

**MAHATMA GANDHI UNIVERSITY
KOTTAYAM**



B.VOC. DEGREE PROGRAMME IN

PRINTING TECHNOLOGY

REGULATION, SCHEME AND SYLLABUS

(2018 ADMISSION ONWARDS)

REGULATION AND SCHEME FOR B.VOC. PROGRAMME UNDER MAHATMA GANDHI UNIVERSITY

(2018 admissions onwards)

We are facing unprecedented challenges – Skill and knowledge, the driving forces of economic growth and social development for any country. Presently, the country faces a demand – supply mismatch, as the economy needs more ‘skilled’ workforce than that is available. In the higher education sphere, knowledge and skills are required for diverse forms of employment in the sector of education, health care manufacturing and other services. Potentially, the target group for skill development comprises all those in the labour force, including those entering the labour market for the first time, those employed in the organized sector and also those working in the unorganized sector. Government of India, taking note of the requirement for skill development among students launched National Vocational Education Qualification Framework (NVEQF) which was later on assimilated into National Skills Qualifications Framework (NSQF). Various Sector Skill Councils (SSCs) are developing Qualification Packs (QPs), National Occupational Standards (NOSs) and assessment mechanisms in their respective domains, in alignment with the needs of the industry.

The University Grants Commission (UGC) has launched a scheme on skills development based higher education as a part of college/university education, leading to Bachelor of Vocation (B.Voc.) Degree with multiple exits such as Diploma/Advanced Diploma under the NSQF (National skill Qualifications framework). The B.Voc. programme is focused on universities and colleges providing undergraduate studies which would also incorporate specific job roles along with broad based general education. This would enable the graduates completing B.Voc. to make a meaningful participation in accelerating India’s economy by gaining appropriate employment, becoming entrepreneurs and creating appropriate knowledge. The proposed vocational programme will be a judicious mix of skills, professional education related to concerned vocation and also appropriate content of general education.

The **Mahatma Gandhi University** gave a strong momentum to the initiatives of UGC-NSQF in the very beginning itself. This University provides opportunities to its affiliating colleges since Academic Year 2014-15 to start skill based vocational Graduate programmes strictly under the guidelines of UGC and NSQF.

1. TITLE

These regulations shall be called “**MAHATMA GANDHI UNIVERSITY REGULATIONS FOR B.VOC PROGRAMME 2018**”.

2. SCOPE

Applicable to all regular B.Voc Programme conducted by the University with effect from 2018 admissions onwards, except for B.Voc. Programmes, having scheme and syllabus already approved by MGU under 2014 regulation and scheme.

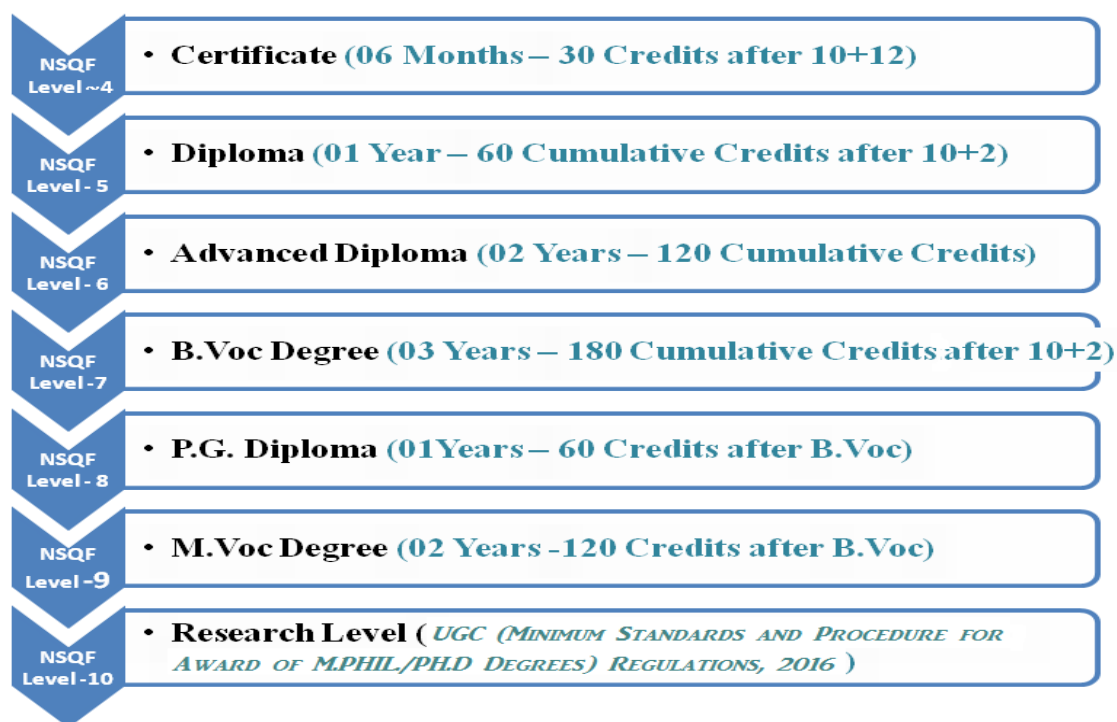
During the academic year 2019-20 admission onwards, all regular B.Voc Programme in affiliating colleges under MG University should strictly follow *Mahatma Gandhi University Regulations For B.Voc Programme 2018*.

3. ELIGIBILITY FOR ADMISSION AND RESERVATION OF SEATS

Eligibility for admissions and reservation of seats for various Undergraduate Programmes shall be according to the rules framed by the University and UGC in this regard, from time to time.

4. TYPE OF COURSES AND AWARDS:

There will be full time credit-based modular programmes, wherein banking of credits for skill and general education components shall be permitted so as to enable multiple exit and entry.



The multiple entry and exit enables the learner to seek employment after any level of Award and join back as and when feasible to upgrade qualifications / skill competencies either to move higher in the job profile or in the higher educational system. This will also provide the learner an opportunity for vertical mobility to second year of B.Voc degree programme after one year diploma and to third year of B.Voc degree programme after a two

year advanced diploma. The students may further move to Masters and Research degree programmes mapped at NSQF Level 8 – 10.

5. CURRICULA AND CREDIT SYSTEM FOR SKILL BASED COURSES

In order to make education more relevant and to create ‘industry fit’ skilled workforce, the institutions recognized under B.Voc Degree programme offering skill based courses will have to be in constant dialogue with the industry and respective Sector Skill Councils (SSC’s) so that they remain updated on the requirements of the workforce for the local economy. These institutions should also preserve and promote the cultural heritage of the region, be it art, craft, handicraft, music, architecture or any such thing, through appropriately designed curriculum leading to gainful employment including self-employment and entrepreneurship development.

The curriculum in each of the semester/years of the programme(s) will be a suitable mix of general education and skill development components. The General Education Component shall have 40% of the total credits and balance 60% credits shall be of Skill Component.

The institution(s) shall prepare draft curriculum as per the UGC guidelines for Curricular Aspects Assessment Criteria and Credit System for Skill based Vocational Courses and place it for vetting by the UGC Advisory Committee constituted under these guidelines.

The Curriculum shall be finally approved by the Board of Studies (BoS) and Academic Council of the University / Autonomous College. The Universities where BoS for Vocational subjects has not yet been constituted, the curriculum may be considered by the BoS in allied subject area or an ad-hoc BoS may be constituted till the time regular BoS is notified in the university. The BoS should consider the programme wise curriculum based QP for skill component and relevant general education subjects *i.e.* the curricula for programmes in one broad subject area may vary from institution to institution in case the different progressive QPs are mapped with the programmes being offered. The choice of different progressive Job roles for a course may also be enabled under CBCS.

6. STRUCTURE OF THE PROGRAMME

6.1 Skill Development Components - 60% Weight age

6.2 General Education Component - 40% Weight age

The B.Voc Programme should comprise 60% Skill Development Components (60 % of total Credit) and 40% General Education Component (40% total Credit) as per guidelines of UGC and NSQF.

As an illustration, awards shall be given at each stage as per Table 1 below for cumulative credits awarded to the learners in skill based vocational courses.

Table 1

NSQF Level	Skill Component Credits	General Education Credits	Total Credits for Award	Normal Duration	Exit Points / Awards
7	108	72	180	Six Semester s	B.Voc Degree
6	72	48	120	Four semesters	Advanced Diploma
5	36	24	60	Two semesters	Diploma
4	18	12	30	One semester	Certificate

7. SCHEME AND SYLLABUS

7.1. B.Voc Programme should include (a) General Education Component, (b) Skill Education Component

7.2. The B.Voc Programme should followed Credit and Semester System of MGU.

7.3. A separate minimum of 30% marks each for internal and external (for both theory and AOC) and aggregate minimum of 40% are required for a pass for a course. For a pass in a programme, **Grade P** is required for all the individual courses. If a candidate secures **F Grade** for any one of the courses offered in a Semester/Programme, **only F grade** will be awarded for that Semester/Programme until he/she improves this to **P Grade** or above within the permitted period.

8. ASSESSMENT AND EVALUATION BY MG UNIVERSITY.

General Education Components and Skill Development Components shall be assessed and evaluated by MG University as per University Norms and UGC-NSQF guidelines.

9. ASSESSMENT AND CERTIFICATION BY SECTOR SKILL COUNCIL (SSC)

The affiliated colleges should make necessary arrangements for the simultaneous assessments and certification of Skill Development Component by aligned SSC having the approval of National Skill Development Corporation of India (NSDC).

10. EXAMINATIONS

10.1 The evaluation of each paper shall contain two parts:

- (i) Internal or In-Semester Assessment (ISA)
- (ii) External or End-Semester Assessment (ESA)

10.2. The internal to external assessment ratio shall be 1:4.

Both internal and external marks are to be rounded to the next integer.

All the courses (theory & AOC), grades are given **on a 7-point scale** based on the total percentage of marks, **(ISA+ESA)** as given below:-

Percentage of Marks	Grade	Grade Point
95 and above	O (Outstanding)	10
90 to below 95	A+ (Excellent)	9
80 to below 90	A (Very Good)	8
70 to below 80	B+ (Good)	7
60 to below 70	B (Above Average)	6
50 to below 60	C (Average)	5
40 to below 50	P (Pass)	4
Below 40	F(Fail)	0
	Ab (Absent)	0

11. CREDIT POINT AND CREDIT POINT

AVERAGE Credit Point (CP) of a paper is calculated using

the formula:-

$$CP = C \times GP, \text{ where } C \text{ is the Credit and } GP \text{ is the Grade point}$$

Semester Grade Point Average (SGPA) of a Semester is calculated using the

formula:- $SGPA = TCP/TC$, where TCP is the Total Credit Point of that semester.

