 3 hours**

<u>**Distribution of Marks**</u>
Experiment: 25
Practical Work Book: 15
Viva Voce: 10

**Course Outcome**:

After learning the course the students should be able to:
* Install open source operating system
* Identify and use UNIX/Linux utilities to create and manage simple file processing operations, organize directory structures with appropriate security, and develop shell scripts to perform more complex tasks.

**List of Experiments:**

**Linux:**
* Installation of Unix/Linux operating system.
* Study of logging/logout details.
* Study of Unix/Linux general purpose utility command list obtained from (man, who, cat, cd, cp, ps, ls, mv, rm, mkdir, rmdir, echo, more, date, time, kill, history, chmod, chown, finger, pwd, cal, logout, shutdown) commands.
* Study of vi editor.
* Study of Unix/Linux files system (tree structure).

**Libre Office:**
* Page setup, Text formatting, Editing, SmartArt, Quick Access,Title and ribbon bar, Spellcheck and Grammar check
* Spreadsheets, Workbooks, Formulas, Data Linking, Charts, Data Analysis, Macros , IF Statements, Data Validation
* Presentation design, Templates, Custom slides, Animation, Manuscripts, Creating graphs and charts.

**Major Equipment's:** - Latest PCs with related software.

## Syllabus Description of Value Added Course

Remark: Successful completion of the following course earns the student a certification issued by college.

### Typing and Shorthand (English)

| Course Name | Duration of the course | Maximum Marks | | | | Duration of Exam |
|---|---|---|---|---|---|---|
| | | Shorthand Theory | Shorthand Practical | Typing Practical | Total | 3 Hours |
| Typing and shorthand English | | 50 | 50 | **50** | **150** | |

**Introduction:** Stenography is job - oriented course. It is known as Dual Art. It is unique combination of Shorthand and Typewriting. In other words Shorthand plays a predominant role in for establish a career. Steno is a kind of coded language which helps an individual to write long length translation into a small word or in the small length. Basically, the word steno can be described as the process writing in shorthand. Steno is only where spoken words have been documented as such. Stenographer records the spoken words of the individual into in a coded language with the speed of other individual spoken speed in the coded language and after that decode into original language i.e. Hindi or English.

**Objective:** This course is very much in demand for its practical utility in the professional world. So the syllabus has been designed to equip the students to impart sufficient knowledge. Training is given to develop their Steno typing skills and to obtain computer typing skills which enable them after getting training in this field, will not face difficulty in getting suitable jobs.

**Programme Outcome:**

There is a high demand for the stenographer in every department and every field irrespective of being public sector or private sector. Stenographer are primarily employed by the courts and by those in the legal profession because court official and lawyers need an exact transcript to use during the trials and also can get the job in banks, Excise, High Courts Para-Military, Ministry of Home-Affairs, Indian Railways, Parliament Lok Sabha and Rajya Sabha He/ She can join any organization as a Stenographer, as a personal assistant, and also can be join as a reporter in any newspaper or magazine industry. Newspaper reporters can much more be benefited from the skill of stenography. They can write down their repots in shorthand on the spot of any incident or happening and later can translate on computer from the shorthand notes their report in fully.

- **Eligibility:**
  - Students of all streams can enroll for the course.
- **Structure of the Course:**
  Paper 1: Practical Examination (Shorthand)
  Paper 2: Theory   Examination (Shorthand)
  Paper 3: Typing    Practical

**Scheme of Examination:** There will be a practical Examination of 50marks and Theory Examination 50 marks & Typing practical 50 marks.

## Syllabusfor Value Added Courseof Typing and Shorthand (English)

Unit-1 Introduction to shorthand: The Consonants, Vowels, Intervening Vowels and their positions, Grammalogues, Punctuationssigns, Alternatives signs for 'r' and 'h'.
Unit-2 Diphthongs, Abbreviated 'W' and Phraseography including tick 'The'
Unit-3 Representing 'S' and 'Z' with Circle and Strokes, large Circles 'SW' and 'SS' or 'SZ'
Unit-4 Loops 'ST' and 'STR' initial Hooks to Straight Strokes and Curve, 'N' and 'F' Hooks, alternativesforms for fr' and 'vr' etc. with intervening vowels.
Unit-5 Circles and Loops to final hooks, the Shun hook.

Practical: **The candidates should be able to perform all the tasks in practical examination as have been taught for the theory examination.**

## Syllabus for Typewriting Practical

]Unit-1 Touch Typewriting Ergonomics, Correct sitting posture, Position of keyboard, Method of
Typewriting: Touch method of Typewriting, Sight method of typewriting, Positioning of fingers
on fingers on the keyboard according to Touch method of typewriting.
Unit-2 Practicing second row and third row combined. (Drill exercises) – Practicing first, second and
third row combined uses of functional keys.
Unit-3 Practice of A to Z and reverse – Practice to attain speed on sentences and paragraphs
Practice of Business and official letters. (30 W.P.M.)

#2. TAXATION

| | |
|---|---|
| MODULE - I | Introduction to income tax: concept, tax, person, income, agricultural income, casual income, previous year, financial year, assessment year, gross total income, total income; tax management: tax evasion, avoidance, and tax planning.<br>Basis of charges: scope of total income, residence and tax liability, income which does not form part of total income. |
| MODULE - II | Heads of income: income from salary, house property; profit and gains from business and profession, capital gains and other sources.<br>Clubbing and aggregation of income.<br>Provisions regarding set-off and carry forward of losses. |
| MODULE - III | Deductions under section 80C to 80U in computing total income.<br>Computation of total income and tax liability of an individual and H.U.F.<br>Computation of total income and tax liability of a Firm.<br>Deduction of tax at source; advance payment of tax. |
| MODULE - IV | Income tax authorities and their powers.<br>Procedure for assessment; different types of returns.<br>Procedure of filing e-return and revised return.<br>Recovery and refund of tax.<br>Penalties and prosecutions; appeals and revision. |

#3. Advertising & Marketing Communication

| | |
|---|---|
| MODULE - I | Communication and advertising mix: communication process; advertising functions; types of advertising; e-advertising; economic, legal, ethical and social aspects of advertising; setting advertising objectives, Dagmar approach; Advertising budget. |
| MODULE - II | Advertising: meaning, importance & scope, advertising vs. publicity, promotion mix, advertising process. Creative aspects of advertising: advertising appeals, copy writing, headlines, illustrations and message. |
| MODULE - III | Advertising media: types of media, merits and demerits; media planning and scheduling. Advertising agency: concept, role & relationship with clients, advertising department. |
| MODULE - IV | Advertising and consumer behavior. Advertising Effectiveness: concept and benefits; measuring advertising effectiveness: pre, post and concurrent tests |

## #1. BUSINESS MANAGEMENT
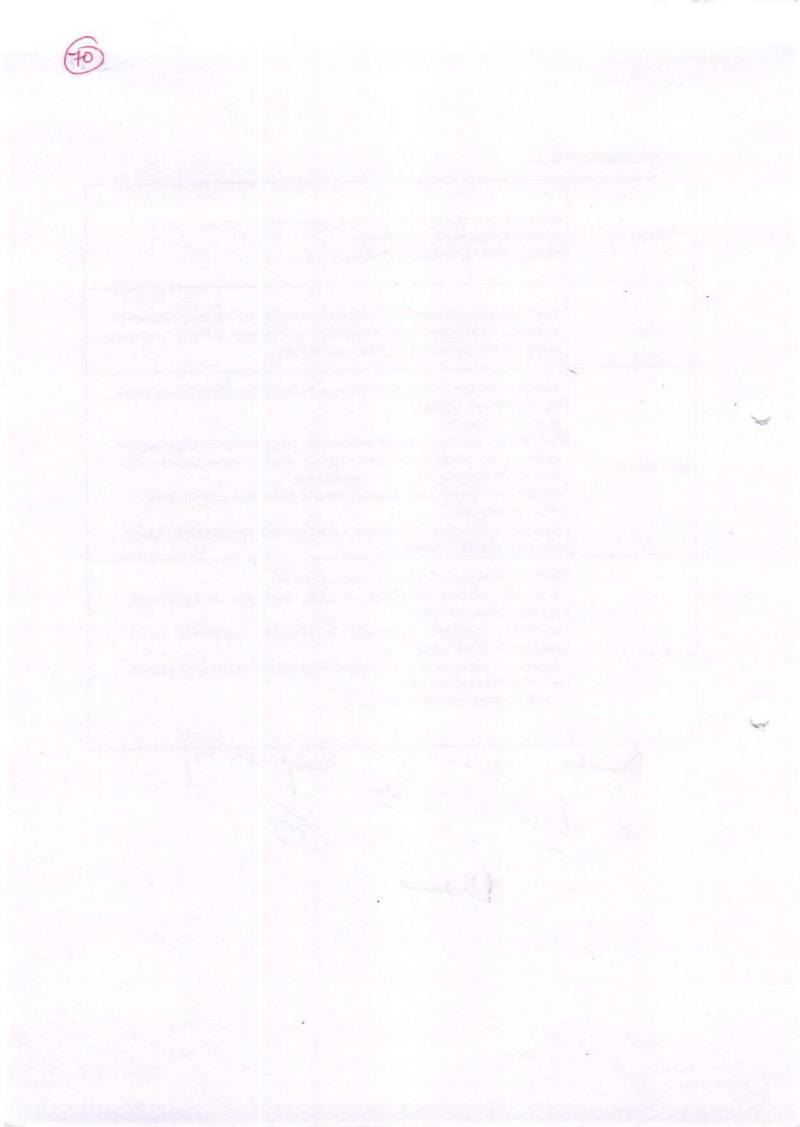
| MODULE - I | Introduction to Management: concept, characteristics and significance, Process/Functions of Management.<br>Management: as Science, Art and profession. |
|---|---|
| MODULE - II | Approaches to Management: Classical and Neo classical approach, Behavioral approach, Management science approach, Systems approach and Contingency approach; Management thought in ancient India. |
| MODULE - III | Planning: concept, process & importance, Types of Plans: Policy, Programme, Strategy, Vision, Mission,<br>Goals, and Objectives.<br>Organizing: meaning, principles and benefits of organizations; Organizational structure: Functional, Line vs. Staff, matrix, Formal vs. Informal; Organizational structure for large scale business organization.<br>Delegation: meaning, advantages, barriers to delegation, guidelines for effective delegation.<br>Decentralization and Centralization: advantages and disadvantages, factors influencing decentralization. |
| MODULE - IV | Staffing: meaning, importance & scope of staffing.<br>Directing: concept; Motivation: concept, objectives & significance, Approaches to motivation.<br>Leadership: concept, significance & functions, Leadership styles, approaches to leadership.<br>Controlling: meaning and characteristics of control, process of control, prerequisites of an effective<br>control system; controlling techniques. |

# Food Security

| 1. | What is food security, Combination | Food availability, access, utilization concept, meaning, scope and importance. |
|---|---|---|
| 2. | Food production in india | Basic aim of production. How can increase food production, green revolution. |
| 3. | Public Distribution system (P.D.S) | APL Card, Antodya Card, BPL Card, Extra Food Stock. |
| 4. | Food security scheme in india | |
| 5. | Comprehensive summary of food security in india log term measures and U.N. Report | |
| 6. | Challenges of food security | Climate change, lack of access to remote areas, overpopulation, poverty, lack of education, couruption. |
| 7. | Recent Government initiatives | a. Rashtriya Krishi Vikas Yojna (RKVY) 2007<br>b. National Food Security Act (NFSA) 2013<br>c. Food and Agriculture Organization<br>d. World Food Programme<br>e. International Fund for Agriculture Development (IFAD) |

## Syllabus Description ofValue Added Courses

Remark: Successful completion of the following courses earns the student a certification issued by college.

### Waste Management

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam |
| --- | --- | --- | --- | --- | --- |
| | | External | Internal | Total | |
| Waste Management | 30 hours | 60 | 40 | 100 | 3 Hours |

- **Objective:**

Every human activity ends up in the generation of unwanted waste product. This course throws light on the current scenario of solid waste generation and problem in its handling and management. It also deals with the different governmental policies that explain proper transportation, handling and disposal of solid waste to minimize its effect on environment and promote the concept of zero waste living.

- **Programme outcome:** After finishing the course the students would be able to:
  1. Understand clearly and comprehend information related to strategic planning in waste management.
  2. Identify the methods for Recycling, Recovery and Reuse of the materials considered to be waste.
  3. Apply for diploma and degree courses in solid waste management which would open immense job opportunities as waste manager, supervisor, operators, technicians, service manager, superintendents, field service worker, inspectors etc.
- **Department:** Botany
- **Eligibility:**
  - All undergraduate students can enroll for the course.
- **Structure of the Course:**
  - Paper I: Theory Paper
  - Paper II: Practical
- **Scheme of Examination:**
  - There will be a written examination carrying 60 marks and practical examination will carry 40 marks.

### Syllabus

**Theory (30 Lectures)**
**Unit 1: Introduction to Environment**

Ecosystem:-Meaning, Components, Types, Structure, Functions.

Levels of organization- Food chain and Trophic levels, Energy Flow and Biogeochemical Cycles

**Unit 2: Solid Waste**

Sources and Types of Municipal Solid Waste, Biomedical and Chemical Waste, Nuclear and e-Waste

## Unit 3: Effect of solid waste disposal on environment

Impact of solid waste on environment, human and plant health; effect of solid waste and industrial effluent discharge on water quality and aquatic life; mining waste and land degradation; effect of land fill leachate on soil characteristics and ground water pollution.