Cumulative Grade Point Average (CGPA) is calculated using the formula:-

$$CGPA = TCP/TC, \text{ where } TCP \text{ is the Total Credit Point of that programme.}$$

Grade Point Average (GPA) of different category of courses viz. Common Course I, Common Course II, Complementary Course I, Complementary Course II, Vocational course, Core Course is calculated using the formula:-

$$GPA = TCP/TC, \text{ where } TCP \text{ is the Total Credit Point of a category of course.}$$

TC is the total credit of that category of course

Grades for the different courses, semesters and overall programme are given based on the corresponding CPA as shown below:

GPA	Grade	
9.5 and above	O	Outstanding
9 to below 9.5	A+	Excellent
8 to below 9	A	Very Good
7 to below 8	B+	Good
6 to below 7	B	Above Average
5 to below 6	C	Average
4 to below 5	P	Pass
Below 4	F	Failure

12. MARKS DISTRIBUTION FOR EXTERNAL AND INTERNAL EVALUATIONS

The external theory examination of all semesters shall be conducted by the University at the end of each semester. Internal evaluation is to be done by continuous assessment. For all courses total marks of external examination is 80 and total marks of internal evaluation is 20. Marks distribution for external and internal assessments and the components for internal evaluation with their marks are shown below:

12.1 For all Theory Courses

- a) **Marks of external Examination : 80**
b) **Marks of internal evaluation : 20**

Components of Internal Evaluation – Theory	Marks
Attendance	5
Assignment /Seminar/Viva	5
Test paper(s) (1 or 2) (1×10 =10; 2×5 =10)	10
Total	20

For all AOC Courses total marks for external evaluation is 80 and total marks for internal evaluation is 20.

12.2 For all AOC Courses

- a) **Marks of external Examination : 80**
b) **Marks of internal evaluation : 20**

Components of Internal Evaluation – AOC	Marks
Attendance	5
Record	5
Skill Test	5
Lab Performance / Punctuality	5
Total	20

*Marks awarded for Record should be related to number of experiments recorded and duly signed by the teacher concerned in charge.

All three components of internal assessments are mandatory.

12.3 Project Evaluation

- a) Marks of external Examination : 80
b) Marks of internal evaluation : 20

Components of Internal Evaluation	Marks
Punctuality	5
Experimentation/Data Collection	5
Skill Acquired	5
Report	5
Total	20

*Marks for dissertation may include study tour report if proposed in the syllabus.

Components of External Evaluation	Marks
Dissertation (External)	50
Viva-Voce (External)	30
Total	80

(Decimals are to be rounded to the next higher whole number)

13. INTERNSHIP

After the completion of every even semester, the student will undergo a minimum of two weeks Internship Programme in an Industry, having a good exposure in the concerned skill (Established at least two years prior), capable of delivering the skill sets to the students.

At the end of the Internship, the students should prepare a comprehensive report.

14. ATTENDANCE EVALUATION FOR ALL PAPERS

Attendance Percentage	Marks
Less than 75 %	1 Mark
75 % & less than 80%	2 Marks
80% & less than 85%	3 Marks
85% & less than 90%	4 Marks
90% & above	5 Marks

(Decimals are to be rounded to the next higher whole number)

15. ASSIGNMENTS

Assignments are to be done from 1st to 4th Semesters. At least one assignment per course per semester should be submitted for evaluation.

16. INTERNAL ASSESSMENT TEST PAPERS

Two test papers are to be conducted in each semester for each course. The evaluations of all components are to be published and are to be acknowledged by the candidates. All documents of internal assessments are to be kept in the college for one year and shall be made available for verification by the University. The responsibility of evaluating the internal assessment is vested on the teacher(s), who teach the course.

17. GRIEVANCE REDRESSAL MECHANISM

Internal assessment shall not be used as a tool for personal or other type of vengeance. A student has all rights to know, how the teacher arrived at the marks. In order to address the grievance of students, a three-level Grievance Redressal mechanism is envisaged. A student can approach the upper level only if grievance is not addressed at the lower level.

17.1. Level 1: Department Level:

The Department cell chaired by the HOD, Department Coordinator, Faculty Advisor and Teacher in-charge as members.

17.2. Level 2: College level

A committee with the Principal as Chairman, College Coordinator, HOD of concerned Department and Department Coordinator as members.

17.3. Level 3: University Level

A Committee constituted by the Vice-Chancellor as Chairman, Pro-Vice-Chancellor, Convener - Syndicate Standing Committee on Students Discipline and Welfare, Chairman-Board of Examinations as members and the Controller of Examination as member-secretary.

The College Council shall nominate a Senior Teacher as coordinator of internal evaluations. This coordinator shall make arrangements for giving awareness of the internal evaluation components to students immediately after commencement of first semester

The internal evaluation marks/grades in the prescribed format should reach the University before the 4th week of October and March in every academic year.

18. EXTERNAL EXAMINATION

The external examination of all semesters shall be conducted by the University at the end of each semester.

- Students having a minimum of 75% average attendance for all the courses only can register for the examination. Condonation of shortage of attendance to a maximum of 10 days in a semester subject to a maximum of 2 times during the whole period of the programme may be granted by the University on valid grounds. This condonation shall not be counted for internal assessment. Benefit of attendance may be granted to students attending University/College union/Co-curricular activities by treating them as present for the days of absence, on production of participation/attendance certificates, within one week, from competent authorities and endorsed by the Head of the institution. This is limited to a maximum of 10 days per semester and this benefit shall be considered for internal assessment also. Those students who are not eligible even with condonation of shortage of attendance shall repeat the **semester** along with the next batch after obtaining readmission.

- Benefit of attendance may be granted to students attending University/College union/Co-curricular activities by treating them as present for the days of absence, on production of participation/attendance certificates, within one week, from competent authorities and endorsed by the Head of the institution. This is limited to a maximum of 10 days per semester and this benefit shall be considered for internal assessment also.

- Those students who are not eligible even with condonation of shortage of attendance shall repeat the course along with the next batch.

- There will be no supplementary exams. For reappearance/ improvement, the students can appear along with the next batch.

- Student who registers his/her name for the external exam for a semester will be eligible for promotion to the next semester.

- A student who has completed the entire curriculum requirement, but could not register for the Semester examination can register notionally, for getting eligibility for promotion to the next semester.

- A candidate who has not secured minimum marks/credits in internal examinations can re-do the same registering along with the University examination for the same semester, subsequently.

19. PATTERN OF QUESTIONS

Questions shall be set to assess knowledge acquired, standard and application of knowledge, application of knowledge in new situations, critical evaluation of knowledge and the ability to synthesize knowledge. The question setter shall ensure that questions covering all skills are set. She/he shall also submit a detailed scheme of evaluation along with the question paper. A question paper shall be a judicious mix of short answer type, short essay type /problem solving type and long essay type questions.

19.1 Pattern of questions for External examination – Theory paper

Question Type	Total no. of questions	Number of questions to be answered	Marks of each question	Total marks
Very short answer type	12	10	2	20
Short answer (Not to exceed 60 words)	9	6	5	30
Long essay	4	2	15	30
TOTAL	25	18		80

19.2 Pattern of questions for external examination – AOC

Question Type	Total no. of questions	Number of questions to be answered	Marks of each question	Total marks
Theory Assessment- Short Answer Type	8	5	4	20
Skill Assessment- Practical	1	1	60	60
TOTAL	9	6		80

19.3 Mark division for external AOC/ LAB examination

Record	Theory/ Procedure/ Design	Activity/ Neatness	Result	Viva	Total
10	10	20	10	10	60

20. RANK CERTIFICATE

The University publishes rank list of top 10 candidates for each programme after the publication of 6th semester results. Rank certificate shall be issued to candidates who secure positions from 1st to 3rd in the rank list. Candidates who secure positions from fourth to tenth in the rank list shall be issued position certificate indicating their position in the rank list.

Candidates shall be ranked in the order of merit based on the CGPA scored by them. Grace marks awarded to the students should not be counted fixing the rank/position. Rank certificate and position certificate shall be signed by the Controller of Examinations.

21. MARK CUM GRADE CARD

The University shall issue to the students grade/marks card (by online) on completion of each semester, which shall contain the following information:

- Name of University
- Name of the College
- Title & Model of the B. VOC Programme
- Semester concerned
- Name and Register Number of student
- Code, Title, Credits and Max. Marks (Int, Ext & Total) of each course opted in the semester
- Internal marks, External marks, total marks, Grade, Grade point (G) and Credit point in each course in the semester
- Institutional average of the Internal Exam and University Average of the External Exam in each course.
- The total credits, total marks (Max & Awarded) and total credit points in the semester (corrected to two decimal places)
- Semester Credit Point Average (SCPA) and corresponding Grade
- Cumulative Credit Point Average (CCPA)

The final Grade/mark Card issued at the end of the final semester shall contain the details of all courses taken during the entire programme and shall include the final grade/marks scored by the candidate from 1st to 5th semester, and overall grade/marks for the total programme.

22. READMISSION

Readmission will be allowed as per the prevailing rules and regulations of the university.

There shall be **3 level monitoring** committees for the successful conduct of the scheme. They are:

1. Department Level Monitoring Committee (DLMC), comprising HOD and two senior-most teachers as members.
2. College Level Monitoring Committee (CLMC), comprising Principal, Dept. – Co-Ordinator and A.O/Superintendent as members.
3. University Level Monitoring Committee (ULMC), headed by the Vice – Chancellor and Pro–Vice – Chancellor, Convenors of Syndicate subcommittees on Examination, Academic Affairs and Staff and Registrar as members and the Controller of Examinations as member-secretary.

23. TRANSITORY PROVISION

Notwithstanding anything contained in these regulations, the Vice Chancellor shall, for a period of one year from the date of coming into force of these regulations shall be applied to any programme with such modifications as may be necessary.

B.Voc. – Printing Technology

Detailed Scheme for the Distribution of Credits and Period of Instruction

Total Credits per semester = 30, Total Credits for the course = 180

Total contact hours per week = 25, Total contact hours per semester = 450

(Course Code details : PT-Printing Technology, CA-Computer Application, EE-Energy and Environment, 1- First Semester, S-Skill Development, 1T-First Theory Paper, 2T- Second Theory Paper, P- Practical, G-General Education, V-Vocational Workshop I- Industrial Training / Apprenticeship, MN- Minor Project, MP- Major Project)

First Semester								
Sl. No	Type of course	Course code	Title of course	Exam duration	Credit per course	Contact hours per week	Total contact hours for the course	Total credits for the semester
1	General Component	BOCG101	Listening and Speaking Skills in English (T)	3	4	4	72	
2	General Component	BOCG102	IT For Business (AOC)	3	4	3	54	
3	General Component (Computer Applications)	CA1G1T	Computer Fundamentals (T)	3	2	3	54	
4	General Component (Energy and Environment)	EES1G1T	Renewable Energy Resources (T)	3	2	2	36	
5	Skill Component	PT1S1T	Fundamentals of Printing Technology (T)	3	5	5	90	

6	Skill Component	PT1S2T	Graphic Design and Reproduction (T)	3	4	4	72	
7	Skill Component - Practical	PT1S2P	Graphic Design and Reproduction-Practical	3	3	3	54	
8	Skill Component (Internship/Training)	PT1SV1	Vocational Workshop-I (Pre-Press Software Lab)	Internal Evaluation	6	2	36	
TOTAL					30	25	450	30

Second Semester

Sl. No	Type of course	Course code	Title of course	Exam duration	Credit per course	Contact hours per week	Total contact hours for the course	Total credits for the semester
1	General Component	BOCG201	Writing and Presentation Skills in English (T)	3	4	4	72	
2	General Component (Computer Applications)	CA2G1T	Digital Electronics& Microprocessor (T)	3	4	4	72	
3	General Component (Energy and Environment)	EES2G1T	Environmental Studies & Human Rights (T)	3	4	4	72	