## Unit 4:Solid waste Management

Different techniques used in collection, storage, transportation and disposal of solid waste (municipal, hazardous and biomedical waste); landfill (traditional and sanitary landfill design); thermal treatment (pyrolysis and incineration) of waste material; drawbacks in waste management techniques.

## Unit 5:Industrial waste management

Types of industrial waste: hazardous and non-hazardous; effect of industrial waste on air, water and soil; industrial waste management and its importance; stack emission control and emission monitoring; effluent treatment plant and sewage treatment plant.

## Unit 6: Resource Recovery

4R-reduce, reuse, recycle and recover; biological processing -composting, vermi-composting, anaerobic digestion, aerobic treatment;; mechanical biological treatment; green techniques for waste treatment.

## Unit 7: Policies for solid waste management

Municipal Solid Wastes (Management and Handling) Rules 2000; Hazardous Wastes Management and Handling Rules 1989; Bio-Medical Waste (Management and Handling) Rules 1998; Ecofriendly or green products.
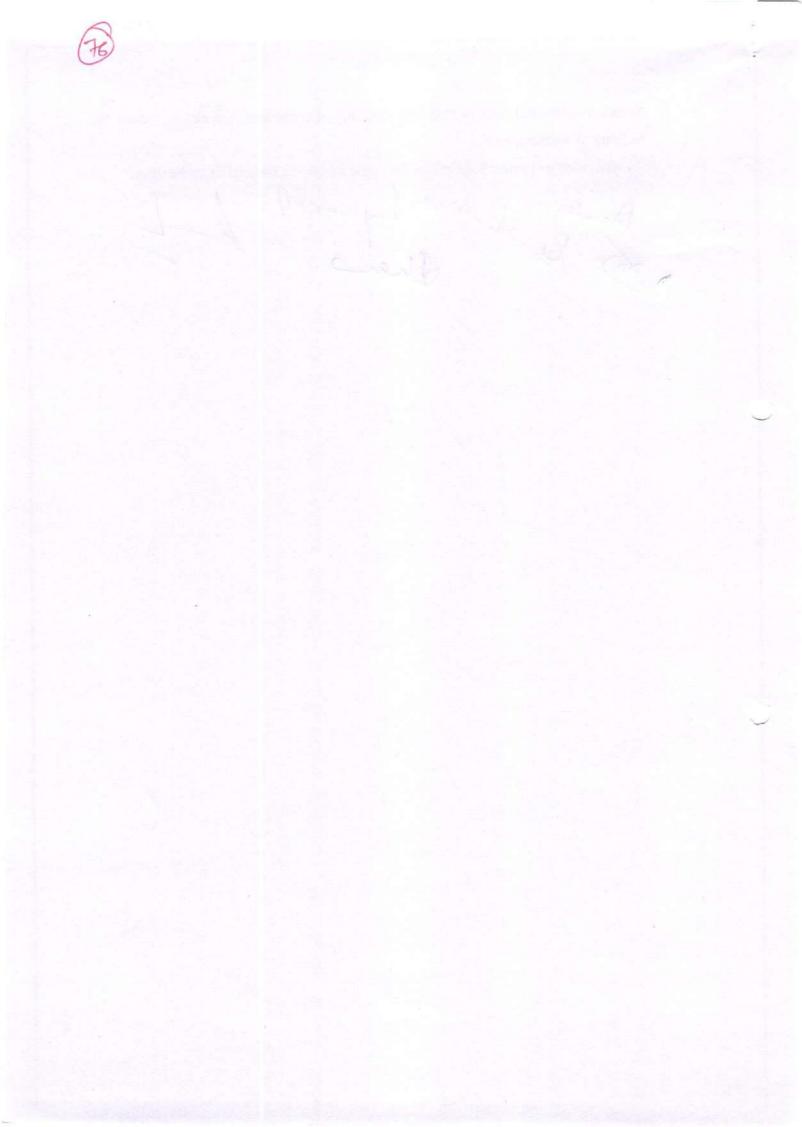
## Practicals: 15 lectures
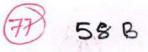
1. Determination of pH of MSW
2. Determination of Total dissolved solids in water / effluent sample.
3. Lab scale study on composting and vermi-composting
4. Lab scale study of aerobic and anaerobic digesting of municipal and industrial solid waste

5. A visit to industrial area to study the handling of hazardous material and study the working of incinerators

6. Preparation of Project Report based on case study of a hospital or an industry.

# Syllabus for Waste Management
## Six months Certificate course Waste Management

| Paper-1 Code- WMS-101 | Unit-1 | • Introduction to Environmental Science, Definition, Types and Categories of Waste, <br> • Collection, Sorting and Transfer of Waste, <br> • Techniques in Solid and Liquid Waste Management |
|---|---|---|
| | Unit-2 | • Waste Disposal and Scientific Landfill Cultivation <br> • Introduction to Hazardous Waste (Nuclear Waste and e-Waste) <br> • Management and Disposal of Hazardous Waste <br> • Impact of Bio-medical Waste on Environment and Human Health |
| Paper-2 Code- WMS-102 | Unit-1 | • Treatment and Disposal of Bio-medical waste <br> • Infection Control, Prevention and Patient Safety <br> • Waste Management in Food Industry <br> • Reuse and Recycling Techniques |
| | Unit- 2 | • Environmental Policies, Act and Legislation <br> • Entrepreneurship in Waste Management <br> • Human Resource and Financial Management |
| Paper-3 Code- WMS-103 | Practical | • Industry Based Case Studies |

## Energy Security

| 1. | Introduction | Meaning, definition, scope and importance in present era. |
|----|--------------|-----------------------------------------------------------|
| 2. | India's Energy Resources | Classification of energy resources primary and secondary enerfy, commercial and non-commercial energy, renewable and non renewable energy. |
| 3. | Non renewable energy | Oil, natural gas, nuclear energy and coal known as fossil fuels. |
| 4. | Renewable energy | Wind, sun, Geothermal, tide, water, bio-mass, waves, ocean energy. |
| 5. | Solar Energy | Solar Thermal energy, solar water heating solar space heating, solar chimney, solar India |
| 6. | Energy Importance | Human need, Ecomonic development industrial development need for reliable and affordable energy. |
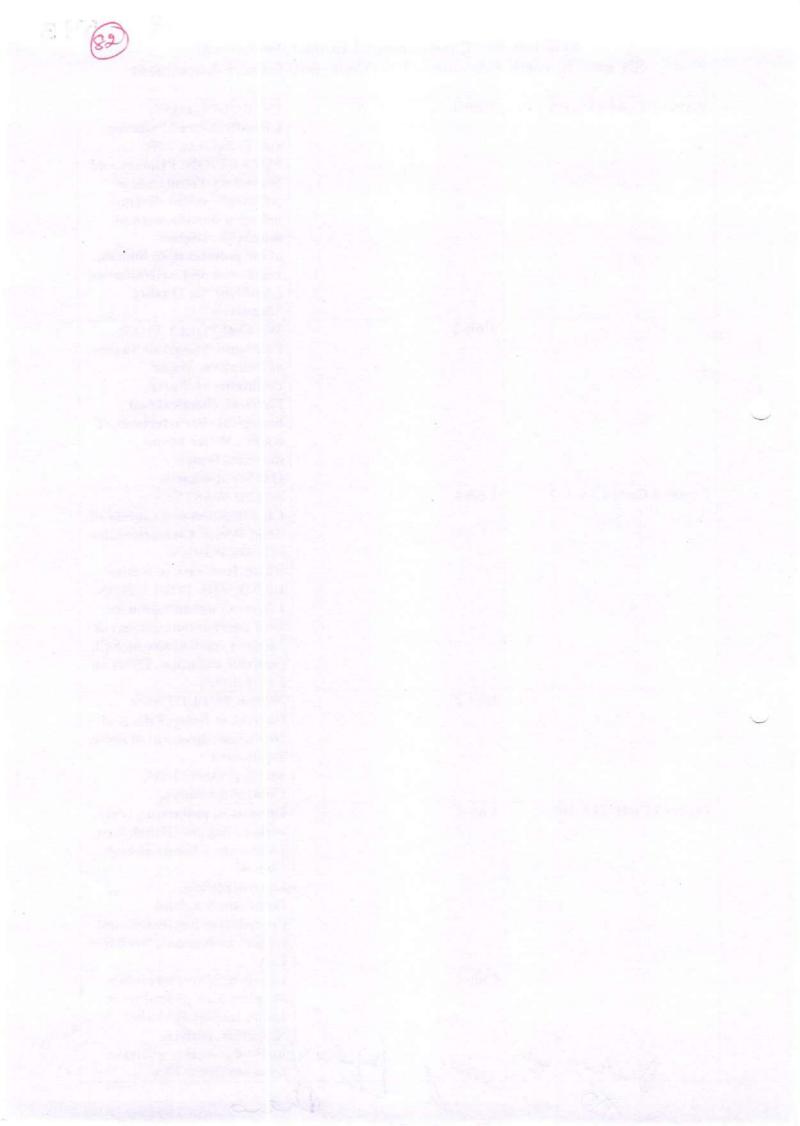
# Syllabus For Environmental Impact Assessment
## Six months certificate course Environmental Impact Assessment

| Paper- 1 Code-EIA-101 | Unit-1 | INTRODUCTION: Classification of Pollution and Pollutants, AIR POLLUTION: Primary and Secondary Pollutants, air pollutants-sulfur dioxide-nitrogen dioxide, carbon monoxide, Impact of air pollutants on human, vegetation and environment, , Ambient Air Quality Standards |
|---|---|---|
| | Unit-2 | WATER POLLUTION: Point and Non-point Source of Pollution, Major Pollutants of Water, Physical, chemical and biological characteristics of water , Water borne diseases, Water Quality standards |
| Paper- 2 Code-EIA-102 | Unit-1 | SOLID WASTE: Classification and sources of Solid Waste, Characteristics of Solid Waste, e waste, Radioactive wastes LAND/SOIL POLLUTION: Effects of urbanization on land degradation, Impact of Modern Agriculture on Soil, pesticide pollution, Effect on Environment |
| | Unit-2 | NOISE POLLUTION: Sources of Noise, Effects of Noise, measurement of noise, Equivalent sound pressure level, Control measures, |
| Paper- 3 Code-EIA-103 | Unit-1 | Impacts of pollutants, types, scale of impact-Global, local pollutants. Climate change, Ozone layer depletion, Deforestation, land degradation Environmental impact assessment, Need for EIA, |
| | Unit-2 | EIA Procedure-Screening, Scoping, EIA procedure in India, Impact analysis-checklists, matrix methods, overlay analysis, Case studies of EIA |
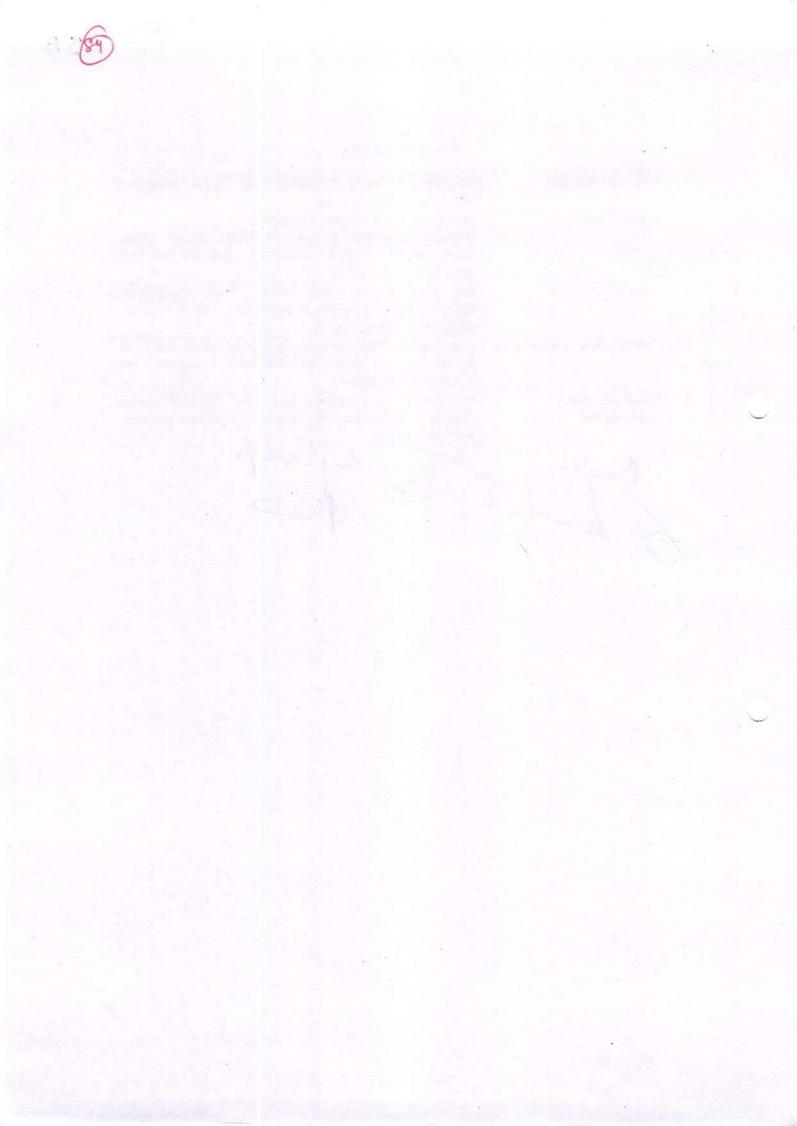
## Resource Security

| | | |
|---|---|---|
| 1. | Aim and Concept | Resources, meaning, definition, scope and its utility and importance in present era. |
| 2. | Types of resources | Biotic and Abiotic Natural resources<br>Biotic (Living and Organic Material), Abiotic (Non-living and Non Organic Material). How are resources spread across the globe. |
| 3. | Natural Resources | Oil, Natural Gas, Coal, Metal, Stone, Phosphorus, Bouxite, Earth, Sunlight, Atmosphere, Water land and Minerals with vegetation. |
| 4. | Conservation of Resources. | Importance of conservation, classification of resources, on the basis of origin, exhaustibility. Ownership and status of development. |
| 5. | Resources and Development | Importance of resources and role in development, development of resources, land utilization and planning. Soil conseration. |

# Fire Security
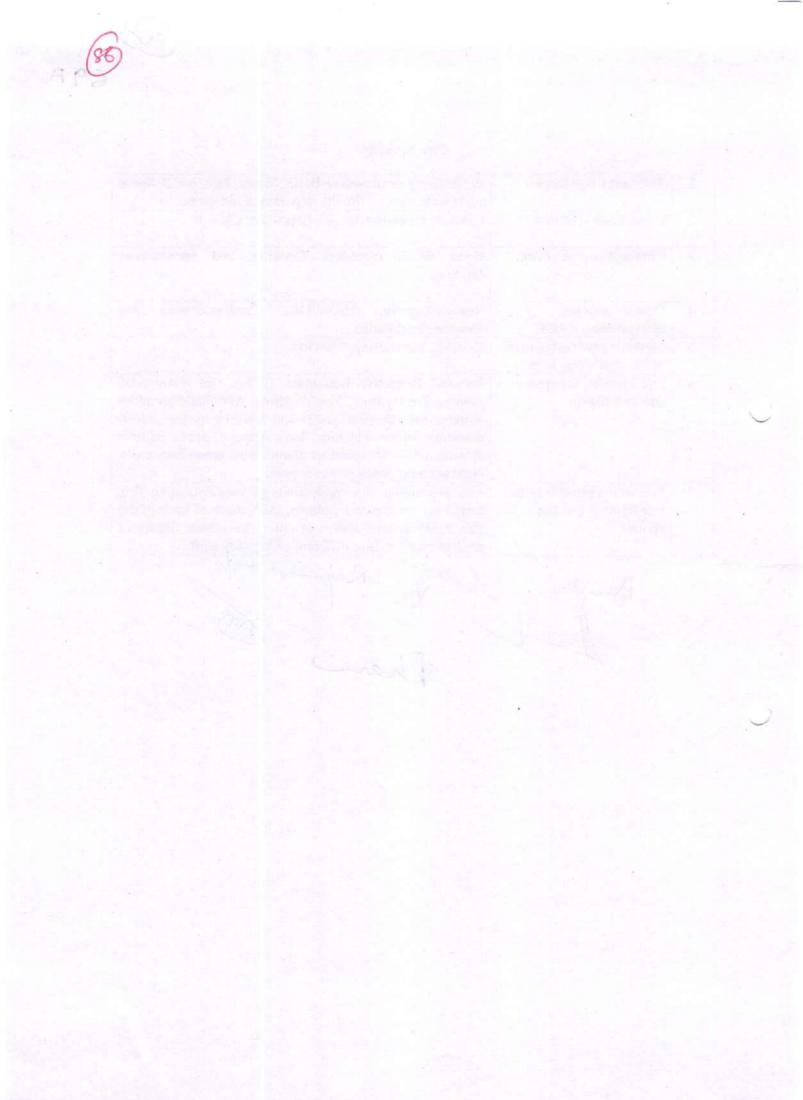
| | | |
|---|---|---|
| 1. | Relevant Knowledge | Basic elements of Nature-Barth, Water, Fire, Air & Space what we means by fire, its importance and scope. |
| 2. | Classification of Fire | Class-A, Class-B, Class-C, Class-D & Class-K |
| 3. | Common course of fire | Open flame, Electrical, Cooking, and Spontaneous Ignition. |
| 4. | Dealing with fire emergencies 'RACE' | Rescue/Remove, Alarm/Alert, Confine/contain and Evacuate/Extinguish |
| 5. | Methods and Techniques of Extinguishing Fire | Cooling, Smothering, Starving |
| 6. | Fire Fighting Equipment and installation | Personal Protective Equipment (PPE), Fire water tank, pumps, fire Hydrots, Yard Hydrots, Automatic sprinkler system, fire detection panel and warning system, Heart detectors smoke detectors, flame detector, public address system, automatic sprinkler alarm panel, emergency exits, signages emergency power supply. |
| 7. | Prevantion procedure and role of people in fire control | Fire prevention, fire protection, person discerning fire, telephone oerator, fire fighting team, dutie of leadr of the fire fighting team, duties of chief fire officer, duties of engineering duties of different offices and staff. |

# Disaster Management

| 1. | Introduction of Disaster | Meaning, definition, scope and its importance. |
|---|---|---|
| 2. | Types of Disaster | 1. Natural Disaster- Flood, Cyclone, Earthquakes, Landslides, Draught. <br> 2. Man Made Disaster- Fire, Industrial Pollution, Nuclear Disaster, Biological Disaster, Accodents (Air, Sea, Rail & Road), Building and Bridge Failures, War, Terrorism. <br> 3. Causes effect and practical examples for all disasters. |
| 3. | Risk and Vulerability Analysis | 1. Risk: Its concept and analysis <br> 2. Risk Reduction <br> 3. Vulnerability: Its concept and analysis <br> 4. Its strategic development. |
| 4. | Preparedness | Concept and nature, Plan, Early Warning, Safety measures of Disaster, Role of information, education communication and training, Role of Govt. Internation and N.G.O. bodies. |
| 5. | Rehabilitation, Reconstruction and recovery | Its means and development, damage assessment, post disaster effects and remedial measures, house construction sanitation and hygiene, education awareness and role of educational institute. |

# Internal Security

| 1. | Unit-I | Meaning of security, Its importance of a Nation. | Internal security, meaning, concept, challenges and importance special reference of India |
|----|--------|--------|--------|
| 2. | Unit-II | Terrorism | Classification, types of terror, causes the rises of terrorism, India's preparedness. |
| 3. | Unit-III | Naxatism | Development of Naxatism in India. Its Aim, Objectives and working system, Main Causes of Naxatism and its obstacles. How can stop this challenges. |
| 4. | Unit-IV | Insurgency in North East States | Causes of insurgency. In North East Area insurgent groups relation with other countries, seven sister position. |
| 5. | Unit-V | Security Forces and Institutions | Central Armed Police Force (CAPF), Central Para Military Forces (CPMF), Border Security Forces (BSF), Central Reserve Police Forces (CRPF), Sashtra Seema Bal (SSB), National Security Guard (NSG). |

# Entrepreneurship Courses
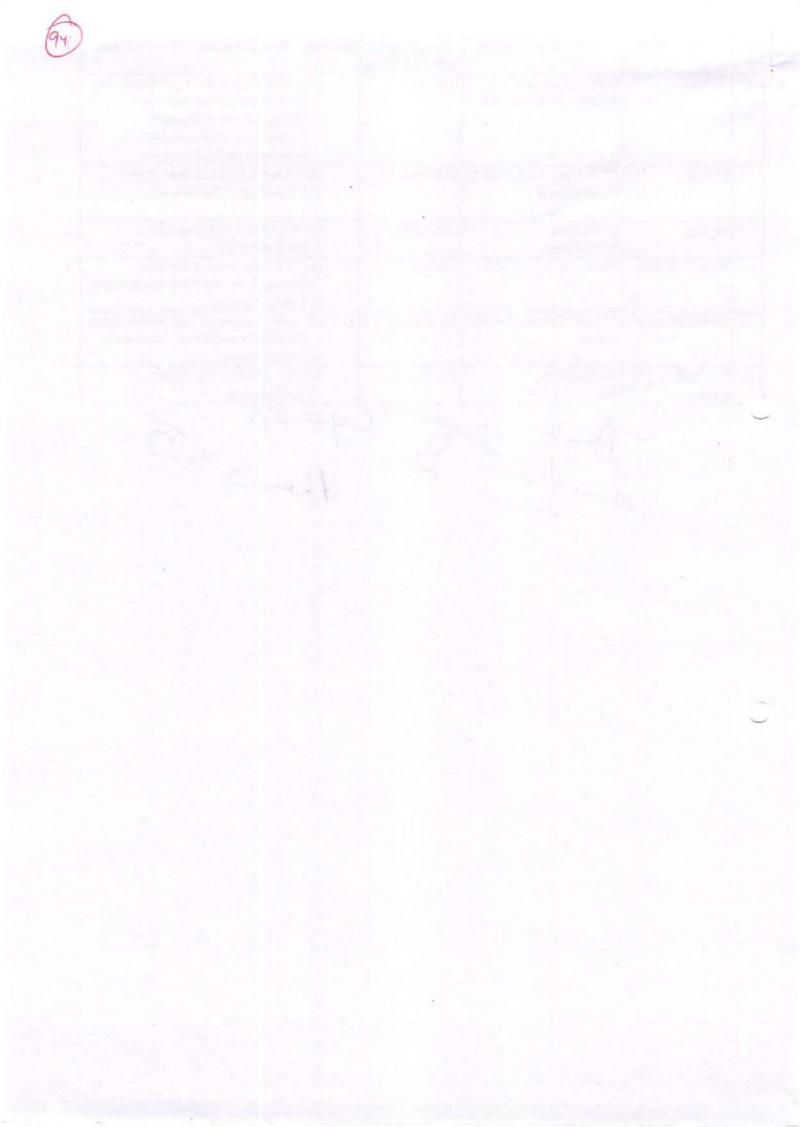
| Sr. No. | Department | Name of the Course | Certificate/ Dip./Adv. Dip. | Credits | Broad outline of the Syllabus |
|---|---|---|---|---|---|
| 1 | Home Science | Block Printing | Diploma | 60 | Introducion, Types and Block printing on different materials, Skills to Sell |
| 2 | Home Science | Embroidry | Diploma | 60 | Introducion, Types, Fabrics, Skills to Sell |
| 3 | Home Science | Beauty & Wellness | Diploma | 60 | Anatomy, Physiology, Yoga, dietetics,types of cosmetics, recognition of abnormalities and faults of figure, skin and hair and their correction |
| 4 | Home Science | Handicraft | Diploma | 60 | Introducion, Types, Understanding Materials, Skills to Sell |
| 5 | Home Science | Bakery, Confectionery & Cookery | Diploma | 60 | Nutrition, Computer Awareness, Hygiene and Sanitation, Commodities and Costing |
| 6 | Home Science | Food & Beverage Production | Diploma | 60 | Food Production Module, Food And Beverage, Hotel Communication Cum Soft Skills Module, Hygiene And Sanitation, Hotel Facility Planning, Front Office, Engineering & Maintenance, Nutrition And Food Sciences, Personality Development |
| 7 | Home Science | Fashion Technology & Apparel Designing | Advanced Diploma | 120 | World of Design, C.A.D. and I.P.S., History of Indian Fashion, Fashion Style and Illustration, Vintage Costume, Business Management and Entrepreneurship, Pattern and Markee Making on Computer, Apparel Manufacturing Technology |
| 8 | Home Science | Jewellery Designing | Diploma | 60 | Drawing and Rendering, Cost Based Designing, Grading and Sorting, Store Layout and Design |
| 9 | Home Science | Cutting, Tailoring & Surface Ornamentation | Diploma | 60 | Sewing, Garment Construction |
| 10 | Home Science | Fashion Designing | Advanced Diploma | 120 | World of Design, C.A.D. and I.P.S., History of Indian Fashion, Fashion Style and Illustration, Vintage Costume, Business Management and Entrepreneurship, Pattern and Markee Making on Computer, Apparel Manufacturing Technology |