4	Skill Component	PT2S1T	Printing Material Science (T)	3	4	4	72	
5	Skill Component	PT2S2T	Printing Machineries (T)	3	5	5	90	
6	Skill Component - Practical	PT2S2P	Printing Machineries - Practical	3	3	3	54	
7	Skill Component (Internship/Training/Workshop)	PT2SV1	Vocational Workshop-II (sheetfed & webfed Offset Printing)	Internal Evaluation	6	2	36	
TOTAL					30	25	450	30
Third Semester								
Sl. No	Type of course	Course code	Title of course	Exam duration	Credit per course	Contact hours per week	Total contact hours for the course	Total credits for the semester
1	General Component (Computer Applications)	CA3G1T	Desk top publishing (AOC)	3	6	6	108	
2	General Component (Energy and Environment)	EES3G1T	Environmental Impact Studies (T)	3	6	5	90	
3	Skill Component	PT3S1T	Digital Technology (T)	3	4	4	72	

4	Skill Component - Practical	PT3S1P	Digital Technology- Practical	3	3	3	54	
5	Skill Component	PT3S3P	Printing Image Generation (T)	3	5	5	90	
6	Skill Development Internship/Training/ Workshop	PT3SI1	Industrial Training-I/ Apprenticeship	External Evaluation	6	2	36	
TOTAL					30	25	450	30

Fourth Semester

Sl. No	Type of course	Course code	Title of course	Exam duration	Credit per course	Contact hours per week	Total contact hours for the course	Total credits for the semester
1	General Component (Computer Applications)	CA4G1T	Computer Hardware & Maintenance (AOC)	3	6	6	108	
2	General Component (Energy and Environment)	EES4G1T	Industrial Energy Management (T)	3	6	5	90	
3	Skill Component	PT4S1T	Print Finishing and Converting (T)	3	3	3	54	
4	Skill Component - Practical	PT4S1P	Print Finishing and Converting – Practical	3	2	2	36	
5	Skill Component	PT4S2T	Gravure & Non Impact Printing Technology (T)	3	3	3	54	

6	Skill Component	PT4S3T	Flexography and Screen Printing Technology (T)	3	3	3	54		
7	Skill Component - Practical	PT4S3P	Screen Printing Technology- Practical	3	1	1	18		
8	Skill Development (Internship/Training/Workshop)	PT4SI1	Industrial Training-II/ Apprenticeship	External Evaluation	6	2	36		
TOTAL						30	25	450	30

Fifth Semester

Sl. No	Type of course	Course code	Title of course	Exam duration	Credit per course	Contact hours per week	Total contact hours for the course	Total credits for the semester
1	General Component	PT5G1T	Green Printing and Quality Management in Graphic Arts (T)	3	4	4	72	
2	General Component	PT5G2T	Fundamentals of Advertising (T)	3	4	4	72	
3	General Component (Minor project/Seminar)	PT5GMN1	Minor project/Seminar	3	4	4	72	
4	Skill Component	PT5S1T	Speciality and Security Printing (T)	3	5	5	90	
5	Skill Component	PT5S2T	Printing Machine Maintenance (T)	3	5	5	90	

6	Skill Component - Practical	PT5S2P	Printing Machine Maintenance - Practical	3	2	2	36	
7	Skill Component (Internship/Training/Workshop)	PT5SI1	Industrial Training-III/ Apprenticeship	External Evaluation	6	1	18	
TOTAL					30	25	450	30
Sixth Semester								
Sl. No	Type of course	Course code	Title of course	Exam duration	Credit per course	Contact hours per week	Total contact hours for the course	Total credits for the semester
1	General Component	BOCG601	Entrepreneurship Development (AOC)	3	4	4	72	
2	General Component	PT6G1T	Print plant layout, Costing & Estimation (T)	3	4	4	72	
3	General Component	PT6G2T	Print Production Management (T)	3	4	4	72	
4	Skill Component	PT6S1T	Packaging Technology (T)	3	5	5	90	
5	Skill Component - Practical	PT6S1P	Packaging Technology- Practical	3	3	3	54	

6	Skill Component (Major Project)	PT6SMP1	Major Project	Viva voce (External Evaluation)	10	10	180	
TOTAL					30	25	450	30

SEMESTER-I

BOCG101- Listening and Speaking Skills in English

Credits: 4

72 Hrs

Objectives:

- To introduce the students to the speech sounds of English in order to enable them to listen to English and speak with global intelligibility.
- To enable the students to speak English confidently and effectively in a wide variety of situations.
- To help the students to improve their reading efficiency by refining their reading strategies.

MODULE – I

Speech Sounds: Phonemic symbols – Vowels – Consonants – Syllables – Word stress – Stress in polysyllabic words – Stress in words used as different parts of speech – Sentence stress – Weak forms and strong forms – Intonation

Sample activities:

- 1- Practice reading aloud. Use a variety of texts including short stories, advertisement matter, brochures, etc
- 2- Read out a passage and ask the students to identify the stressed and unstressed syllables.

MODULE – II

Basic Grammar: Articles - Nouns and prepositions - Subject-verb agreement - Phrasal verbs - Modals - Tenses - Conditionals – Prefixes and suffixes – Prepositions -Adverbs – Relative pronouns - Passives - Conjunctions - Embedded questions - Punctuation –Abbreviations-concord- collocations-phrasal verbs- idiomatic phrases

Sample activities:

- 1- Ask students to write a story/report/brochure, paying attention to the grammar.

MODULE – III

Listening: Active listening – Barriers to listening – Listening and note taking – Listening to announcements – Listening to news on the radio and television.

Sample activities:

- 1- Information gap activities (e.g. listen to a song and fill in the blanks in the lyrics given on a sheet)
- 2- Listen to BBC news/ a play (without visuals) and ask the students to report what they heard.

MODULE– IV

Speaking- Fluency and pace of delivery – Art of small talk – Participating in conversations – Making a short formal speech – Describing people, place, events and things – Group discussion skills, interview skills and telephone skills

Sample activities:

- 1- Conduct group discussion on issues on contemporary relevance.
- 2- Ask students to go around the campus and talk to people in the canteen, labs, other departments etc. and make new acquaintances.
- 3- Conduct mock interviews in class.
- 4- Record real telephone conversations between students and ask them to listen to the recordings and make the corrections, if any are required.

MODULE – V

Reading: Theory and Practice – Scanning – Surveying a textbook using an index – reading with a purpose – Making predictions – Understanding text structure – Locating main points – Making inferences – Reading graphics – Reading critically – Reading for research.

Books for Reference:

- 1- V.Sasikumar, P KiranmaiDutt and GeethaRajeevan, .Communication Skills in English.Cambridge University Press and Mahatma Gandhi University.
- 2- Marilyn Anderson, Pramod K Nayar and Madhucchandra Sen. Critical Thinking, Academic Writing and Presentation Skills. Pearson Education and Mahatma Gandhi University.

For Further Activities

1. A Course in Listening and Speaking I & II, Sasikumar, V.,KiranmaiDutt and Geetha Rajeevan, New Delhi: CUP, 2007
2. Study Listening: A Course in Listening to Lectures and Note-taking Tony Lynch New Delhi: CUP,2007.
3. Study Speaking: A Course in Spoken English for Academic Purposes. Anderson, Kenneth, Joan New Delhi: OUP, 2008

Course Outcomes:

- Describe sounds of English in order to enable them to listen to English and speak with global intelligibility.
- Speak English confidently and effectively in a wide variety of situations.
- Read efficiently by refining their reading strategies.

BOCG102- IT for Business

Credits: 4

54 Hrs

Objectives:

- The objective of the course is to help the student understand and appreciate the critical role of Information Systems in today's organizations

MODULE – I

Introduction to Information Technology: Information and Communication Technology (ICT), Information systems E-World - Computer Architecture: Input Hardware - Processing & Memory Hardware, Storage Hardware, Output Hardware, Communication Hardware - Concept of operating system - Understanding your computer customization configuring screen, mouse, printer.

MODULE – II

Word Processing Package: Introduction - Features - Word User Interface Elements; Creating new Documents; Basic Editing, Saving a Document; Printing a Document; Print Preview, Page Orientation - Viewing Documents; Setting tabs - Page Margins; Indents; Ruler, Formatting Techniques; Font Formatting, Paragraph Formatting; Page Setup; Headers & Footers; Bullets and Numbered List; Borders and Shading; Find and Replace; Page Break & Page Numbers; Mail Merging-Spelling and Grammar Checking; Tables; Formatting Tables;

MODULE – III

Spreadsheet Package: Introduction, Excel User Interface, working with cell and cell addresses, selecting a Range, Moving, Cutting, Copying with Paste, Inserting and Deleting cells, freezing cells, Adding, Deleting and Copying Worksheet within a workbook, Renaming a Worksheet. Cell Formatting Options, formatting fonts, Aligning, Wrapping and Rotating text, Using Borders, Boxes and Colors, Centering a heading, Changing row/column height/width, Formatting a Worksheet Automatically, Insert Comments, Clear contents in a cell. Using print Preview, Margin and Orientation, Centering a Worksheet, Using header and footer.

MODULE – IV

Advanced Features of Spreadsheet Package: All Functions in Excel, Using Logical Functions, Statistical functions, Mathematical etc. Elements of Excel Charts, Categories, Create a Chart, Choosing chart type, Edit chart axis - Titles, Labels, Data series and legend, Adding a text box, Rotate text in a chart, Saving a chart.

MODULE –V

Presentation Package: Ms-PowerPoint: Advantages of Presentation Screen layout creating presentation inserting slides adding sounds & videos-formatting slides -slide layout views in presentation -slide transition Custom animation Managing slide shows - using pen Setting slide intervals.

Books for Reference:

1. Antony Thomas, Information Technology for Office. Pratibha Publications Gini Courter & Annette Marquis. MS Office 2007: BPBP Publication.

Books for Reference:

1. Antony Thomas. Information Technology for Office. Pratibha Publications
- 2 Gini Courter & Annette Marquis. Ms-Office 2007: BPB Publications

Course Outcomes:

- Explain computer peripherals and fundamentals
- Define Office word, Excel, power point etc.

CA1G1T - COMPUTER FUNDAMENTALS

Credits: 2

54 Hrs

Objectives

- To facilitate the student with applied working knowledge of computers.
- To understand and make a knowledge in Office word, Excel, Power Point.

MODULE 1

16 Hrs

Introduction to computers: types of computers-characteristics of computers-five generations of modern computers. Classifications of digital computers-microcomputers-personal computers-workstations-portable computers-mini computers -mainframes-super computers - network computers,

MODULE 2

12 Hrs

Anatomy of a digital computer : functions and components of computer-CPU-control

unit-ALU- registers-addresses, memory units : types of memory-input devices-output devices-auxiliary storage devices.

MODULE 3 **10 Hrs**
Introduction to Office word- Word-creating and editing documents-menus,commands,toolbars and icons-formatting documents-creating tables-mail merge.

MODULE 4 **8 Hrs**
Excel:Spread sheet overview-Menus,toolbars and icons-creating worksheets-editing and formatting-excel formulas and functions-creating a chart-data forms, sort and filter.