| Sr. No. | Department | Name of the Course | Certificate/ Dip./Adv. Dip. | Credits | Broad outline of the Syllabus |
|---|---|---|---|---|---|
| 11 | Home Science | Dairy Products & Processing | Diploma | 60 | Basics of dairy (liquid food) food processing and preservation technologies |
| 12 | Home Science | House Keeping and Management | Diploma | 60 | Food and Beverages, Front Office, Culinary Art, Management Skills, House Keeping |
| 13 | Home Science | Vastu Shastra & Interior Designing | Diploma | 60 | Origin And History, Principles Of Vastu-Shashtra, Introduction To Directions, Residential Vastu, Commercial Vastu, Interior Designing |
| 14 | Commerce | Entrepreneurship Development | Diploma | 60 | Introduction, Training and Case Studies Practical Experience Developing a Business Plan |
| 15 | Commerce | Women Entrepreneurship | Diploma | 60 | Introduction, Training and Case Studies, Different business plans |
| 16 | Biology | Soil Management & Vermi-Composing | Certificate | 30 | Soil Research methodology and Vermi Composing |
| 17 | Biology | Landscaping | Certificate | 30 | Introduction, Need and Study |
| 18 | Biology | Rain Water Harvesting | Certificate | 30 | Managing India's water future: Past, Present and Future, Water auditing and water efficient fixtures, Technologies of rainwater harvesting and water conservation, Harvesting city's water endowment through water sensitive designs (including waterbodies), Policy framework for rainwater harvesting, water conservation and waterbodies |
| 19 | Biology | Ornamental Fish Culture | Certificate | 30 | Ornamental Fish Production and Management, Types freshwater ornamental fishes |
| 20 | Biology | Mushroom Cultivation | Certificate | 30 | Introduction, Mushroom culture, Spawn production and spawning, Making and casing beds, Growing conditions for mushrooms, Pests, diseases and growing mushrooms outside, Harvesting, storing and using mushrooms, Marketing of mushrooms and special assignment |
| 21 | Biology | Bio-Farming | Certificate | 30 | How To Farm- Thorough, Simpl, Step-by-Step Bio-Farming, utilizing ancient tried-and-true Farming Methods |

| Sr. No. | Department | Name of the Course | Certificate/ Dip./Adv. Dip. | Credits | Broad outline of the Syllabus |
|---|---|---|---|---|---|
| 22 | Biology | Horticulture and Nursery Management | Diploma | 60 | Horticulture, Fruit and Vegetable Production, Post Harvest Management of Fruits & Vegetables, Floriculture, Ornamental Horticulture |
| 23 | Biology | Landscape Gardening & Management | Diploma | 60 | Introduction, Designs, Planning, Developing, Themes, etc. |
| 24 | Biology | Green House Technology | Certificate | 30 | Introduction, Need, Pest Management |
| 25 | Music/Theatre | Theatre & Stage Craft | Diploma | 60 | Literture, Stage, Direction, Production and Participation and other Aspects |
| 26 | Music/Theatre | Western Contemporary Dance | Diploma | 60 | Classical Dance, Taal, Ballet, Floor Work, Dance Forms, Costumes and makeup. |
| 27 | Physical Education | Panchkarma | Certificate | 30 | Panchkarma, Operating Equipments |
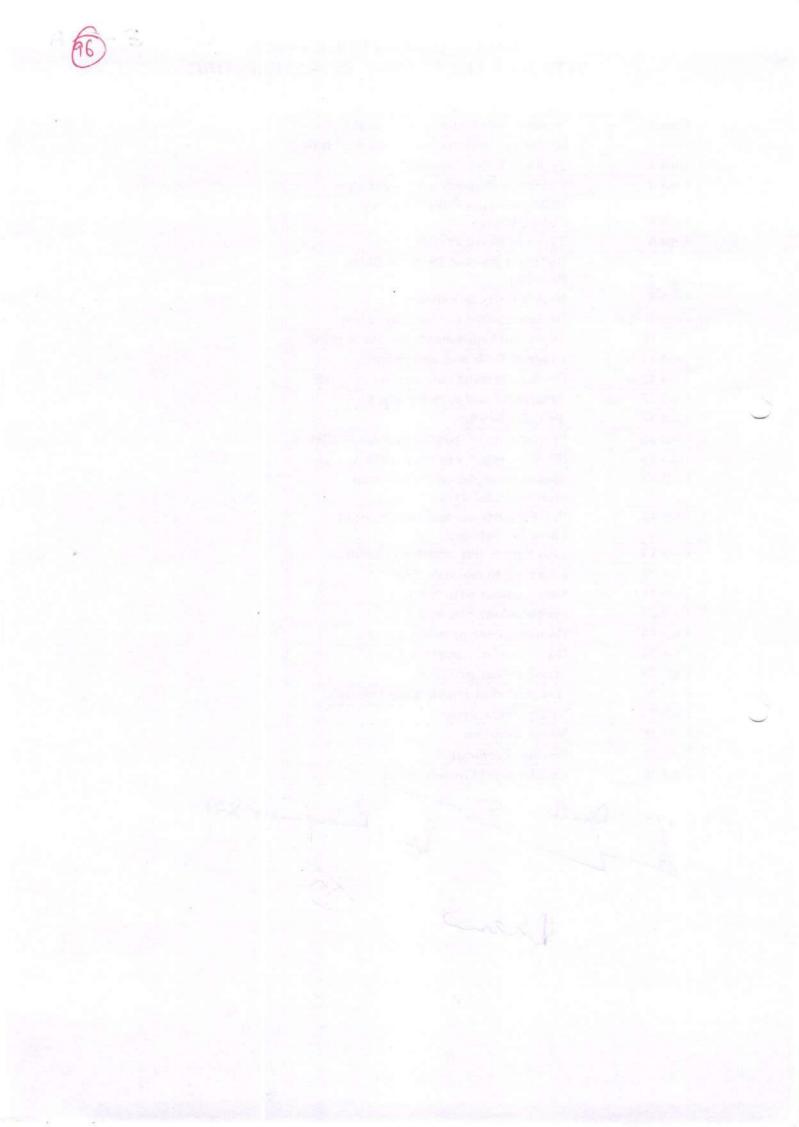
# VALUE ADDED PROGRAMME
## TITILE OF THE COURSE- BLOCK PRINTING

| Unit 1 | Fabric - Synthetic and Natural Fabrics |
|---|---|
| Unit 2 | Historical Background of Block Printing |
| Unit 3 | Types of Block Printing |
| Unit 4 | Colours – Primary and Secondary |
| Unit 5 | Different types Colour schemes, ColourWheel |
| Unit 6 | Types of Block Printing |
| Unit 7 | Different types of Dyes for Block Printing |
| Unit 8 | Dyes affinity to Fabrics |
| Unit 9 | Design making for block printing |
| Unit 10 | Tools and Equipments for block printing |
| Unit 11 | Usage of tools and equipment |
| Unit 12 | Blocks – tracing and carving of block |
| Unit 13 | Treatment and care for blocks |
| Unit 14 | Printing Surface |
| Unit 15 | Preparation of pastes, dyes and Colours |
| Unit 16 | Binder – types and preparation |
| Unit 17 | Making samples using different materials and dyes |
| Unit 18 | Pre-Preparation and treatment of fabricfor printing |
| Unit 19 | Learning to put registration marks |
| Unit 20 | Learning to make corners |
| Unit 21 | Single colour printing 1 |
| Unit 22 | Single colour printing 2 |
| Unit 23 | Double colour printing 1 |
| Unit 24 | Double colour printing 2 |
| Unit 25 | Multi colour printing |
| Unit 26 | Treatment of Fabric after Printing |
| Unit 27 | Safety Precautions |
| Unit 28 | Value Addition |
| Unit 29 | Display Techniques |
| Unit 30 | Employment Opportunities |
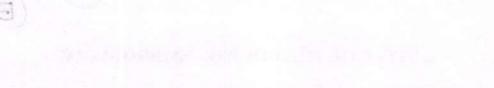
## 2. TITLE OF THE COURSE- EMBROIDERY

| Unit -1 | Embroidery – importance, types – Hand and Machine Embroidery |
|---------|---------------------------------------------------------------|
| Unit -2 | Tools and Equipment for Hand embroidery |
| Unit-3 | Threads for Embroidery |
| Unit -4 | Needles for Embroidery |
| Unit -5 | Colours – Primary and secondary, colour wheel, colour schemes |
| Unit -6 | Designs – floral, geometrical, human, animal and other designs |
| Unit -7 | Selection and Preparation of fabric for embroidery |
| Unit -8 | Different methods of transferring a design on fabric |
| Unit -9 | Precautions while doing embroidery |
| Unit -10 | Making Samples using Basic embroidery stitches – stem stitch, satin stitch, chainstitch. Herringbone stitch, lazy daisy, buttonhole stitch etc. |
| Unit -11 | Making samples using Basic Embroidery stitches – stem stitch, satin stitch, chainstitch. Herringbone stitch, lazy daisy, buttonhole stitch etc. |
| Unit – 12 | Making Samples using Basic Emroidery stitches – stem stitch, satin stitch, chainstitch. Herringbone stitch, lazy daisy, buttonhole stitch etc. |
| Unit -13 | Making Samples using Decorative Embroidery stitches – Bullion stitch, French knot,Spider stitch, Romanian stitch, Feather stitch etc. |
| Unit -14 | Making Samples using Decorative Embroidery stitches – Bullion stitch, French knot,Spider stitch, Romanian stitch, Feather stitch etc. |
| Unit – 15 | Making Samples using Decorative Embroidery stitches – Bullion stitch, French knot,Spider stitch, Romanian stitch, Feather stitch etc. |
| Unit -16 | Designing using basic and decorative stitches |
| Unit -17 | Preparing one household article using at least 5 basic embroidery stitches |
| Unit -18 | Preparing one household article using at least 5 Decorative embroidery stitches |
| Unit 19 | Making Samples using Traditional embroideries of India 1 |
| Unit 20 | Making Samples using Traditional embroideries of India 2 |
| Unit 21 | Making Samples using Traditional embroideries of India 3 |
| Unit 22 | Making Samples using Traditional embroideries of India 4 |
| Unit 23 | Making Samples using Traditional embroideries of India 5 |
| Unit 24 | Preparing one household article using any one of traditional embroidery of India |
| Unit 25 | Care and storage of Embroidered article |
| Unit 26 | Employment Opportunities |

# NAME OF THE TITLE- FOOD AND NUTRITION

| UNIT | TOPIC |
|---|---|
| UNIT - 1 | Food and its function |
| | Concept of balanced diet, Food and Nutritional Requirements |
| Unit - 2 | Carbohydrate |
| | Protein |
| | Fats |
| Unit - 3 | Vitamin A |
| | Vitamin B-complex |
| | Vitamin C |
| | Vitamin D |
| | Vitamin E |
| | Vitamin K |
| | Minerals – Sodium, Potassium |
| | Mineral – Calcium, Phosphorus |
| | Mineral – Iodine |
| | Mineral – Iron |
| | Water and Roughage |
| | Meal planning |
| | Meal planning for children |
| | Meal planning for adolescents |
| | Meal planning for Adults (Man and Woman) |
| | Meal planning for pregnant Woman |
| | Meal Planning for Lactating Mother |
| | Methods of cooking and its effects on nutrients |
| | Methods of enhancing nutritive value of food |
| | Food habits and misconceptions |
| | Nutrition related Government Policies and Programmes |

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam | Medium of Instruction |
|---|---|---|---|---|---|---|
| | | External | Internal | Total | | |
| Apparel Designing | 40 hours | 50 | 50 | 100 | 3 Hours | English and Hindi |

- **Objective:**

The objective of the course is to equip students with entrepreneurial skills which will help them to compete in the dynamic business world. The curriculum aims to establish foundation for basic concepts and techniques of designing.

- **Department:** Home Science
- **Eligibility:**
  - Students of all streams can enroll for the course.
- **Structure of the Course:**
  - Paper I: Theory Paper
  - Paper II: Practical
- **Scheme of Examination:**
  - There will be an Examination of 50 marks each. There will be a written examination carrying 50 marks and practical examination will carry 50 marks.

## Syllabus of Apparel Designing

**Theory:**

Introduction to Printing and its types

Embroidery and its types

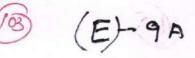Introduction to Tie & Dye, Types of Tie & Dye

**Practical:**

Printing: Block Printing, Stencil Printing, Roller Printing, Screen Printing, Spray Printing

Embroideries: Chain Stitch, Stem Stitch, Lazy Daisy Stitch, Satin Stitch, Kantha Stitch, French Knot

## 4. TITLE OF THE COURSE – CUTTING TAILORING AND SURFACE ORNAMENTATION

| T | TOPIC |
|---|---|
| Unit -1 | Sewing Machine – parts of sewing machine , Operation, Defects of sewing Machine and their adjustment, Care and maintenance of sewing machine, points to be remembered while sewing |
| Unit -2 | Introducing Terminology of garment making- Warp, weft, grain line, on-grain, off-grain, selvedge, bias (true and false), layout, marking and cutting, seams, fasteners. |
| Unit -3 | Taking body measurements – points to be taken care while taking body measurements |
| Unit - 4 | Proper usage of measuring tape, scale, French curve and other stitching and cutting tools. |
| Unit - 5 | Drafting – meaning and importance |
| Unit - 6 | Preparation of the fabric for cutting, fabric layout and its types |
| Unit -7 | Permanent Basic Seams - plain, run and fell, French, top seam, slot seam. Finishing neck using facing, piping. Stitching on curves and making corners. |
| Unit -8 | Learning Functional stitches by hand - basting, tacking, running stitch,hem stitch, slip stitch. Learning to attach fasteners - Hook and eye, Button and button hole, Push buttons, |
| Unit - 9 | Learning to prepare plain dart, french dart, contour dart, plain tuck, pintuck, gathers, pleats and inserting elastic. |
| Unit - 10 | Drafting, cutting and stitching of jhabla with bloomer |
| Unit - 11 | Preparation of child basic bodice block, sleeve block and collar of any one size between 2 to10 years. |
| Unit - 12 | Drafting, Cutting and Stitching of baby Frock (Gathered frock with puff sleeve). |
| Unit - 13 | Drafting, Cutting and Stitching of Night Suit (top with yoke andpayjama) |
| Unit -14 | Drafting, Cutting and Stitching of Child's Kurta |
| Unit -15 | Preparing basic block, sleeve block and skirt block as permeasurements for an adult |
| Unit -16 | Adaptation of bodice block for kurti or kameez as per measurements. Layout, Cutting and Stitching of Kurti or kameez. |
| Unit - 17 | Drafting, Cutting and Stitching of Salwar. |
| Unit -18 | Adaptation of basic block to night wears (with yoke). Layout andCutting as well as stitching the night wear. |
| Unit -19 | Adaptation of basic block to blouse. Layout and Cutting as well as stitching the blouse |
| Unit -20 | Drafting, Cutting and Stitching of any one Skirt (Pleated/ Flared/Gathered) or a Trousers/ Bermuda for a teen. |

Remark: Successful completion of the following courses earns the student a certification issued by college.