MODULE 5 **8 Hrs**
PowerPoint:Introduction-menus,toolbars-text and formats-animation,art and sound-making the presentation templates.

Text Books:

1. “Fundamentals of Computer Science and Communication Engineering”, Alexis Leon, Mathew's Leon, Vikas Publishing House, New Delhi, 1998. (Unit I & II)
2. MS-Office Sanjay Saxena.

Course Outcomes:

- Working knowledge of computers.
- Knowledge in Office word, Excel, Power Point

EES1G1T –Renewable Energy Resources

Credits: 2 **36 Hrs**

Objectives:

- To explain concept of various forms of energy resources.
- To outline division aspects and utilization of renewable energy sources for both domestics and industrial applications.

Module 1 **12 hrs**
Energy: Types of resources and its characteristics, Energy resources and its distribution in India: Different types of power resources in India: Hydro, Nuclear, Thermal Power plants: brief idea. Indian Energy Sector; Energy Demand in India- Renewable Energy Programmes.

Module 2 **12 hrs**
Solar Energy, Solar Energy potential, solar radiation and Measurement, types of solar energy collectors. Applications: Solar water heating systems, Solar room heating, solar photo voltaic system-Solar energy conversion system-its different types.

Module 3 **12 hrs**
Wind Energy, Scope for Wind energy in India, Basic principles of wind energy conversion, Site selection considerations, Basic components of wind energy conversion system, Types of wind machines, Application of Wind Energy.

Module 4**12 hrs**

Biomass resources and Biogas energy, Biomass conversion technologies, Classification of biogas plants, Factors affecting yield of biogas plants, Properties & Characteristics of Biogas.

Module 5**6 hrs**

Other sources of renewable energy, Tidal Energy, Geothermal Energy, Magneto – Hydro Dynamic energy, Chemical energy Sources, Hydrogen Energy.

Text books:

1. Solar Energy Utilization, G. D. Rai, Khanna & Khanna, New Delhi.
2. Non-conventional energy source, G. D. Rai, Khanna & Khanna, New Delhi.
3. Sustainable Energy, J. W. Tester & M. Drate, Prentice Hall of India, New Delhi.
4. Principles of Power system, V. K. Meththa, S.ChandCo.Ltd., New Delhi.
5. Raikhy, P.S. and Parminder Singh, (1990): Energy Consumption in India – Pattern and Determinants, Deep and Deep, New Delhi.
6. Non-conventional Energy Resources and utilization by Er. R.K. Rajput

Course Outcomes:

- Define the concept of various forms of energy resources.
- Derive the utilization of renewable energy sources for both domestics and industrial applications.

PT1S1T - Fundamentals of Printing Technology**Credits: 5****90Hrs****Objectives:**

- To enable the students to acquire knowledge on importance of printing and various types of Printing Technologies.
- To study the fundamentals of printing, machines, materials and packing.

Module 1**18Hrs**

Printing: Definition - History and developments of Printing- from early stone print to latest innovations,- Printing Industries in india – printing methods – conventional and non-conventional methods.-definition- their principles and applications – press developments , platen press, flatbed cylinder press, Rotary press, off set.

Module 2**16Hrs**

Types of printing: intaglio printing (Gravure printing), - relief printing (letter press, flexography), planography (lithography, offset), screen printing, digital printing. Gravure products & markets. Letterpress press productions & markets, offset products & markets, Screen Printing, principles & markets

Module 3**14Hrs**

Printing materials: paper- Raw materials -paper manufacturing-pulping process-Mechanical, Chemical, sheet formation in machine (Fourdrinier machine), Fillers and loaders addition, Sizing, Calendering, coating and materials required. Varieties of paper and board, Understand paper sizes conventional and international.

Module 4**14Hrs**

Printing ink: Ink- Introduction, Components of ink- colorants(Pigments/ Dyes, Resins, solvents , additives-Plasticiser, Wax, drier,chelating agent, antioxidant, wetting agents, surfactants, defoamer and anti- skinning agents. Types. Manufacturing of ink- mining and milling equipments (3 roll,sand,&pebble mill) . Flow chart for ink manufacturing weighting, mixing, grinding, testing and packing.

Module 5**10Hrs**

Classification of print works - Prepress, Press, post press. Types of machines:- Composing machines: desktop publishing, computer, scanner, printer processing machines: film output machines, plate coating whirler, printing down-frame Printing machines: sheet- fed and web off-set (single, double, four color). Binding machines: Laminating machine, creasing machine, folding machine, centre pinning, section-sewing machine, perfect binding machine, cutting machine prepress, press, postpress operations

Text Books:

1. Letter Press Printing Part 1, 2, By C.S. Misra
2. Printing Technology By Adams, Faux, Rieber
3. Gravure process and technology GAA
4. Writing for the Web: A Practical Guide by Cynthia L. Jeney
5. Helmut Kipphan (Ed.) "Handbook of Print Media", 2001
6. What the printer should know paper – Lawrence A. Wilson – GATF Press
7. Printing Paper and Ink – Charles Finley.
8. The Printing Ink Manual – R.H. Leach and R.J. Pierce
9. What the Printer should know about Ink – Dr. Nelson Ra Eldred- GATF Press
Wilson andPIA/GATF

Course Outcomes:

- Explain importance of printing and various types of Printing Technologies.
- Define fundamentals of printing, machines, materials and packing.

PT1S2T - Graphic Design and Reproduction**Credits: 4****72 Hrs****Objectives**

- To introduce the study of design as a decision making discipline which controls all the production aspects of printing techniques.
- To acquire Knowledge of Typography, colours, optical science like reflection, transmission, photographic concept, optical density, Printing processes and different printing products.

MODULE 1**20 Hrs**

Design considerations.- Basic principles of design. harmony, rhythm, contrast, balance – (formal, informal), proportion, unity. Design steps- miniature, rough, comprehensive and finished layout. Typography and design. 4-line principle. Design terms; point, line, space, shape, mass, size, colour, tone, texture and pattern. Typeface, font, family of type, Type

measurements, spacing, unit and set width. Understand point system. Legibility and readability-importance.

MODULE 2

20 Hrs

Define photography and reproduction photography, originals used for reproduction, Understanding halftone screen, negatives and positives. Process Camera: Types, diff parts, functions. Colour temperature, Illuminants its classifications. Photographic emulsion, exposure, Film Processing- Developers Ingredients and there functions stop bath, fixing bath, Image density. Proof reading: - Proof reader- copy holder- proof reading marks- various proof.,

MODULE 3

16 Hrs

Colours- it's attributes. Colour wheel and relations of colour. Various colour schemes. Primary, secondary and territory colours. Colour Separation -Additive & subtractive, colour principles. Colour separation, filter factor, screen angles. Introduction to color printing – challenges in every day printing – color creation – viewing of colors – wavelength of colors – color perception – subjective color perception – factors influencing subjective perception - -theories of dot formation – Density, Tone, Contrast, Densitometry, Grey scale, Halftone screen, Screen ruling, Screen structure, Dot size and shape,

MODULE 4

16 Hrs

Book design, Magazine design, News magazine and news paper design. Design of stationary materials: commercial stationary- business forms, greeting and invitation cards, hand bills, direct mail folders, show cards, stickers etc. Other printed products: Leaflets, pamphlets, catalogues, brochures, booklets, Labels, manuals, cartons – packaging, Imposition terms: Imposition rules, sheet work, half sheet work, work and turn, work and tumble, regular and irregular imposition, long grain and short grain paper- Various imposition schemes of sheet work and half sheet work up to 32 pages. Types of originals; line drawings, continuous tone, black and white and colour originals. Selection of printing process for different job.

Text Books:

1. Art and Production – By NN Sarkar
2. Printing Technology – By Adam Faux Reiber
3. Introduction to printing and finishing – By Hugh Speirs
4. Professional prepress, printing publishing – By Frank J. Romano
5. Graphic reproduction photo graphic focal press London

Course Outcomes:

- Design as a decision making discipline which controls all the production aspects of printing techniques.
- Define Typography, colours, optical science like reflection, transmission, photographic concept, optical density, Printing processes and different printing products.

PT1S2P - Graphic Design and Reproduction Lab

Credits: 3

54Hrs

Objectives

- To gain skill to use the digital tools as a powerful means of communication for creation, modification & presentation.

1. Collection and study of various printed products.
2. Construction of a typeface
3. Various type families
4. Basic fourline principles of English alphabets
3. Layout preparation; miniature layout, preparing composite layouts, rough and finished layouts.
4. Prepare layout for title page,
5. Prepare layout for letter head,
6. prepare layout for visiting card,
7. Invitation cards, envelopes, and certificates.
8. Designing of monograms.
9. Designing of logos, trademarks
10. Print area calculation.

Text Books:

6. Art and Production – By NN Sarkar
7. Printing Technology – By Adam Faux Reiber
8. Introduction to printing and finishing – By Hugh Speirs
9. Professional prepress, printing publishing – By Frank J. Romano
10. Graphic reproduction photo graphic focal press London

Course Outcomes:

- Use the digital tools as a powerful means of communication for creation, modification & presentation.

**PT1SV1- Vocational Workshop-I
(Pre-Press Software Lab)**

Credits: 6

36 Hrs

Objectives

- To improve vocational skills in students.
- To familiarize with principle of different systems, their technology in printing industry.

Typesetting and Publishing:

List of Experiments:

1. Conventional Typesetting process and equipments, units of measurements

2. Computer Typesetting in Word processing software, use of various menus- character elements.
3. Typesetting routine: setting various kinds of work- text, table, and display work.
4. Typesetting using Page make-up software (Page Maker) , Creating Master page with Header, footer, page insertion, change of page set-up.
5. Typesetting for various publications, its page set-up.
6. Type setting for Book publishing.
7. Text flow and text wrap, manual/computer page make-up for book, magazine etc.
8. OCR technique for typesetting
9. Display composition, setting of coloured pages, with lines and tints,
10. Setting of geometric configuration, setting visiting card with the help of gridline, ruler setting.
11. Proof reading and marking
12. Taking final printout, use of various printers.
13. Imposition up to 32 pages (for centre stitched and section sewn) for upright and oblong pages, sheet work and half sheet work
14. Layout preparation

Course Outcomes:

- Improved Vocational skills
- Define principle of different systems, their technology in printing industry.

SEMESTER II
BOCG201 - Writing and Presentation Skills in English

Credits: 4

72 Hrs

Objectives:

- To make the students aware of the fundamental concepts of critical reasoning and to enable them to read and respond critically, drawing conclusions, generalizing, differentiating fact from opinion and creating their own arguments.
- To assist the students in developing appropriate and impressive writing styles for various contexts.
- To help students rectify structural imperfections and to edit what they have written.
- To equip students for making academic presentations effectively and impressively.

MODULE – I

Letter Writing: Letters - letters to the editor - resume and covering letters -parts and layout of business letters-business enquiry letters offers, quotation-orders and execution-grievances and redressal-sales letters-follow-up letters-status enquiry-collection letters-preparation of power of attorney for partnership- job application letters-resume-CV-reference and recommendation letters- employment letters.

MODULE II

Other types of Academic and business Communication (written):Seminar papers- project reports- notices - filling application forms - minutes, agenda-reports-essays.