## Basics of Interior Decoration

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam | Medium of Instruction |
|---|---|---|---|---|---|---|
| Basics of Interior Decoration | 40 hours | **External** | **Internal** | **Total** | 3 Hours | English and Hindi |
| | | 50 | 50 | 100 | | |

- **Objective:**

The objective of the course is to equip students with entrepreneurial skills which will help them to compete the dynamic business world. The curriculum aims to establish foundation for basic concepts and techniques of Interior Decoration.

- **Department:** Home Science
- **Eligibility:**
  o Students of all streams can enrol for the course.
- **Structure of the Course:**
  o Paper I: Theory Paper
  o Paper II: Practical

Scheme of Examination:

  o There will be an Examination of 50 marks each. There will be a written examination carrying 50 marks and practical examination will carry 50 marks.

Syllabus Of Theory:Paper I

**Space planning for different income groups and for different rooms passage and stair cases keeping into account the following.**

- Orientation
- Activity
- Privacy
- Spaciousness
- Aesthetics
- Economy
- Light
- Ventilation
- Flexibility

## Syllabus for Practical: Paper-II

- Layout of furniture and furnishing costs for different rooms/areas.
- Alpana and rangoli designs.
- Candle making, collage, paper mashie, poster making, fabic painting, mosaic scenary.
- Table setting and napin folding.
- Devlopment & design, color wheel planning color scheme for different room.
- Ornamental plants, potted plants and pott painting, hand bag making.
- Flower arrangement for different rooms and occassions.
- Greeting cards by quilling or crafting.
- Use of waste materials for decorative articles.
- Different type of pouches like potli, purses.

## ~~Value Added~~ Course on Vermicomposting

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam | Medium of Instruction |
|---|---|---|---|---|---|---|
| | | **External** | **Internal** | **Total** | | |
| Vermicomposting | 30 hours | 50 | 50 | 100 | 3 Hours | English and Hindi |

- **Objective:** To enable students to develop understanding of vermicomposting
- **Department:** Zoology
- **Eligibility:**
  - Students of science stream can enrol for the course.
- **Structure of the Course:**
  - Paper I: Theory Paper
  - Paper II: Practical
- **Scheme of Examination:**
  - There will be an Examination of 50 marks each. There will be a written examination carrying 50 marks and internal assessment will carry 50 marks.

### Syllabus

**Unit-1**                                                                 (04 Hrs)

1.1. Definition and concept of vermiculture.
1.2. Soil: major types (red soil, black soil, alluvial soil).
1.3. Influence of soil organisms in vermitechnology- Litter degradation and decomposition.
1.4. Problems in vermiculture and remedial solutions.

**Unit-2**                                                                 (04 Hrs)

2.1. Vermicomposting : Introduction and Scope
2.2. Endemic and exotic species of earthworms.
2.3. Ecological classification of earthworms- epigeic, anecic and endogeic forms.
2.4. Life history of Earthworms (Earthworm Species *Eisenia foetida*)

2.5. Physical, chemical and biological changes caused by earthworms in soil .

**Unit-3**                                                                 (04Hrs)
3.1. Vermicomposting materials
3.2. Vermicomposting methods Small scale and large scale
3.3. Factors affecting vermicomposting - pH, moisture, temperature
3.4. Establishment of Vermicomposting and Vermiwash unit

**Unit-4**
4.1. Precautions while Vermicomposting                          (04 Hrs)

4.2. Physico- chemical analysis of vermicompost
4.3.Physical Parameters of vermicompost
4.4.Nutrient content of vermicompost
4.5. Pests and diseases of Earthworms

## Unit-5

5.1.Harvesting of vermicompost (04 Hrs)
5.2.Storing, packaging and marketing- cost benefit analysis.
5.3. Quality, properties and advantages over chemical fertilizers.
5.4. Advantages of vermiwash.

## Paper II- Practical

1. Key to identify different types of earthworms (10 Hrs)
2. Field trip- Collection of native earthworms & their identification
3. Study of Sytematic position, habits, habitat & External characters of Eisenia fetida
4. Study of Life stages & development of Eisenia fetida
5. Study of equipments and devices used in Vermiculture, Vermiwash & Vermicompost
6. Establishment of vermicomposting unit Pit method
7. Establishment of vermicomposting unit Bed method
8. Establishment of vermiwash unit
9. Maintenance of vermicompost units & climatic conditions.
10. Harvesting and separation of vermicompost
11. Packaging and storage of Vermicompost

# Syllabus For Mushroom Cultivation

| | |
|---|---|
| **PAPER-1 THEORY: -** Introduction to Mushroom | • History, classification based on occurrence, morphology, status, importance and scope of Mushroom in India <br> • Major cultivatable Mushroom species in India and their climatic requirements. <br> • Nutritional and Medicinal properties of different mushrooms species. <br> • Edible Mushroom species and diagnostic features –morphological and microscopic identification <br> • Life cycle of mushrooms <br> • Nutrient profile of mushrooms |
| **PAPER -2 THEORY: -** Cultivation Technology of Agaricus bisporus | • Cultivation Technology of White button mushroom - Agaricus bisporus. <br> • Farm design and fabrication of low cost Mushroom shed for seasonal cultivation. <br> • Farm design and fabrication of AC unit for off season cultivation in controlled conditions. <br> • Long Method of composting <br> • Short Method of composting <br> • Mushrooms spawn production technology. <br><br> (A)Pure Culture (B) Mother spawn (C) Master spawn (D) Commercial spawn (E) Different Strains. <br> • Spawning methods and after care of Mushroom house. <br> • Casing process and preparation, sterilization of casing mixture <br> • Management of environmental parameters in Mushroom house for different species <br> • Insect-pests, diseases and disorders of white button Mushroom and their management <br> • Post harvest technology, grading, packing & marketing of Mushroom |
| **PAPER-3 THEORY:-** Cultivation Technology of some other important Mushroom | • Cultivation Technology of Oyster mushroom - Pleurotus spp. <br> • (A)Compost (B) Spawning process <br> • Cultivation Technology of Milky mushroom (Calocybe indica) <br> • Cultivation Technology of Cordyceps mushroom <br> • Cultivation technology of Paddy straw mushroom - Volvariella spp. <br> • Cultivation technology of Specialty mushrooms - Shiitake (Lentinula edodes). |
| **PAPER -4:-** Entrepreneurship development in Mushroom Cultivation | • Value addition, processing and preservation technology of different Mushroom species <br> • Mushroom cultivation as a component of Integrated Farming System for sustainability. <br> • Use of spent mushroom compost in agriculture. <br> • Involvement of woman self help group (SHGs) in Mushroom cultivation and |

| | |
|---|---|
| | • their economic and Social empowerment |
| | • Schemes of different government departments including horticulture department for Mushroom cultivation. |
| | • Preparation of project report and economics for cultivation of different mushroom species |
| | • Success stories of Progressive Mushroom Grower |

| Sr. No. | Mushroom Cultivation (Practicals)-I |
|---|---|
| 1. | Fabrication of low cost and AC Mushroom house |
| 2. | Preparation of pure culture, master culture and commercial spawn. |
| 3. | Compost preparation of white button Mushroom ( Long and short methods) |
| 4. | Preparation and sterilization of casing mixture |
| 5. | Composting, spawning and casing in mushroom house |
| 6. | Harvesting, washing, grading and packing of Mushrooms. |

| Sr. No. | Mushroom Cultivation (Practicals)-II |
|---|---|
| 1. | Substrate preparation for Oyster, paddy straw and milky mushroom |
| 2. | Substrate preparation for Cordyceps mushroom. |
| 3. | Identification of various diseases, disorder and insect pest and their management |
| 4. | Post-harvest handling for value addition including dehydration and canning of mushrooms |
| 5. | Commercial Mushroom farm visit for practical exposure. |
| 6. | Visit to a mushroom spawn lab and spawn preparation by participants |

# Syllabus For Organic Farming/Bio Farming
## Six months certificate course Organic Farming/Bio Farming

| Paper-1 Code- COR-101 | Unit-1 | Organic Farming: Concepts and development of Organic Farming: Principles, Needs and approaches, Characteristics of an Organic Farm, Conventional farming and organic farming, Composting and Manuring |
|---|---|---|
| | Unit- 2 | Vermicomposting techniques, Biofertilizers and other practices to control diseases, Cultural and Mechanical practices of plant protection, Biopesticides and other practices to control diseases, Seed and Planting techniques in Organic Farming, |
| Paper-2 Code- COR-102 | Unit-1 | Livestock Management in Organic Farming, Discussion with an expert on Livestock management, Crop Rotation Practices in Organic Farming, Water Management in Organic farm, Organic Standards |
| | Unit-2 | Procedure of Inspection and Certification, Documentation for Organic Certification, Discussion with an expert on Certification of Organic Farm Quality Management and Organic Trademark, Concept of Marketing and Indian Organic Market, Economics of Organic Farming and Government Schemes to support Organic Farming |
| Paper-3 Code- COR-103 | Practical: - | Field visit, Soil preparation, Soil & Water conservation (Sampling of manure, Bulk density, pH of compost/manure,Water holding capacity) Crop Practices: Dhania, pudina, chana, pepper, palak, Techniques and Methods for Vermicompost formation, Livestock Management |

# Syllabus For Horticulture and Nursery management
## Six months Certificate course Horticulture and Nursery management

| Paper-1 Code – HOR-101 | A) TROPICAL AND SUB-TROPICAL VEGETABLE CROPS | Cropping systems, harvest, yield, post-harvest handling, economics and marketing of tropical and sub-tropical vegetable crops such as tomato, brinjal, chillies etc. |
|---|---|---|
| | B) TEMPERATE FRUIT CROPS | Classification of temperate fruits, management, harvesting, post-harvest handling and storage of apple, pear, peach etc. |
| | C) TROPICAL AND SUB-TROPICAL FRUITS | Classification of tropical and subtropical fruits, management, harvesting, post-harvest handling and storage of Mango, citrus, guava, etc. |
| Paper-2 Code – HOR-102 | D) WATER MANAGEMENT IN HORTICULTURAL CROPS | Methods of irrigation, viz., sprinkler and drip irrigation, their suitability, merits and limitations, economic use of irrigation water. Water management problem, irrigation management practices for different soils and crops. |
| | E) NURSERY MANAGEMENT PRACTICES | Need and potentialities for plant multiplication, sexual and asexual methods of propagation, advantages and disadvantages, greenhouses, glasshouses, poly-houses, nursery (tools and implements), seed and vegetative propagation, methods of cutting, layering, grafting, budding, rooting, factors influencing rooting of cuttings and layering, graft incompatibility. |
| Paper-3 Code – HORP-103 | Practical:- | Identification and description of tropical and sub-tropical vegetable crops and fruit crops, Browning reactions of Fruits and Vegetables, nursery practices and techniques, Working out economics for Fruits and vegetables, Visit to private orchard. |