MODULE – III

Presentation Skills: Soft skills for academic presentations - effective communication skills – structuring the presentation - choosing appropriate medium – flip charts – OHP – Power Point presentation – clarity and brevity - interaction and persuasion.

*Compulsory activity: PowerPoint presentations to be conducted by each student in class

MODULE IV

Non-verbal communication-Body language-Kinesics,Proxemics-Para language Channels- Barriers-Principles of effective communication

MODULE V

Online writing and Netiquette- Writing e-mails- use of language – writing for blogs – social media etiquette- professional networking online (LinkedIn, E-factor etc.)

Compulsory activity: Each student should create a blog and/or profile in LinkedIn.

Books for Reference:

- Marilyn Anderson, Pramod K Nayar and Madhucchandra Sen. Critical Thinking, Academic Writing and Presentation Skills. Pearson Education and Mahatma Gandhi University.
- Antony Thomas,Business Communication and MIS, Pratibha Publications.
- Bhatia R.C.Business Communication

- SaliniAgarwal Essential communication skill. Reddy P.N, and Apopannia, Essentials of Business communication.
- Sharma R.C,KRISHNA Mohan, Business Communication and Report writing Leod,M.C.,Management Information system

Course Outcomes:

- Explain fundamental concepts of critical reasoning and to enable them to read and respond critically, drawing conclusions, generalizing, differentiating fact from opinion and creating their own arguments.
- Develop appropriate and impressive writing styles for various contexts.
- Rectify structural imperfections and to edit what they have written.
- Making academic presentations effectively and impressively.

CA2G1T - DIGITAL ELECTRONICS& MICROPOCESSOR

Credits: 4

72Hrs

Objectives:

- To facilitate the student with the knowledge of Logic Systems, Circuits and Microprocessor
- Enabling the student to obtain the platform for studying Digital System, Microprocessor Architecture.

MODULE 1

8 Hrs

Number systems: decimal number system-binary number system- octal number system-hexadecimal number system- complements of numbers-signed and unsigned number representation - binary coded decimal-floating point representation of numbers.

MODULE 2

8 Hrs

Binary Arithmetic: Binary Addition, Decimal Subtraction Using 9's And 10's Complement, Binary Subtraction Using 1's And 2'nd Compliment, Multiplication And Division.Logic Gates: Truth Table, Properties And Symbolic Representation of NOT, AND,OR,NOR, NAND, EX-OR,EX – NOR GATES, NOR and NAND GATES As A Universal Gates.

MODULE 3

6 Hrs

Boolean Algebra: Laws And Identities Of Boolean Algebra, Demorgan's Theorem, Use Of Boolean Algebra For Simplification Of Logic Expression, Karnaugh Map For 2,3,4 Variable, Simplification Of Sop And Pos Logic Expression Using K-Map.

MODULE 4

8 Hrs

Combinational / Sequential Circuits: Half Adder, Full Adder, Parallel Adder, Half Subtractor, Full Subtractor, 4 Bit Binary Adder/ Subtractor, Multiplexer, Dmultiplexer, Decoder, Encoder, Parity Detector. Sequential Circuits : Introduction to Flip-Flop, Counters.

MODULE 5

6 Hrs

Architecture of 8086: Block Diagram Of 8086,Pin Diagram Of 8086, Minimum And Maximum Mode, Addressing Modes, Instruction Sets

Text Books:

1. ZyiKohavi, “Switching & Finite Automata Theory”, TMH, 2nd Edition
2. Morris Mano, Digital Logic and Computer Design”, Pearson
3. R.P. Jain, “Modern Digital Electronics”, TMH, 2nd Ed,
4. A Anand Kumar, “Fundamentals of Digital Logic Circuits”, PHI
5. Taub, Helbert and Schilling, “Digital Integrated Electronics”, TMH

Course Outcomes:

- Knowledge of Logic Systems, Circuits and Microprocessor
- Explain the platform for studying Digital System, Microprocessor Architecture.

EES2G1T - ENVIRONMENTAL STUDIES & HUMAN RIGHTS**Credits: 4****72Hrs****Objectives:**

- To create awareness about the importance of environment, its ecological balance and make him/her sensitive to the environment issues in every endeavor that he/she participates.

Module 1**20 Hrs**

Environmental studies, Definition, Scope and Importance – Need For Public Awareness – Forest Resources:- Use and Over - Exploitation, Deforestation. Mining, Dams and their Ground Water, Floods, Drought, Conflicts over Water, Dams – Benefits and Problems. Mineral Resources:- Use Effects on Forests and Tribal People. Water Resources:- Use and Over-Utilization of Surface and Exploitation, Environmental Effects of Extracting and Using Mineral Resources. Food Resources: World Food Problems, Changes caused by Agriculture and Overgrazing, Effects of Modern Agriculture, Fertilizer- Pesticide Problems, Water Logging, salinity. Land Resources:- Land as a Resource, Land Degradation, Man Induced Landslides, Soil Erosion and Desertification – Role of an Individual in Conservation of Natural Resources.

Module 2**10 Hrs**

Concepts of an Ecosystem – Structure and Function of an Ecosystem – Producers, Consumers and Decomposers – Energy Flow in the Ecosystem – Ecological Succession – Food Chains, Food Webs and Ecological Pyramids – Introduction, Types, Characteristic Features, Structure and Function of the Forest Ecosystem Grassland Ecosystem Desert Ecosystem Aquatic Ecosystems.

Module 3**10 Hrs**

Introduction to Biodiversity – Definition: Genetic, Species and Ecosystem Diversity – Biogeographical Classification of India – Value of Biodiversity: Consumptive Use, Productive Use, Social, Ethical, Aesthetic and Option Values – Biodiversity at Global, National and Local Levels – India as a Mega-Diversity Nation – Hot-Spots of Biodiversity – Threats to Biodiversity: Habitat Loss, Poaching of Wildlife, Man-Wildlife Conflicts – endangered and Endemic Species of India – Conservation of Biodiversity: In-Situ and Ex-Situ conservation of Biodiversity.

Module 4**14 Hrs**

Environmental pollution Definition – Causes, Effects and Control Measures of:- Air Pollution, Water Pollution, Soil Pollution, Marine Pollution, Noise Pollution, Thermal Pollution, Nuclear Hazards – Soil Waste Management:- Causes, Effects and Control Measures of Urban and Industrial Wastes – Role of an Individual in Prevention of Pollution – Pollution Case Studies – disaster Management:- Floods, Earthquake, Cyclone and Landslides.

Human Rights in Indian Constitution – Fundamental Rights

Text Books:

1. Masters, G.M., “Introduction to Environmental Engineering and Science”, Pearson Education Pvt., Ltd., 2nd Edition, 2004.
2. Miller, T.G. Jr., “Environmental Science”, Wadsworth Pub. Co.
3. Townsend C., Harper, J. and Begon, M., “Essentials of Ecology”, Blackwell Science, 2003.
4. Trivedi, R.K., and Goel, P.K., “Introduction to Air Pollution”, Techno- Science.

Course Outcomes:

- Explain the importance of environment, its ecological balance and make him/her sensitive to the environment issues in every endeavor that he/she participates.

PT2S1T - Printing Material Science

Credits: 4

72Hrs

Objectives:

- To acquire a good knowledge and skills of using printing materials like substrates-paper, polymer, foils etc. ink, consumables etc. These materials have different characteristics and properties.
- The subject deals with the materials and its science involved in testing and application.

Module 1

18Hrs

Polymers: Monomer and Polymer, Homopolymer and Copolymers, Classification of polymer – linear, branched, cross-linked, Polymerization- Addition, Condensation and Copolymerization. Types of Polymers—Plastic, Thermoplastic, Thermosetting plastic, Types-PE,PP,PVC,PET,PS, Polyester and Cellophane..Metallic substrates-Types: Aluminum, Gold, Silver Tin, Copper, lead, Nickel and other metals..- Multi layered substrates, Textile, wood, ceramic, glass, leather and other substrates-Properties and their suitability for various printing applications

Module 2

20Hrs

Colloids: Colloid materials and application in printing industry Surface tension, Contact angle. Acidity and Alkalinity: pH, pH Scale, ionic concentration. properties of ink -Viscosity, tack, color, gloss, rub resistance, length, dry characteristics, and fineness of grind. Natural drying methods and radiation curing—Infra Red, UV, Electron Beam, Microwave. Special inks: Heat set, quick set, fugitive, metallic, gloss, moisture set, magnetic, inks for ultra violet and infrared, florescent and their suitability in different applications, Eco-friendly inks, Ink Testing.

Module 3

16Hrs

Substrates: Paper- properties run-ability and printability - structural formation, 2 sidedness, grain direction- physical: GSM, caliper, bulk, porosity, smoothness, dimensional stability, curves, moisture content and Rh, tensile, tear internal bonding, fold endurance, stiffness, pick resistance. -optical: glosses, brightness, color, opacity-chemical: pH, ash content, Paper tester – Introduction -mechanical ,optical and chemical.

Module 4

18Hrs

Various plate production techniques. Offset plate making- Pre sensitized plates – positiveworking plates, Negative working plates. Gravure cylinder image preparation- Electronic engraving, copper plating and polishing, rinsing cylinders, bellard shell cylinders, Flexo plate preparation – Rubber plates, photo polymer plates. Silk screen preparation – Screen frame, fabric, mesh count, strength and opening. Stencil preparation – Hand cut and photo stencils. Various CTP Plate production

Text Books:

1. Materials in Printing Process: L.C. Young
2. Engineering Chemistry: Jain & Jain
3. Science and Technology of Printing Materials: Prakash Shetty (MJP Publisher)
4. Printing ink Manual
5. Hand Book of Paper Technology

Course Outcomes:

- Skills of using printing materials like substrates-paper, polymer, foils etc. ink, consumables etc. These materials have different characteristics and properties.
- Describe the materials and its science involved in testing and application.

PT2S2T - Printing Machineries

Credits: 5

90Hrs

Objectives:

- To develop a deep knowledge in sheet fed offset machine.
- To understand Web Offset Press etc.

MODULE I

28Hrs

Sheet fed offset machine

Different types of sheet fed offset machine, their models, and sizes, mechanical and operational features. feeder section:- stream feeder, single sheet feeder-, back separation and front separation. piletable, sheet separation unit, Feed board assemblies, frontlay(types)-sidelay(types), infeed section. sheet detectors-mechanical types, electromechanical types, photoelectrical, pneumatic types. No sheet detectors-early or fast detectors, twisted sheet detectors. Double sheet detectors. Feeder Printing Unit : plate cylinders- Its characteristics, , blanket cylinder and its characteristics-various types. Shore durometer. impression cylinder and its characteristics, packing important. dampening unit - its accessories-conventional and continuous dampening system-types of rollers, inking unit-its accessories, rollers and arrangements- pyramidal and drum inking, delivery unit; sheet transfer system, sheet decurler-joggers-delivery board arrangement- short and extended. Anti-set off spary equipments. Sheet fed offset: - Single color- multi color-sequence of printing colors.

MODULE II

24Hrs

Pre- make-ready and make-ready in sheet fed offset machine

Preparing the press for printing job- inking system wash up, cleaning the dampening system, checking roller contact, cleaning cylinders, circumferencial and lateral setting, checking the

tension of feed board belt and delivery chains, lubricating the press, checking the sheet - thickness, squareness, seasoning paper for printing, make ready on pile – setting the feeder and delivery board, mounting the plates, putting ink in the ink duct and charging rollers, ink supply regulation, preparing the dampening solution, dampening regulation, taking pass sheet, trial impression, register the print, clear impression,

MODULE III

24Hrs

Introduction and classification of Web Offset Press: Introduction to web offset machines: Structure and types of press, sections of web offset press-infeed, printing unit, delivery unit. Type of presses: blanket to blanket, common impression, inline press, stacks press. Make ready and feeding Unit : Infeed- types of reel stand, automatic splicer, preparing a splice, dancer roller, reel breaking, image and web control, side lay, box tilt, web tensioning, pre- set feeder, motorized side lay control. Web printing unit, Inking system, Dampening system. construction of printing unit for multi color, sheet transfer system between units, various drier systems between units, plate cylinder, plate lock up mechanism, blanket, blanket lock up mechanism and impression cylinders, cylinder pressure and timing .Delivery unit: Web folding principles, types of folders, cut off length, pin-less folder, automatic setting of powder spray length, infra red, ultra violet, microwave and glass flame driers, chilling roller- refrigeration system, sheet cleaners. Auxiliary equipments.

MODULE IV

14Hrs

Troubles related to paper their remedies-piling, linting, picking, blistering, see through ; Troubles related to ink and their remedies- hickey, chalking, show through, emulsification, ink misting, ink flying. Troubles related to dampening solution and their remedies, Troubles related to blanket and their remedies smashes, glazing, Troubles related to printing press- plate blinding, scumming and their remedies

Text Books:

1. The Thames & Hudson Manual of Screen Printing, Tima, Mara Thames & Hudson, Ltd. London.
2. Screen Printing Technique Albert Kosloft Sings of the Times, Publishing Co. Cincinnati, OSA
3. Screen Printing History & Process Rita, Gilbert Holt, Rinehart & Winston, Newyork, Chicago.
4. Screen Printing Water Based Technique Roni, Hennins Watson-Gufill Publication Newyork.

Course Outcomes:

- Knowledge in sheet fed offset machine.
- Define Web Offset Press.

PT2S2P - Printing Machineries – Practical

Credits: 3

54Hrs

Objectives:

- To develop a practical knowledge in Sheet fed and web offset machine.

List of Experiments:

1. Familiarization of printing equipments and conventional methods of printing.

2. Setting the feeder board, lays, and delivery of sheet fed offset machine.
3. Mounting the plate
4. Setting inking system
5. Setting Dampening system
6. Taking single color print from sheet fed offset machine
7. Taking multi color print from sheet fed offset machine
8. Preparation of imposition for Web-offset Printing
9. Study of pre-make ready & make-ready operations of web offset machine.
10. To obtain single color print from web offset machine.
11. To obtain multi color print from web offset machine.

Text Books:

1. The Thames & Hudson Manual of Screen Printing, Tima, Mara Thames & Hudson,Ltd. London.
2. Screen Printing Technique Albert Kosloft Sings of the Times, Publishing Co. Cincinnati, OSA
3. Screen Printing History & Process Rita, Gilbert Holt, Rinehart & Winston, Newyork, Chicago.
4. Screen Printing Water Based Technique Roni, Hennins Watson-Guftill Publication Newyork.

Course Outcomes:

- Practical knowledge in Sheet fed and web offset machine

PT2SV1- Vocational Workshop-II (sheetfed & webfed Offset Printing)

Credits: 6

36 Hrs

Objectives:

- To impart a good knowledge and skills in web offset printing machines, their operational units.

List of Experiments:

1. Study of detailed technical specification of important sheetfed& web offset machines
2. Study of tools, equipment required in work shop.
3. Cleaning and lubrication of machine.
4. Study of registration unit
5. Clamping of plate on plate cylinder of machine.
6. Setting of rollers of Inking and Dampening unit.
7. Paper feeding unit.
8. Pre make ready operations on machine.
9. Make ready operations on machine.

10. Ink cleaning and washing of dampeners.

Course Outcomes:

- Skills in web offset printing machines, their operational units.

SEMESTER III

CA3G1T - Desk Top Publishing(AOC)

Credits: 6

108Hrs

Objectives:

- To make a better understanding of desktop publishing applications.

Module 1

27Hrs

DTP Application 1: Introduction- the file menu, the tools, drawing lines & shapes. Inserting pictures and shapes, filling colors, text effects, working with layers, filters. Creating design pattern, Photoshop presentations- static & dynamic presentation. Using internet explorer in Photoshop- the web gallery. Creating animations using image ready, creating animations and presentations. Tips and tricks in image editing.

1. How to make smooth curved lines ?
2. Extract an object from a given picture?
3. Create a new picture. Make it 300 pixels high and 400 pixels wide. The resolution should be 72 pixels/inch.
4. How to create your very own animated beating heart in Photoshop?
5. How to make falling objects that will work as seamless backgrounds and have objects falling at different paces in Photoshop?

Module 2

27Hrs

DTP Application 2: An overview, menus and tools, Drawing- lines, shapes. inserting – pictures, objects, tables, templates, Adding special effects, exploring drawings, outlining&fillingobjects, inserting symbols & Clip arts. Working in Corel draw presentation -adjusting the position, resizing, positioning merging, color shades & shadows working with advanced effects, special interactive effects. Creating business cards, pamphlets, banners, newspapers, books. Shortcut keys.

1. Create a 4 page newsletter with PageMaker
2. Prepare a magazine on PageMaker
3. Use various setup options while preparing the material for print
4. Import images and create a newspaper

Module 3

27Hrs

DTP Application 3- An introduction, basics menus & tools Guides & rulers. Drawing tools. Fills & outlines. Working with- text, paragraphs, tabs & indents, graphics, tables. Importing & exporting story editing & printing. Tips & Shortcut keys. Creating book works-introduction-building booklets, completing the book.

1. Create a 6 page newsletter with Quark Express
2. Prepare a magazine
3. Use various setup options while preparing the material for print
4. Import images and create a newspaper

5. Use special features such as Drop letters (Text), Cut outs (images) etc. while preparing material for print

Module 4

27Hrs

DTP Application 4- An introduction, basics menus & tools. Guides & rulers. Drawing tools. Fills & outlines. Working with- text, paragraphs, tabs & indents, graphics, tables. Importing & exporting, story editing & printing. Tips & Shortcut keys. Creating book works-introduction-building booklets, completing the book.

1. How to insert a picture in the existing image background?
2. Create a 3D text in Corel Draw
3. Create an advertisement for a Textile company in Corel
4. Design a business card for a company embed photo in it
5. Design a banner for a marriage function.

Text Book(s):

1. Hardware Bible: Winn IL RochTechmedia.
2. Desk Top Typography QuarkXPress
3. Page Maker 6.0: BPB Publication.

Course Outcomes:

- Use Designing softwares to create personal and/or business publications following current professional and/or industry standards.
- Use critical thinking skills to independently design and create publications.

EES3G1T - Environmental Impact Studies

Credits: 6

90hrs

Course Objectives:

- To have an idea of the impacts of manmade activities on the environment.
- To have an understanding of the possible remedies in this regard.

Module 1

14 Hrs

Social issues and the environment– Urban Problems Related To energy – Water conservation, Rain Water Harvesting, Watershed Management – Environmental Ethics:- Issues and Possible Solutions

Module 2

28 Hrs

Climate Change, Global Warming, Acid Rain, Ozone Layer Depletion, Nuclear Accidents and Holocaust, Consumerism and Waste Products. Impacts of climate change: Extreme weather events, Temperature Rise, Sea Level rise, Coastal Erosion and landslides; future impacts of global warming, global warming and the hydrological cycle, climate change impact on ecosystems and agriculture.

Module 3

24Hrs

Impact of Developmental Activities and Land use, surface water, Air and Biological environment, Air pollution sources, of Air pollution Impact. Impact of development Activities

on Vegetation and wildlife, environmental Impact of Deforestation – Causes and effects of deforestation.

Module 4

24 Hrs

Possible remedies of global warming- various mitigation and adaptation measures taken/proposed to combat global warming; National and International policies to combat global warming and climate change-UNFCCC Kyoto Protocol, Role of countries and citizens in mitigating Global Warming

Text books:

1. Y. Anjaneyulu, *Environmental Impact Assessment Methodologies*, B.S. Publication, Sultan Bazar, Hyderabad. 2002
2. J. Glynn and Gary W. Hein *Environmental Science and Engineering*, Prentice Hall Publishers 2000
3. Suresh K. Dhaneja – S.K., *Environmental Science and Engineering*, Katania & Sons Publication. New Delhi. 1998
4. Dr H.S. Bhatia *Environmental Pollution and Control*, Galgotia Publication (P) Ltd, Delhi, 1996
5. Current trends in Global Environment by A.L. Bhatia (2005) Energy Sources
6. Global Warming – A Very Short Introduction, Mark Maslin, oxford.
7. UNFCCC & IPCC reports (www.unfccc.int & <http://www.ipcc.ch/>)
8. Global Warming The Complete Briefing - John T Houghton Cambridge press
9. Climate Change: A Multidisciplinary Approach, by William James Burroughs, Cambridge press
10. Contemporary climatology-Robinson, Taylor and Francis group

Course Outcomes:

- Explain the impacts of manmade activities on the environment.
- Define the possible remedies in this regard.

PT3S1T - Digital Technology

Credits: 4

72Hrs

Course Objectives:

- To be able to describe various process of digital printing and consumables required for the process.

Module I

14 Hrs

Digital Colour Management: Colour reproduction, source and destination profile, obtaining profile, adjusting profile, device calibration, process of calibration of devices, device dependent

profile, device independent colour space, colour lookup tables, PS colour processing, CIE based colour space.

Digital Proofing: technologies used for digital proofing, hard proofing, soft proofing, halftones simulation (dot proofing), remote proofing, preflight.

Module II

14 Hrs

Colour systems Desktop Computer System- Processor, Basic component. Display System- Raster scan and random scan display, colour display, TFT, LED. bit depth and colour production, File format of digital images- TIFF, PDF, JPEG, EPS. Image compression, Zip. Colour correction, Colour separation, basic steps of separation, Colour Look-up table Desktop Publishing Softwares - Word processing, page make -up, graphic software-pixel based and vector based, other softwares, elements of vector image, features and applications of softwares

Module III

8 Hrs

Digital Workflow .File Output Items to check for output, link file and problems, fonts, EPS file editing, avoiding output problem, PS interpreter and raster image processing (RIP) and its function. Basic concept of colour management. Image proofing, Colour printer, Post script printer, Image setter, Plate setter. ctp.

Module IV

12 Hrs

Digital printing technologies overview of digital printing Defining digital printing processes- electrostatic printing, ink-jet (thermal, piezoelectric, continuous), phase change, computer-to-press (direct imaging DI) etc. Variety of Applications: customization and direct marketing, Print-on-Demand (POD), variable data printing (VDP), wide-format printing, specialty applications (particularly of inkjet) like 3D printing. Trends in Digital Printing: evolution of technologies, promising developments (e.g. Xerox iGen3, HP Z-series inkjet printers with in-built spectrophotometer etc), future trends, eco-friendliness.