# Value Added Courses
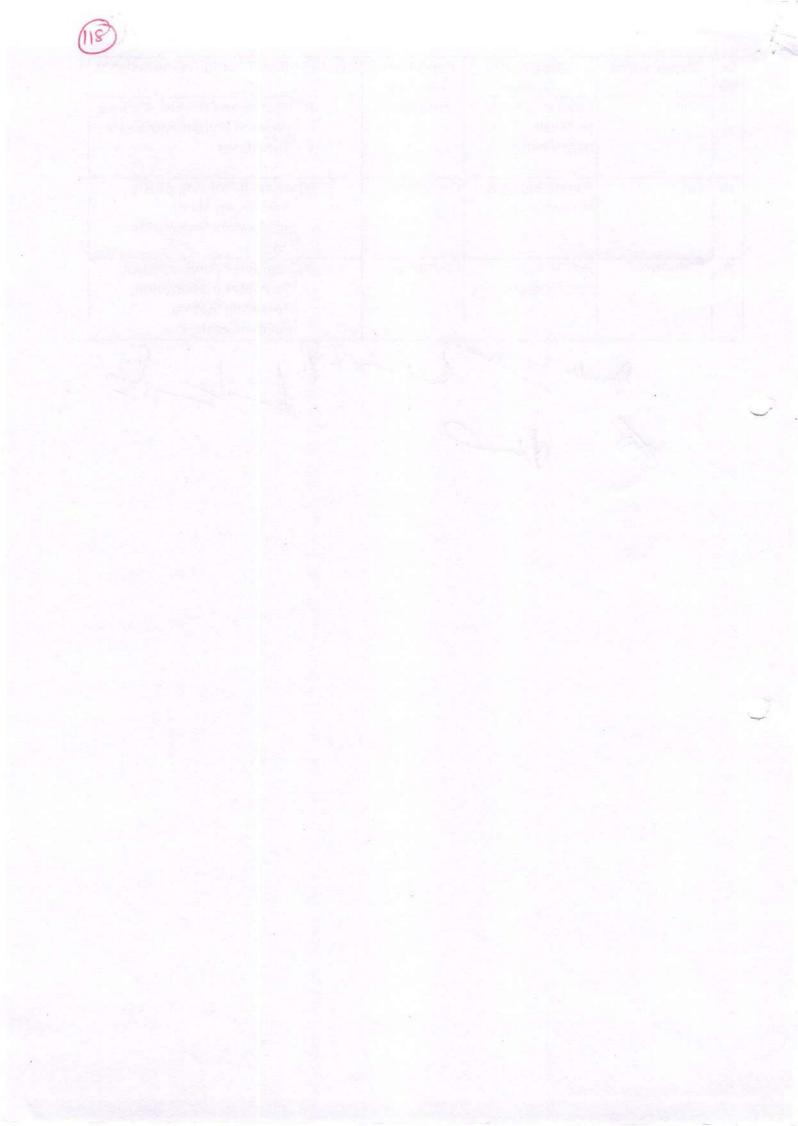
| Sr. No. | Department | Name of the Course | Certificate/ Dip./Adv. | Credits | Broad outline of the Syllabus |
|---|---|---|---|---|---|
| 1 | Commerce | Personal Grooming | Certificate | 30 | Personal Development, Etiquette Dressing, Communication Skills, Presentation Skills, Interview Preparation, Business Counselling, Personal Grooming, Makeup & Hair Styling |
| 2 | Commerce | Leadership and Teamwork | Certificate | 30 | Personal Development, Presentation Skills, Case Studies |
| 3 | Commerce | Professional Etiquattes | Certificate | 30 | Personal Development, Presentation Skills, Professional Etiquattes |
| 4 | Commerce | Group Discussions | Certificate | 30 | Personal Development, Presentation Skills, Group Discussions |
| 5 | Commerce | Interview Skills | Certificate | 30 | Personal Development, Presentation Skills, Mock Interviews |
| 6 | Commerce | Professional Grooming | Certificate | 30 | Personal Development, Communication Skills, Presentation Skills, Interview Preparation, Business Counselling, Professional Grooming |
| 7 | Commerce | Time Management | Certificate | 30 | Time Management for Personal & Professional Productivity, Task Management, Planning |
| 8 | Commerce | Stress Management | Certificate | 30 | Resources to Increase Resilience, Focus, Emotional Intelligence & Leadership |
| 9 | Languages | Public Speaking | Certificate | 30 | Understanding speech, Making Ideas, Delivering your ideas |
| 10 | Languages | Creative Writing | Certificate | 30 | Initiating Creative Writing, Literary Elements & Techniques, Creating Stories, Fiction Writing, Script Writing, Poetry Writing, Soft Skills Development |

| Sr. No. | Department | Name of the Course | Certificate/ Dip./Adv. | Credits | Broad outline of the Syllabus |
|---|---|---|---|---|---|
| 11 | Languages | Spoken English & Communication Skills | Certificate | 30 | Basic Grammer, Emails and Professional Communication with Training |
| 12 | Languages | Critical Thinking | Certificate | 30 | Logic, Critical Thinking reason, Evaluation, Interpretation, Language, Linguistics |
| 13 | Humanities | Gender Equality | Certificate | 30 | Gender Based Analysis Analytics, Data Analysis, Design Thinking, Leadership Business Analytics, Leadership Development, Innovation, Qualitative and Quantitative Data Analysis, Stakeholder Analysis, Community engagement |
| 14 | Humanities | Life Skills ( Emotional Intelligence,Team Dynamics, Managing Diversity) | Certificate | 30 | Emotional Intelligence, Team Dynamics, Managing Diversity |
| 15 | Humanities | Human Values and Ethics | Certificate | 30 | Social Values and Human behaviour, Group Discussion, Case Studies, Project work and report writing, Team Building activities, Mock Meetings, Role Play, Public Speaking and Presentations, Mock Interviews |
| 16 | Chemistry | Chemistry in day to day life | Certificate | 30 | Drugs and their classification, Drug-Target interaction, The therapeutic action of different classes of drugs, Chemicals in food, Cleansing agents |
| 17 | Science/Human ities | Research Methodology | Certificate | 30 | Research Problem, Research Design, Sampling Techniques, Research Proposal, Data Collection, Report Submission |

| Sr. No. | Department | Name of the Course | Certificate/ Dip./Adv. | Credits | Broad outline of the Syllabus |
|---|---|---|---|---|---|
| 18 | Music | Rhythm: Course on Music Instruments | Certificate | 30 | History and Origion, Various Types of Equipments and its Operations |
| 19 | Music | Sound Design & Music Vocal | Certificate | 30 | Audio Recording, Music technology, Music production, Singing, Music Vocal. |
| 20 | Computer | Power Point Presentation | Certificate | 30 | Computer Fundamentals, Computer organization, Operating System Fundamentals, PPT |

## VALUE ADDED COURSE: Personal Grooming

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam |
|---|---|---|---|---|---|
| Personal Grooming | 35 Hours | **Practical** | **Viva-Voce** | **Total** | 3 Hours |
| | | 50 | 50 | **100** | |

**Objective:** To impart professional discipline techniques and etiquette required at the workplace. Also to make them ready for job interviews by imparting resume writing and group discussion skills.

**Outcome**: The student should be able to present impactful resume, should be able to create a mark in the group discussion and be able to present himself well in the job interviews. Also, be sensitized on the discipline and conduct requirement in the workplace.

**Skills Imparted**: Resume Writing, Group Discussions, Interview Preparation and professional etiquette

### SYLLABUS

| Unit 1 | Unit 2 |
|---|---|
| 1.1 Introductions<br>1.2 Definition<br>1.3 Importance<br>1.4 Uses and Application | 2.1 Resume Writing<br>• Types of Resume<br>• Impact Points<br>• Content<br>2.2 Key Factors<br>2.3 Common Mistakes<br>2.4 Effective Resume |
| **Unit 3** | **Unit 4** |
| 3.1 Group Discussions<br>• Winning factors<br>• Listening Skills<br>• Summarising<br>3.2 Skills of Debating<br>3.3 Practical's<br>3.4 Win a Group Discussion | 4.1 Interview Skills<br>• Types<br>• Pre Preparations<br>• Dress Up<br>4.2 IQ Test<br>4.3 Interview Preparations<br>4.4 Practical's |

## Value Added Course: Leadership & Teamwork

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam |
|---|---|---|---|---|---|
| Leadership & Teamwork | 30 Hours | Practical | Viva-Voce | Total | 3 Hours |
| | | 50 | 50 | 100 | |

**Objective:** Leadership and Teamwork are the most important mantras in today's professional world. The student has to learn the Human Dynamics to be able to channelize the energies of the team towards a common goal.

**Outcome:** The student should be able to skills of leadership and teamwork in different situations.

**Skills Imparted:** Skills on a number of Human Behaviour, Team Dynamics and Ability to lead.

**Methodology:** The Facilitators of Gurukul Drona will engage in a 40 hours workshop spread over the academic year 2018-19. The participant size will be 40 to 60 students. Leadership and Teamwork skills will be imparted through practical implementation.

**Eligibility:** Students of all streams and classes can enroll for the Value Added Course

**Examination:** There will be one VIVA-VOCE for 50 Marks and one written examination for 50 Marks.

SYLLABUS

| Unit 1 | | Unit 2 | |
|---|---|---|---|
| 1.1 | Introductions | 2.1 | Human Behaviour |
| 1.2 | Definition | 2.2 | Sub-Conscious Mind |
| 1.3 | Importance | 2.3 | Cross Cultural Dynamics |
| 1.4 | Uses and Application | 2.4 | Social Professional Environment |
| **Unit 3** | | **Unit 4** | |
| 3.1 | Team Dynamics | 4.1 | Leadership |
| 3.2 | Types of Teams | 4.2 | Leadership Styles |
| 3.3 | Common Goals | 4.3 | HR V/s Leadership |
| 3.4 | Team Synergy | 4.4 | Crisis management |

## Value Added Course: Professional Etiquette

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam |
|---|---|---|---|---|---|
| Professional Etiquette | 40 Hours | **Practical** | **Viva-Voce** | **Total** | 3 Hours |
| | | 50 | 50 | **100** | |

**Objective:** There are over 30 different parameters of etiquette that a professional needs to understand. To fulfill his duties in the corporate world he needs to understand all of them.

**Outcome:** The student should be able to exhibit phone, email, cubical, meeting and many more etiquette.
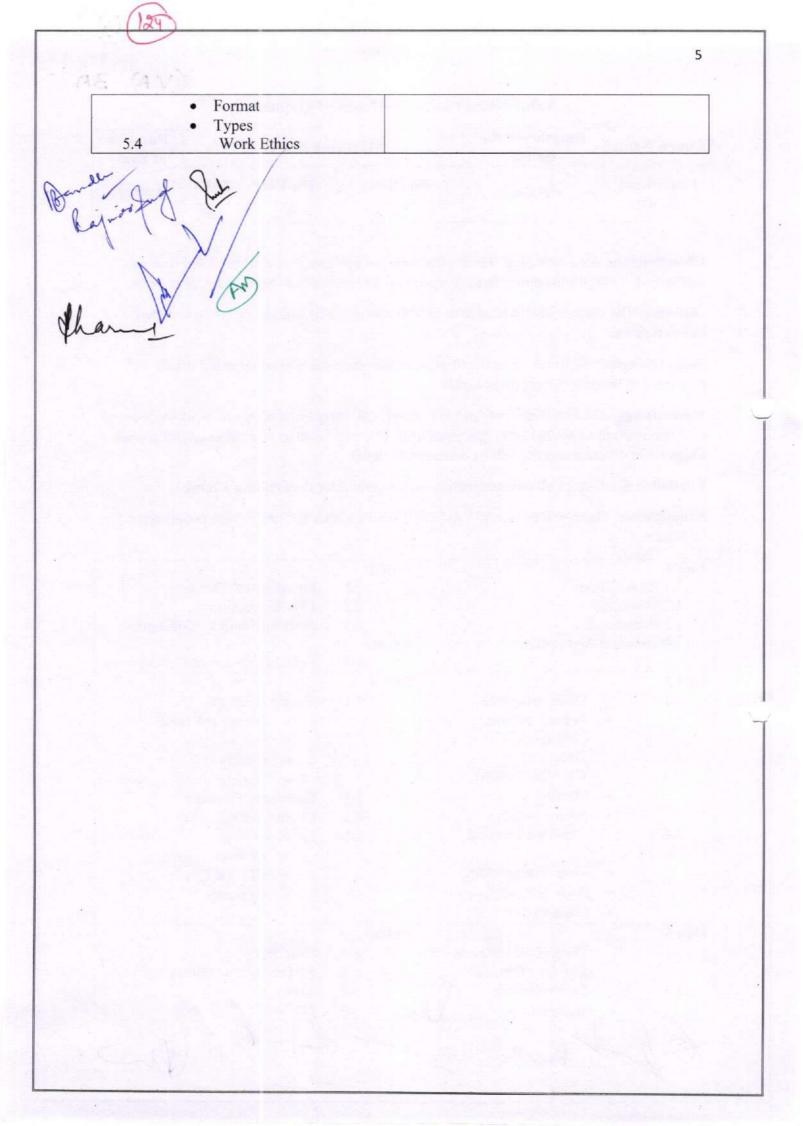
**Skills Imparted:** Skills on a number of professional etiquette will be imparted which will help them to become better professionals.

**Methodology:** The Facilitators of Gurukul Drona will engage in a 40 hours' workshop spread over the academic year 2017-18. The participant size will be 40 to 60 students. Professional Etiquette in different aspects will be discussed in detail.

**Eligibility:** Students of all streams and classes can enroll for the Diploma Course

**Examination:** There will be one VIVA-VOCE for 50 Marks and one written examination for 50 Marks.

| Unit 1 | Unit 2 |
|---|---|
| 1.1 Introductions | 2.1 Interpersonal Etiquette |
| 1.2 Definition | 2.2 First Impression |
| 1.3 Importance | 2.3 Meeting Seniors / Colleagues / Juniors |
| 1.4 Uses and Application | 2.4 Social Professional Environment |

| Unit 3 | Unit 4 |
|---|---|
| 3.1 Office Etiquette | 4.1 Dining Etiquette |
| • Juniors, Seniors Colleagues | • Formal Informal |
| 3.2 Decorum | • Seating |
| 3.3 Cubicle Etiquette | • Cutlery |
| • Meeting | • Seating |
| • Arrangement | 4.2 Restaurant Etiquette |
| 3.4 Business Meeting Etiquette | 4.3 Client meeting |
| | 4.4 Email Writing |
| • Time Management | • Content |
| • Body Language | • CC / BCC |
| • Cross Cultural | • Grammar |
| | • Formats |

| Unit 5 | Unit 6 |
|---|---|
| 5.1 Phone Call Etiquette | 6.1 Case Study |
| 5.2 Gender Etiquette | 6.2 Scenario Presentations |
| 5.3 Letter Writing | 6.3 Viva |
| • Grammar | 6.4 Practical's |

| | | | |
|---|---|---|---|
| | • Format | | |
| | • Types | | |
| 5.4 | Work Ethics | | |

## VALUE ADDED COURSE: Group Discussion

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam |
|---|---|---|---|---|---|
| Group Discussion | 40 Hours | Practical | Viva-Voce | Total | 3 Hours |
| | | 50 | 50 | **100** | |

**Objective:** To impart professional discipline techniques and etiquette required at the workplace. Also to make them ready for job interviews by imparting resume writing and group discussion skills.