Text Book(s):

1. Professional Pre-press, Printing & Publishing by Romano. Prentice Hall
2. Digital Colour Printing by B Chakravarty. Asian Books P Ltd

Course Outcomes:

- Describe various processes of digital printing and consumables required for the process.

PT3S1P - Digital Technology- Practical

Credits: 3

54Hrs

Course Objectives:

- To familiarize with various process of digital printing and consumables.

List of Experiments:

1. Colour specification and colour management tools
2. Calibration of input system
3. Calibration of output system

4. Digital proofing
5. Digital printing- electrostatic
6. Inkjet printing-thermal
7. Inkjet printing-drop on demand
8. Inkjet printing-phase change
9. Inkjet printing- continuous jet
10. Problem and remedies of Digital printing machine
11. Booklet printing
12. Variable data printing

Text Book(s):

1. Professional Pre-press, Printing & Publishing by Romano. Prentice Hall
2. Digital Colour Printing by B Chakravarty. Asian Books P Ltd

Course Outcomes:

- Explain various processes of digital printing and consumables.

PT3S2T - Printing Image Generation

Credits: 5

90Hrs

- To be able to describe various process of Printing Image Generation

Module I

28 Hrs

Light sensitive coating materials, Plate materials - zinc, aluminum, bass, copper, steel, chromium. Graining of plates .Anodized aluminum, plate washes. Light sources for plate making-spectral data for various light sources, metal halide, mercury lamps, pulsed-xenon, laser. Treatment of non image areas-desensitizing gum, chemistry of gum Arabic, other natural& synthetic gums. General processing sequence for a negative working plate. General processing sequence for a positive working plates. Types of positive and negative working plate.

The photomechanical principle, Surface plates - albumin, presensitized, wipe-on, and photopolymer; Deep-etch plates; Bimetal plates; and Direct image, Projection, and Electrostatic plates. Laser exposed plates .control on tone values in plate making-GATF star target,GATF dot gain scale. CTP, types of CTP plates, CTP architecture.

Module II

22 Hrs

Flexographic plates - Introduction. Rubber flexo plates, making process-Advantages and disadvantages of rubber plates.. Photopolymer flexography plates. Solid photo polymer plates. Liquid photo polymer plates. Making process. Base material for photo polymer plates. Advantages and Disadvantages of photo polymer,

Module III

20 Hrs

Methods of cylinder preparation -diffusion etch, direct transfer, electromechanical process, laser cutting. Well formation - lateral hard dot wells. Direct contact wells, conventional gravure wells. Cylinder design parts of gravure cylinder, forms of gravure cylinder-integral shaft, mandrel. Copper plating and polishing. Reuse of cylinders. Ballard shell cylinders. - 00staging and etching. Cylinder proofing-soft copy proofs, single sheet proofing system, direct digital

proof, diazochrome proofs, overlay proofs. Chemical engraving methods-advantages, disadvantages.

Module IV

20 Hrs

Stencil making. Hand painted stencil. Introduction, block out methods (selective process) -was resist method. Knife cut stencils. Stencil cutting tools and cutting techniques - Swirel knife. Computerized stencil cutting, Photo-mechanical stencil making-indirect photo stencils, direct photo stencils, direct/indirect photo stencils. Quality control in photo stencil making.

Text Books:

Heidelberg DI Press - Manual

Chemistry for Graphic Arts- Dr. Nelson R.Eldred

Offset plate making - Robert F. Reed.

Printing Technology 3rd Edition - Adams, Fax &Rieber

Screen Process Printing - John Stephens

Sheet fed Offset Press Operating - Lioyd.P.Dejidas

Flexography Premier - Donna C. Mulvihill

Stripping - Harold L. Peck

Gravure Process And Technology - GAA

Selecting the Right Litho Plate – BPIF.

Course Outcomes:

- Describe various process of Printing Image Generation

PT3SI1- Industrial Training-I/ Apprenticeship

Credits: 6

36 Hrs

Course Objectives:

- The main objective of Industrial Training is to expose the students to actual working environment and enhance their knowledge and skill from what they have learned in the college.
 - After the completion of semester, the student will undergo minimum of two weeks Internship Programme in an Industry, having a good exposure in the concerned skill (Established at least two years prior), capable of delivering the skill sets to the students. At the end of the Internship, the students should prepare a comprehensive report.

Course Outcomes:

- Explain the actual working environment and enhance their knowledge and skill from what they have learned in the college.

SEMESTER IV
CA4G1T - COMPUTER HARDWARE & MAINTENANCE(AOC)

Credits: 6

108Hrs

Course Objectives:

- To create knowledge of computer hardware and ways of maintaining.
- To explain the working of computers
- To identify different components of computers and explain their uses.
- To familiarize with computer hardware and ways of maintaining.

Module 1

22Hrs

Module I: Study of PC/AT motherboards: Block diagram architecture of motherboard. CMOS setup and their features, configuring extended, expanded memory, cache memory, shadow memory, EDO RAM etc.

Module 2

22Hrs

Buses: Study of Bus Standards: Brief study of various bus standards: ISA, EISA, VL, PCI, PCMCIA etc, Display Cards & Monitors: Description of different types of displaycards
Monitors: CRT construction and working, vertical stage, horizontal state, 9 pin input type - monitor, block diagram & description of color monitor.

Module 3

24Hrs

Drive Systems: Various parts of FDD, types of floppies, geometry of floppy, various recording formats, interface signals, floppy drive alignment track 0, and adjustment, formatting of floppies, Types of hard disk drives, IDE, EIDE, SCSI, Geometry of hard disk drive, Interface signal, tape drives, DVD, introduction to RMD, various concepts of hard disk drives, types of formatting, partitioning and handling of hard disk drive.

Module 4

40Hrs

Types of memory: Physical Memory, Memory modules:- SIMMs, DIMMs, RIMMs, Brief study of conventional base memory, Upper memory area, High memory area, Extended memory, Expanded memory. General Troubleshooting and Maintenance, Type of maintenance: Preventive and break down maintenance, assembly and disassembly of PC and its various parts, startup problems, run problems their identification and remedy, Problem of keyboard, displays, printers, FDD's, HDD's, SMPS motherboard, their identification and remedy

Students should be provided with hands-on experience on

1. Hardware assembling.
2. Trouble shooting.
3. Installation of operating system and other softwares.
4. Ensure security of systems and so on.

Text Books:

1. B RAM - Fundamentals of microprocessors and micro computers
2. Lotia and Nair- Modern all about motherboard.

3. Lotia and Nair- Modern all about Hard Disk.
4. R S. Gaonkar- Micro processor Architecture, Programming and applications with 8085.
5. Venugopal and Ravikanth- Introduction to assembly language programming in 8086.
6. Scottmuller with Creigzacker- Upgrading and repairing PCs.

Course Outcomes:

- Describe about computer hardware and ways of maintaining.
- Explain the working of computers
- Explain different components of computers and explain their uses.
- Define computer hardware and ways of maintaining.

EES4G1T –Industrial Energy Management

Credits: 6

90hrs

Course Objectives:

- To understand the importance of Energy Conservation.
- To understand the methodology of energy management.
- To understand energy audit and conservation technics.

Module 1

20 Hrs

Energy – Power – Past & Present Scenario of World; National Energy Consumption Data – Environmental Aspects Associated With Energy Utilization. Energy Crisis – Causes and Consequences – Remedial Measures– Impact of Energy Consumption and Production on Environment with illustrations.

Module 2

20Hrs

Energy Planning and Energy Conservation – Meaning, Objectives and Importance – Energy Management – Meaning, Objectives and Importance – Recent Developments – Energy Auditing – Energy Accounting – Energy Pricing and Taxes.

Module 3

30 Hrs

Energy Auditing: Need, Types, Methodology And Barriers. Role of Energy Managers. Energy Audit: Preliminary Energy Audit, Detailed Energy Audit, Investment Grade Energy Audit, Industrial Energy Audit, Utility (Services) Energy Audit, Commercial Energy Audit, Residential Energy Audit. Instruments for Energy Auditing. Energy Audit Strategies: Monitoring and Control, Questioning the Need, Minimizing the Need of End Use, Minimizing the Losses, Operating the Equipment at Optimum Efficiency, Operating the Most Efficient Equipments from Set of Equipments, Proper Maintenance of the Equipment, Fuel Substitutions, Quality Control and Recycling.

Module 4

20 Hrs

Energy Conservation Act 2001 and related policies, Schemes of Bureau of Energy Efficiency (BEE). Energy Savings Opportunities. LED Lighting and Scope of Energy conservation in Illumination.

Text Books:

1. Energy Manager Training Manual (4 Volumes) Available At [Www.Energymanager Training.Com](http://www.Energymanager Training.Com), A Website Administered By Bureau Of Energy Efficiency (BEE), A Statutory Body Under Ministry Of Power, Government Of India, 2004.
2. Witte. L.C., P.S. Schmidt, D.R. Brown, "Industrial Energy Management And Utilisation" Hemisphere Publ, Washington, 1988.
3. Callaghn, P.W. "Design And Management For Energy Conservation", Pergamon Press, Oxford, 1981.
4. Dryden. I.G.C., "The Efficient Use Of Energy" Butterworths, London, 1982
5. Turner. W.C., "Energy Management Hand Book", Wiley, New York, 1982.
6. Murphy. W.R. And G. Mc KAY, "Energy Management", Butterworths, London 1987.

Course Outcomes:

- Explain the importance of Energy Conservation.
- Derive the methodology of energy management.
- Define the energy audit and conservation techniques.

PT4S1T - Print Finishing and Converting

Credits: 3

54 hrs

Course Objectives:

- To know various finishing operations, equipments, Quality control and use of consumables.

Module I

(12 hours)

Introduction to Print finishing. Binding – Classification-styles. Styles of cover - Quarter, Half, Three quarter and full binding, hard bound books,.Binding tools and Equipment -Laying press, Standardizing press, Sewing frame, Glue pot, Board cutting., Binding Materials: Covering materials of all types, preparation and treatment in covering. Miscellaneous materials such as thread cords, tapes, mull, eyelets etc..Binding Paper sizes, Planning impositions, Advantages and application–

Module II

(14 hours)

Pre-forwarding and Forwarding Operations-In-board and out-board forwarding, Cutting, Trimming.Folding – Types of Folding – Folding-topaper, Folding-to-Print, Lump Folding. Creasing, Gathering, Collating, Collating mark, Inserting, Attaching of Plates and Maps. Perforating – Types of Perforation, Punching and Drilling, Eyeleting, Index cutting, Numbering – Horizontal Numbering and Vertical Numbering. Die cutting and Slitting Operations.Edge Decoration, Types of Edge Decoration – Coloring the edge, Painting, sprinkling, Gauffering, Marbling and Edge Guilding.

Folding Machine and its operation – buckle folding, knife folding and combination folding Stations. Stitching – Side Stitching and Saddle Stitching. Sewing, Types of Sewing – French Sewing, Tape Sewing or Sewing on Tapes, Raised Cord Sewing or Flexible Sewing, Recessed Card Sewing or Sawn-in Sewing, Two on & All along Sewing, Overcast Sewing.