**Outcome:** The student should be able to present impactful resume, should be able to create a mark in the group discussion and be able to present himself well in the job interviews. Also, be sensitized on the discipline and conduct requirement in the workplace.
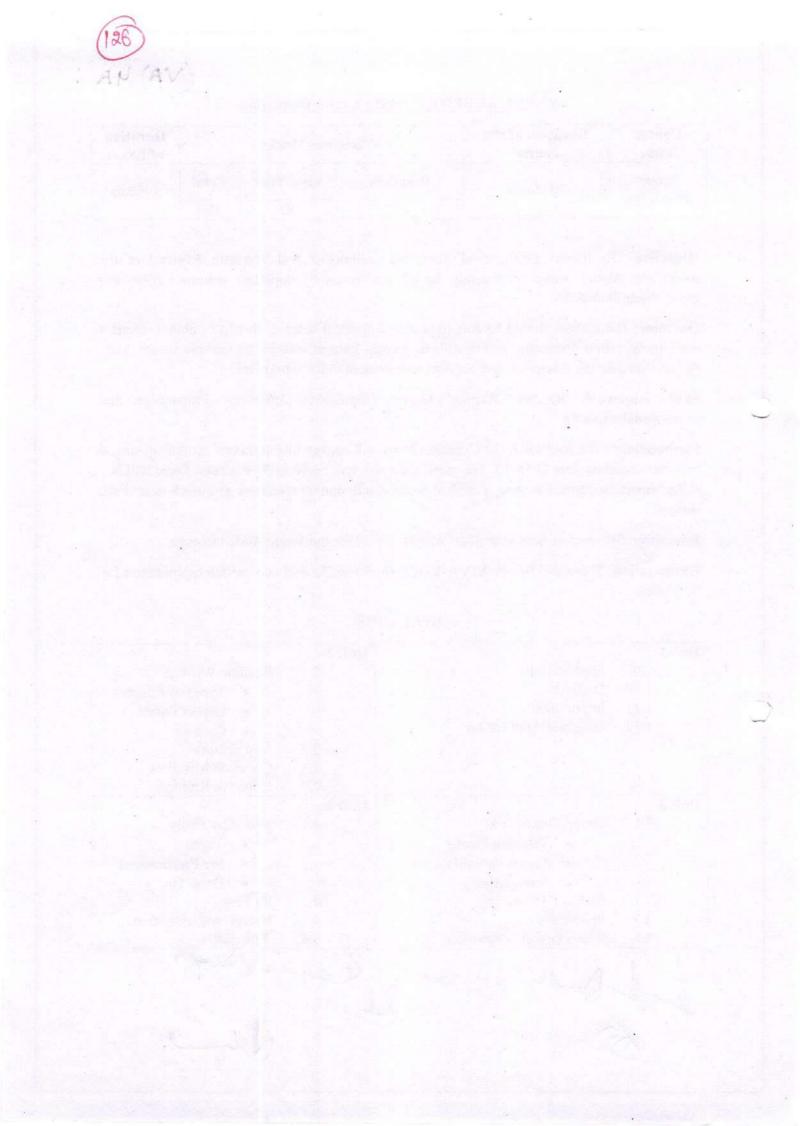
**Skills Imparted:** Resume Writing, Group Discussions, Interview Preparation and professional etiquette

**Methodology:** The Facilitators of Gurukul Drona will engage in a 40 hours' workshop spread over the academic year 2018-19. The participant size will be 40 to 60 students. There will be skills imparting, resume writing, practical group discussion on scenarios and mock interviews session.

**Eligibility:** Students of final year of all streams enroll for the Value Added Course.

**Examination:** There will be one VIVA-VOCE for 50 Marks and one written examination for 50 Marks.

## SYLLABUS

| Unit 1 | | | Unit 2 | | |
|---|---|---|---|---|---|
| | 1.9 | Introductions | | 2.1 | Resume Writing |
| | 1.10 | Definition | | | • Types of Resume |
| | 1.11 | Importance | | | • Impact Points |
| | 1.12 | Uses and Application | | | • Content |
| | | | | 2.2 | Key Factors |
| | | | | 2.3 | Common Mistakes |
| | | | | 2.4 | Effective Resume |
| **Unit 3** | | | **Unit 4** | | |
| | 3.1 | Group Discussions | | 4.1 | Interview Skills |
| | | • Winning factors | | | • Types |
| | | • Listening Skills | | | • Pre Preparations |
| | | • Summarising | | | • Dress Up |
| | 3.2 | Skills of Debating | | 4.2 | IQ Test |
| | 3.3 | Practical's | | 4.3 | Interview Preparations |
| | 3.4 | Win a Group Discussion | | 4.4 | Practical's |

## VALUE ADDED COURSE: Interview Skills

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam |
|---|---|---|---|---|---|
| | | **Practical** | **Viva-Voce** | **Total** | |
| Interview Skills | 30 Hours | 50 | 50 | **100** | 3 Hours |

**Objective:** To impart professional discipline techniques and etiquette required at the workplace. Also to make them ready for job interviews by imparting resume writing and group discussion skills.

**Outcome**: The student should be able to present impactful resume, should be able to create a mark in the group discussion and be able to present himself well in the job interviews. Also, be sensitized on the discipline and conduct requirement in the workplace.

**Skills Imparted**: Resume Writing, Group Discussions, Interview Preparation and professional etiquette

**Methodology**: The Facilitators of Gurukul Drona will engage in a 30 hours' workshop spread over the academic year 2018-19. The participant size will be 40 to 60 students. There will be skills imparting, resume writing, practical group discussion on scenarios and mock interviews session.

**Eligibility**: Students of final year of all streams enroll for the Value Added Course.

**Examination**: There will be one VIVA-VOCE for 50 Marks and one written examination for 50 Marks.

### SYLLABUS

| Unit 1 | Unit 2 |
|---|---|
| a. Introductions<br>b. Definition<br>c. Importance<br>d. Uses and Application | 2.1 Interview Psychology<br>2.2 Interview parameters<br>2.3 Interview Pre Preparations |
| **Unit 3** | **Unit 4** |
| 3.1 Important Arenas of Brush up<br>3.2 Highlight the strengths<br>3.3 Do's & Don'ts | 4.1 Interview Skills<br> • Types<br> • Pre Preparations<br> • Dress Up<br>4.2 IQ Test<br>4.3 Interview Preparations<br>4.4 Practical's |

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam |
|---|---|---|---|---|---|
| Public Speaking | 40 Hours | **Practical** | **Viva-Voce** | **Total** | 3 Hours |
| | | 50 | 50 | **100** | |

**Objective:** Public Speaking is most important soft skills which enable a student to express himself confidently in front of any audience. The student needs these skills in every stage of his life (social and professional).

**Outcome:** The Student should be able fight the stage fright and be able to communicate and express himself in a confident manner in front of small and large audience. He should have all the necessary skills related to this field.

**Skills Imparted:** Body Language, Voice Modulation, Out of Box Thinking and Critical Analysis.

**Methodology:** The Facilitators of Gurukul Drona will engage in a 40 hours' workshop spread over the academic year 2019-20. The participant size will be 40 to 60 students. The skills training on Public Speaking will be imparted in practical methodology.

**Eligibility:** Students of all streams and classes can enroll for the Value Added Course

**Examination:** There will be one VIVA-VOCE for 50 Marks and one written examination for 50 Marks.

## SYLLABUS

| Unit 1 | Unit 2 |
|---|---|
| 1.5 Art : Public Speaking<br>• Improtance<br>• Speaking as a Skill and Art<br>1.6 Definition<br>1.7 Expectation Audit<br>1.8 Uses and Application | 2.1 Body Language<br>• Physical Posture<br>• Listening Skills<br>2.2 Legs and Hand Movement<br>• Power Position<br>• Steeple<br>2.3 Eye Contact<br>• Broadcast<br>• Small and Large Audience<br>2.4 Non Verbal Communication |
| **Unit 3** | **Unit 4** |
| 3.1 Voice and Tone<br>• Importance<br>• Usage in Speaking<br>3.2 Pitch<br>3.3 Voice Modulation<br>• Impact Points<br>3.4 Verbal<br>Communications Skills | 4.1 Creative Thinking<br>• Straight Thinking<br>• Story<br>• Inverse<br>• Deviation<br>4.2 Opening and Closing<br>4.3 Content Writing<br>4.4 Skills of Creative writing |

| Unit 5 | | Unit 6 | |
|---|---|---|---|
| 5.1 | Audio Visual Aid | 6.1 | Impromptu Speaking |
| | • Videos | | • Out of Box Thinking |
| | • PPTs | | • Summary Message |
| | • White Board | 6.2 | Presentation Skills |
| | • Flip Charts | 6.3 | Viva |
| 5.2 | Art of Facilitation | 6.4 | Stage Presentations |
| 5.3 | Hostile Audience | | |
| | • Identify | | |
| | • Ways to tackle | | |
| 5.4 | Impact Situations | | |

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam | Medium of Instruction |
|---|---|---|---|---|---|---|
| | | External | Internal | Total | | |
| Research Methodology | 35 hours | 50 | 50 | 100 | 3 Hours | English and Hindi |

- **Objective:** To enable students to develop understanding of basic concepts of research and to provide them with an opportunity to develop research skills.
- **Department:** Commerce
- **Eligibility:**
  o Students of B.Com, BBA and M.Com can enrol for the course.
- **Structure of the Course:**
  o Paper I: Theory Paper
  o Paper II: Practical
- **Scheme of Examination:**
  o There will be an Examination of 50 marks each. There will be a written examination carrying 50 marks and internal assessment will carry 50 marks.

## Syllabus of Research Methodology

Introduction to research: definition, objectives, characteristics, need for research, designing the methodology, types of research: qualitative and quantitativeresearch.

Literature review; Sampling Techniques.

Data collection, method of questionnaire, types of data: primary and secondary data, interpretation of data.

Basics of hypothesis testing and Report writing.

**Suggested Readings:**

- Bagchi, Kanak Kanti, Research Methodology in Social Sciences: A Practical Guide, Delhi, Abijeet Publications.
- Sharma, B. A. V., Research Methods in Social Sciences, New Delhi, Sterling Publishers.
- Cooper, R. Donald and Pamela S. Schindler , Business Research Methods, Delhi, Tata McGraw-Hill.
- Kothari, C. R. ,Research Methodology: An Introduction, Delhi, New Age.
- Krishna swami, K. N., Appa Ayyar Shivakumar and M. Mathiarajan , Management Research Methodology, Integration of Principles, Methods and Techniques, New Delhi
- Malhotra, N., & Birks, D. Marketing Research: an applied approach: 3rd European Edition. Pearson education.

Remark: Successful completion of the following course earns the student a certification 133
issued by college.

## Rhythm: Course on Music instrumental

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam |
|---|---|---|---|---|---|
| Rhythm: Course on Music instrumental | 30 HOURS | **Theory** | **Practical** | **Total** | 3 Hours |
| | | 50 | 50 | 100 | |

- **Objective:**To make students develop skills in Music instruments
- **Eligibility:**
  - Students of all streams can enroll for the course.
- **Structure of the Course:**
  Paper 1:Practical Examination and Viva-Voce
- **Scheme of Examination:**There will be aTheory of 50 marks and Practical Examination of 50 marks.

## Syllabusfor Value Added Course on Music Instrumental (Percussion)
### Part I: Theory

- Historical study and detailed description of the following Taalas: Teentaal,Ektaal, Deepchandi,Dadra, Kaharva and Rupak.

- Ten Praan of Taalas

- Varn of Tabla

- Structure of Tabla/Dhokla/Tasha/Nagra etc. and its techniques.

- Definition of the following:Taal, Sam, Taali, Khali, Vibhag, Aavartan, Zay

- Lifesketch and contribution towards the development of music instrumental Percussion- playing of the following:-

Ustad Allah Rakhkha; Ustad Zakir Hussain; Pt. Krishan Maharaj; Pt. ShamtaPrashaad; Lala Sattar; Roshan Ali; Naveen Sharma

### Part II: Practical

a) Ability to demonstrate Teentaal, Ektaal, Deepchandi, Dadra, Keharva and Rupak by hand in Thah and DugunLaykaries with reciting bols.

b) Tuning of Instrument

c) Ability to play the Taalas- Dadra, Kaharva and Teentaal on your own instrument

d) Playing the instruments:

e) Single lay exercises

f) Double lay exercises

Exposure:

a) At least one stage performance in front of live audience every month.

b) Solo performance on stage in front of live audience.

c) Accompaniment with any classical music/ light music/ folk music.

d) Participation in music instrumental competitions and shows.

Remark: Successful completion of the following courses earns the student a certification issued by college.

## Sound Design and Music Vocal

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam | Medium of Instruction |
|---|---|---|---|---|---|---|
| Sound Design and Music Vocal | 30 HOURS | **External** | **Internal** | **Total** | 3 Hours | English and Hindi |
| | | 50 | 50 | 100 | | |

- **Objective:** The objective of the course is to equip students with sound designing skills which will help them to become a music producer as well as sound designer.
- **Department:** Commerce
- **Eligibility:**
  - Students of all streams can enrol for the course.
- **Structure of the Course:**
  - Paper I: Theory Paper
  - Paper II: Practical
- **Scheme of Examination:**
  - There will be an Examination of 50 marks each.There will be a written examination carrying 50 marks and internal assessment will carry 50 marks.

## Syllabus

- Uses of Computer in Sound Recording

- Recording concept and type

- Play back music and sound recording

- Recording studio equipment

- How to create a song with internal and external loops

- How to edit music

- Mic Technique for Music Vocal students in studio

- Difference between voice training in studio and live music

- How to make a powerful vocal track in studio recording

- How to record vocal on karoke track

- How to mix master a track

**SUGGESTED READING:**

- The Art Of Mixing By David Givson
- Mixing Secrets for the small studio by Mike Senior
- Making Music: 74 Creative Strategies for electronic music Producer By Dennis DeSantis
- Aadhunik Recording Padhhati By Anita Gautam
- Modern Recording Techniques by David Miles Huber

## VALUE ADDED COURSE: Power Point Presentation

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam |
|---|---|---|---|---|---|
| | | Practical | Viva-Voce | Total | |
| Power Point Presentation | 30 – 40 Hours | 50 | 50 | 100 | 3 Hours |

**Objective:** To impart skills on effective presentation using audio visual aids of Power Point Presentation, Props, videos and charts. The student will use these techniques in his profession for client meetings, team meetings and also addressing general gathering.

**Outcome**: The student should be able to explain his theme/topic in collaboration with audio visual aids in an effective manner. He should be able to switch between different mediums with ease and at the same time have control on the audience and the topic.

**Skills Imparted**: Power Point Presentations, Video Presentations, Presentation styles, Voice Modulation and Body language.

**Methodology**: The Facilitators of Gurukul Drona will engage in a 30 – 40 hours' workshop spread over the academic year 2018-19. The participant size will be 40 to 60 students. There will be skills imparting, power point presentations, video presentations, out of the box props creation and overall presentations

**Eligibility**: Students of all streams and classes can enroll for the Value Added Course.

**wExamination**: There will be one VIVA-VOCE for 50 Marks and one ritten examination for 50 Marks.

### Syllabus

| Unit 1 | | Unit 2 | |
|---|---|---|---|
| **5 Hours** | | **10 Hours** | |
| 1.5 | Introductions and Ice Breakers | 2.1 | Presentation Styles |
| | • Facilitators Introduction | | • Objective |
| | • Participants Introduction | | • Fact Based |
| | • Group Introduction | | • Subjective |
| | • Ice Breaker - Achievements | 2.2 | Props and Samples |
| | | | • Types of Props |
| | | | • How to Use Props |
| 1.6 | Definition | 2.3 | Practical's |
| | • Presentation Skills in Future | 2.4 | Effective Presentations from Props |
| 1.7 | Importance of Presentation Skills | | |
| 1.8 | Uses and Application | | |
| **Unit 3** | **5 - 10 Hours** | **Unit 4** | **10- 15 hours** |
| 3.1 | Video Presentations | 4.1 | Graphic Presentations |
| | • Editing | | • Time & Response |

# Syllabus Description ofValue Added Courses

Remark: Successful completion of the following courses earns the student a certification issued by college.

## Art and Craft

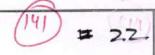| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam |
|---|---|---|---|---|---|
| Creative Skills: Art and Craft | 32 hours | Practical | Viva-Voce | Total | 3 Hours |
| | | 80 | 20 | 100 | |

- **Objective:** To develop creative skills of the students and to train them in different areas of Art and Craft and this may enable them to view this as an emerging career opportunity.
- **Eligibility:**
  - Students of all streams can enroll for the course.
- **Structure of the Course:**
  Paper 1:Practical Examination and Viva-Voce
- **Scheme of Examination:** There will be a Practical Examination of 80 marks and Viva-voce of 20 marks.

## Syllabus for Value Added Course on Art and Craft

- Creative sets: Bottle Set, Candle set, Jar set, Lamp art, Karvah Art
- Mirror Art: Talavera mirror, 3D mirror, mouldit mirror, crystal mirror
- Fabric Art: Fabric painting, Neon Pop art, African Art, Gond Art, embossing art, gota patti, liquid embroidery work.
- Canvas art: Canvas painting, canvas 3D painting, mouldit canvas, abstract painting
- Mural art: Kerala mural, mixed media mural, chopping board glass mural
- Newspaper art: newspaper pop art, newspaper photo frame, bicycle.
- Jewellery art: Mouldit Jewellery, Paper jewellery, Wood jewellery, Fabric jewellery, Thewa jewellery
- Pot decoration: Acrylic Pot, Mouldit pot, blue pottery, mixed media pot
- Pebble Art: Paper weight, pebble art painting, pebble art canvas
- Waste material art: PVC Pipe art, Plastic bottle art, CD art, Wood cutting art
- File folder decoration: Card decoration, File folder, quilling art, 3D and Paint folder
- Ceramic Art: Pot art, Lippan art
- Tie and Dye: Shibori, Indigo Dabu painting, Crumple dye, Ruching dye.

# VALUE ADDED COURSE: Impromptu Speaking & Stage Management

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam |
|---|---|---|---|---|---|
| Impromptu Speaking & Stage Management | 30 Hours | Practical | Viva-Voce | Total | 3 Hours |
| | | 50 | 50 | 100 | |

**Objective:** Public Speaking is most important soft skills which enable a student to express himself confidently in front of any audience. The student needs these skills in every stage of his life (social and professional). Impromptu Speaking is another skill which is advanced levels of speaking in public.

**Outcome:** The Student should be able fight the stage fright and be able to communicate and express himself in a confident manner in front of small and large audience. He should have all the necessary skills related to this field.

**Skills Imparted:** Body Language, Voice Modulation, Out of Box Thinking and Critical Analysis.

| Unit 1  5 Hours | Unit 2  5 Hours |
|---|---|
| 1.13  Art : Public Speaking<br>  • Improtance<br>  • Speaking as a Skill and Art<br>1.14  Definition<br>1.15  Expectation Audit<br>1.16  Uses and Application | 2.1  Body Language<br>  • Physical Posture<br>  • Listening Skills<br>2.2  Legs and Hand Movement<br>  • Power Position<br>  • Steeple<br>2.3  Eye Contact<br>  • Broadcast<br>  • Small and Large Audience |
| **Unit 3  5 Hours** | **Unit 4  5 hours** |
| 3.1  Impromptu Spekaing<br>  • Importance<br>  • Usage in Speaking<br>3.2  Skills and Tricks<br>3.3  Speaking Templates<br>3.4  Verbal Communications Skills | 4.1  Stage Management<br>4.2  Dynamics<br>4.3  Career Option<br>4.4  Nuances of Stage Management |
| **Unit 5  5 Hours** | **Unit 6  5 Hours** |
| 5.1  Practical Training<br>5.2  Tasks and Homework | 6.1  Viva<br>6.4  Stage Presentations |

# Syllabus Description of Value Added Courses

Remark: Successful completion of the following courses earns the student a certification issued by college.

## Value Added Course: Personality development & Professional Grooming

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam |
|---|---|---|---|---|---|
| | | **Practical** | **Viva-Voce** | **Total** | |
| Personality development & Professional Grooming | 40 Hours | 50 | 50 | **100** | 3 Hours |

**Objective:** Basic Manners, Social Etiquette, Behaviour, Relations and Professional Grooming are required for all the students to be complete in their life skills.

**Outcome:** The Students should be able to emit the correct Personal and Professional Behaviour at all times.

**Skills Imparted:** Personal, Professional, Interpersonal and Life Skills

**Methodology:** The Facilitators of Gurukul Drona will engage in a 40 hours' workshop spread over the academic year 2017-18. The participant size will be 40 to 60 students. Personal and Professional Skills will be imparted in each participant. The participants will undergo theory, practical learning and scenarios.

**Eligibility:** Students of all streams and classes can enroll for the Value Added Course.

**Examination:** There will be one VIVA-VOCE for 50 Marks and one written examination for 50 Marks.

## SYLLABUS

| Unit 1 | | Unit 2 | |
|---|---|---|---|
| 1.1 | Introduction on Life Skills. | 2.1 | Personal Grooming |
| 1.2 | Definition Interpersonal Skills | 2.2 | Personal Hygiene |
| 1.3 | Expectation Audit | 2.3 | Dress Up |
| 1.4 | Uses and Application | 2.4 | Left Brain / Right Brain |
| **Unit 3** | | **Unit 4** | |
| 3.1 | Personal Relation | 4.1 | Professional Grooming |
| 3.2 | Family Values | 4.2 | Interpersonal Skills |
| 3.3 | Social Values | 4.3 | Customer Relations |
| 3.4 | Civic Values | 4.4 | Personal Brand Building |
| **Unit 5** | | **Unit 6 Practical's** | |
| 5.1 | Professional Etiquette | 6.1 | Practical Assignments |
| 5.2 | Internet Tool Kit | 6.2 | Viva |

| 5.4   Creativity | 6.3   Exam |
|------------------|------------|

Remark: Successful completion of the following courses earns the student a certification issued by college.

## Value Added Course on Circuit Design on PCB

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam | Medium of Instruction |
|---|---|---|---|---|---|---|
| Circuit Design on PCB | 30 hours | Theory | Practical | Total | 3 Hours | English |
| | | 40 | 60 | 100 | | |

- **Objective:**
  PCB (Printed Circuit Board) design is an essential and integral part of each electronics device and appliance. This course is designed to develop the caliber in students to design and make their own projects starting from the blank PCB to assembly of the components to get final and working projects.
- **Department:** Electronics & IT
- **Eligibility:**
  - Students of B.Sc (Non-Medical, Computer Science , Electronics & IT), M.Sc. Physics
- **Structure of the Course:**
  - Paper I: Theory Paper
  - Paper II: Practical
- **Scheme of Examination:**
  - There will be an Examination of Total 100 marks. Written examination will carry 40 marks and practical examination will carry 60 marks.

### Syllabus

**Theory:** Types of PCBs: Single Sided (Single Layer), Multi-Layer (Double Layer), PCB Materials, Component introduction and their categories: **Active Components**: Diode, Transistor, MOSFET, LED, SCR, Integrated Circuits (ICs), **Passive Components:** Resistor, Capacitor, Inductor, Transformer, Speaker/Buzzer, Switches, Size and Shape of various components, Testing of components.

**Hands-On :** Express PCB software: Description to Express PCB, Hands on practice on available library of components ,working through wiring and schematic designing, Making New Component Symbols.

**PCB Design and Assembly:** PCB Designing Flow Chart: PCB Layout Designing (by taking small electronic circuit examples), Layout Design, Printing, Etching, Drilling, Assembly of components, Project Implementation

## Text Books & Other References:

- Basic Electronics & Linear Circuits, N N Bhargava & D C Kulshreshtha
- Express PCB Tutorials
- Electronics for You for latest Projects

Remark: Successful completion of the following courses earns the student a certification issued by college.

## Value Added Course: First Aid & Home Nursing

| Course Name | Duration of the course | Maximum Marks | | | Duration of Exam |
|---|---|---|---|---|---|
| First Aid & Home Nursing | 32 Hours | Practical | Viva Voice | Total | 1 Hour 30 Minutes. |
| | | 60 | 20 | 80 | |

- **Objective:** First Aid course equips the learner with the knowledge, practical skills & understanding required to provide appropriate first-aid treatment in the workplace in compliance with the requirements of the Safety, Health & Welfare at Work.

- **Programme outcome:** At the end of this course students should be able to:
  Understand the Basics of First-Aid.
  Understand the Basic System of Human Body.
  Understand the Dressing Techniques
  Understand the Banding Techniques
  Understand the Transportation Techniques.

- **Eligibility:**
  Students of all streams can enroll for the course.

- **Structure of the Course:**
  Paper 1(Theory): 14 Hours.
  Paper 2(Practical):18 Hours.

- **Scheme of Examination:** There will be a Practical Examination of 60 marks and Viva-voce of 20 marks.

## Syllabus

**Paper 1(Theory)**
1. Basic First Aid Techniques
2. Respiratory System and Breathing
3. Heart, Blood Circulation, Shock
4. Bones,Joints And Muscles
5. Nervous System and Unconsciousness
6. Gastrointestinal Tract, Diarrhoea, Food Poisoning And Diabetes
7. Skin, Burns, Heat Exhaustion, Fever and Hypothermia
8. Poisoning
9. Bites And Stings
10. Sense, Foreign Bodies in Eye, Ear, Nose or Skin And Swallowed Foreign
11. Urinary System, Reproductive System And Emergency Childbirth

12. Psychological First Aid
13. Specific Emergency Situations And Disaster Management
14. First Aid Techniques: Dressing, Bandages And Transport Techniques.

## Paper 2(Practical)

Practical Demonstration of all the First-Aid Techniques:

a.  Dressing
b.  Bandages
c.  Transport Techniques