Module III

(14 hours)

Introduction, Principles of adhesives,Gluing the back, rounding and backing objects. Care and precautions reducing swelling in the back, head bands - hand made and machine made.Lacing-

in, back lining preparation. Attaching boards and split-board work. Securing methods-Wire stitching – saddle stitching, Side stitching, Wire stitching machine, French tape, Chord and Whip sewing. Different kinds of sewing, End Papers – Kinds and purposes, Guillotine machines-manual, semi automatic, automatic and programmed machines. Trimmers - three side trimmers, difference between three side trimmer and guillotine, and continuous trimmer.

Module IV

(14 Hrs)

Finishing and converting process- Embossing & Debossing, Blind Embossing, Gold Blocking /Foil Stamping, Lettering, Laminating, varnishing Mechanical binding- .- Spiral, Wire-o, Post binder, Thong, Ring metal and plastic comb binding. Case Binding – preparation of case and casing-in. Automation in Binding -Gathering machines. Book back gluing machine. Rounding and backing machine. Back lining machine. Case making machine. Back forming machine. Pressing machine. Perfect binding machine.

Text Books:

01. Binding & Finishing Mendiratta Printek Publication, New Delhi
02. Binding & Finishing GATF
03. Binding & Finishing Geoff & Potter Blue Print
04. Modern Book Binding Alex J. Vaughan -----
05. Finishing Processes in Printing A.G. Martin Focal Press Ltd., London
06. Manual For Book Binding Arther W. Johnson Thames and Hudson

Course Outcomes:

- Explain various finishing operations, equipments, Quality control and use of consumables.

PT4S1P - Print Finishing and Converting – Practical

Credits: 2

36hrs

Course Objectives:

- To familiarize with various finishing equipments, Quality control and use of consumables.

List of Experiments:

1. Study of binding room equipments, binding room tools and materials.
2. Jogging, counting Folding techniques & methods.
3. Care & handling of guillotine machine, safety precaution.
4. Making of end papers.
5. Methods of sewing. flexible, double flexible, sawn in sewing, tape sewing, two- on –sewing, over cast sewing, machine sewing.
6. Adhesive binding.
7. Sewing on tapes, cords.
8. Making of hard bound books.
9. Study of binding machines.
10. Edge decoration of hard case book, and print finishing.

11. Acquaintance with modern bindery equipments.

Text Books:

01. Binding & Finishing Mendiratta Printek Publication, New Delhi
02. Binding & Finishing GATF
03. Binding & Finishing Geoff & Potter Blue Print

Course Outcomes:

- Define various finishing equipments, Quality control and use of consumables.

PT4S2T - Gravure & Non Impact Printing Technology

Credits: 3

54 Hrs

Course Objectives:

- A better understanding of different gravure printing machines, their operational units.
- To develop awareness about various digital work flows and technologies in printing and also
- Helps to impart an idea about the various scope and Developments of printing technology

Module 1

16Hrs

History of gravure printing, Gravure products and markets, publication gravure and product gravure. Gravure cylinder preparation; various methods like diffusion etch, direct transfer and electromechanical, Laser cutting, Chrome plating and its advantages, Defects in Gravure cylinder preparation and remedy, cell configuration, cylinder correction, well formation and variables. Balancing and re-use of cylinders. Doctor blades; types, mounting, distance, angle etc. Gravure impression roller; function, covering and pressure

Module 2

14Hrs

.Gravure press: Principle, kinds, sizes, classification, sheet fed and web fed. Operational features of gravure machine, colour printing, registration control devices, folders, inking unit, doctor blade, drying system. Mounting of cylinder, minor corrections, pre-proofing, gravure package printing, changing and storage of gravure cylinders. Trouble shooting printing defects with their causes and remedies like Drag out, haze, skipping, picking, screening, snow flaking, volcanoes. Gravure substrates; paper, non-paper or filmic, foils.

Module 3

16Hrs

Electrophotography, Ionography, Magntography, Thermography, Electrography, Photography, X-graphy, Hybrid printing systems, Long format digital ink jet printing. Types of Inkjet Technology, The technology and advantages, Nozzle head, Ink supply, transport mechanism, Software, UV Ink, safety features. Click OK to Print, Computer to Ink jet Printer- The process and requirements RAM, Buffer series of steps from command to printing, substrate used for inkjet printing- papers types and quality, compatibility of ink and paper, properties of inkjet paper, Other substrates.

Module 4

8 Hrs

CTF, -types, workflow, film materials. CTP- Designs, Plate substrates, workflow, imaging systems CTP for flexographic printing, Computer to cylinder for Gravure printing, Computer to Screen for Screen Printing, CTCP.

Text Books:

1. H Kippan ,*Hand book of Print Media-* Heidelberg.
 3. Grehard A Northmann, Non Impact Printing.
 4. Martin Graham, Non Impact Printing, Pira International, UK, 1992
 5. Harald Johnson, Understanding Digital Printing, Thomson Publishers, Boston, 2005
 6. Phil Green, Understanding Digital Color, GATF and PIRA, USA
 7. Gravure process and technology, GAA.
 8. Printing Technology, Adams, Faux, Rieber.
 9. Herbert L.W. (1985) “Gravure and flexographic Printing Presses” *Converting Technology Co,USA.*
- Ray Blair and Thomas M.D. (1991) “Gravure Process and Technology” GAA, USA.
- Harry and Smith (1994) “Modern Gravure Technology, A Literature Review” *Pira International,UK.*

Course Outcomes:

- Describe different gravure printing machines, their operational units.
- Explain about various digital work flows and technologies in printing
- Define various scopes and Developments of printing

PT4S3T - Flexography and Screen Printing Technology

Credits: 3

54 Hrs

Course Objectives:

- To create an understanding of features & application of Flexography and Screen printing technologies.

Module 1

14 Hrs

Introduction to Flexography: Definition, history, market ,Flexography Plate Making: Both rubber flexographic plates and polymer plate making. Kinds and methods of preparation, care and handling, Defects in flexography plate making and remedy. Mounting of flexography plates. Latest trends in flexo surface preparation.

Module 2

12Hrs

Flexography Printing; Principle, kinds, configuration-stack, common impression, in-line, tension control, sizes of flexo machines. Basic parts of flexo machine, fountain, anilox inking, reverse angle doctor blade, plate cylinder, impression cylinder, registration control and drying system. Safety devices and quality control - Trouble shooting printing defects with their causes and remedies like pin holing, halo, etc.

Module 3

14 Hrs

History of Screening Printing, Stencils – knife cut stencils, photo stencils – Indirect stencil systems, Direct photo stencil systems, capillary systems, Direct/Indirect photo stencil systems. Screening materials. Screens – multifilament, mono filaments, Selecting mesh material, stretching screen fabric to frame, screen preparation, screen reclamation – Trouble shooting clogged screens. Care and storage of screens. Image transfer – The squeegee, Squeegee

considerations, squeegee preparation, hardness categories of squeegee blades, Variety of blade shape and application. On contact printing, Off contact printing.

Module 4

14 Hrs

Screen printing; Introduction to manual printing, make ready and printing on semi-automatic machines, Automatic machine, cylindrical screen, 3D surface printing. screen inks, its kinds, Screen ink uniqueness – U.V inks and ink drying methods.

Text Book(s):

1. Printing Technology by Adam, Faux, Reiber
2. Hand Book of Print Media, Published by Heidelberg

Course Outcomes:

- Define the features & application of Flexography and Screen printing technologies.

PT4S3P - Screen Printing Technology- Practical

Credits: 1

18 Hrs

Course Objectives:

- To familiarize with features & application of Screen printing equipments.

List of Experiments:

1. Safety precautions in lab.
2. Study of different tools, materials and equipments used in screen printing
3. Preparation of screen stencil in direct photographic stencil process and reproduction through it
4. Preparation of screen stencil in indirect photographic stencil process and reproduction through it
5. Preparation of screen stencil in direct-indirect photographic stencil process and reproduction through it
6. Printing a various substrates i. LDPE, ii. HPDE, iii. Paper, iv. Aluminium foil.
7. Make-ready and printing on screen printing machine.
8. Printing of multicolour job on screen printing machine.
9. Printing of 3D surface on Screen printing machine

Text Book(s):

3. Printing Technology by Adam, Faux, Reiber
4. Hand Book of Print Media, Published by Heidelberg

Course Outcomes:

- Deals with features & application of Screen printing equipments.

PT4SI1- Industrial Training-II/ Apprenticeship

Credits: 6

36 Hrs

Course Objectives:

- The main objective of Industrial Training is to expose the students to actual working environment and enhance their knowledge and skill from what they have learned in the college.
 - After the completion of semester, the student will undergo minimum of two weeks Internship Programme in an Industry, having a good exposure in the concerned skill (Established at least two years prior), capable of delivering the skill sets to the students. At the end of the Internship, the students should prepare a comprehensive report.

Course Outcomes:

- Understand the actual working environment and enhance their knowledge and skill from what they have learned in the college.

SEMESTER V

PT5G1T - Green Printing and Quality Management in Graphic Arts

Credits: 4

72hrs

Course Objectives:

- To know about bio-degradable and non-biodegradable materials, use of biochemical based material and thus encouraging greener production with limiting pollution.

Module 1

18 Hrs

Green Printing : Overview, Definition, Biodegradable material, Necessity, Advantage, Printing wastes – characteristics, type, life cycle of waste, pre-press, press and post-press wastes, Material input and typical waste output in Printing Industry, List of chemical in Printing industry activities, Waste segregation, Petrochemical need in Printing industry. Toxic compound, Environmental issues in printing facilities- emission to air, waste water, Voc emission, Sources of VOC, Environmental effect of VOC, Steps to reduce voc emission, Avoiding or minimizing VOC loss. Eco friendly printing paper - types– recycled paper, wood free paper, etc. Eco friendly inks – types - vegetable based ink, bio inks etc. Ink recycling Eco friendly offset plates – low chemical , chemical free, etc. recycling of plates. Eco friendly chemicals – IPA substitutes, bio chemicals etc. Eco friendly production - waste reduction, waste management.

Module 2

18 Hrs

Implementing secondary control, Biochemical based cleaning solvents Biochemical enhance worker safety. Waste reduction recycling and reuse. Pollution Prevention and Cleaner Production. Particulate matter Reduction, removal, collection, Contribution by products, Waste material, Chemical hazards, Inhalation, hazardous material management hazards-prevention and control. Environment Management System – accounting concepts, data collection, evaluation and process operations, ISO 14000 and Life – cycle concepts.

Module 3

18 Hrs

Quality Management for Graphic Arts: Introduction: Definition, basic elements, characteristics, Quality Control as an attitude and management tool, quality control strips, management's responsibility, organization and personnel functions, TQM models. Quality Control procedures and methods. Brief Introduction to ISO: 9000 (2000), ISO: 14000, QS: 8000 standards. Statistical Process Control: Introduction, SPC tools.

Module 4

18 Hrs

Process capability indices, DOE, OVAT, OEE, Case study and problems. Team approach: introduction, basic assumption, quality improvement teams, quality team effort, quality-oriented projects, Establishing Quality control programme in different departments of printing organization. Data collection, principles and analysis. Measurement of critical print variables.

Text Book(s):

1. Kipphan Helmut, "Hand Book of Print Media", Springer, Germany, 2001.
2. Jones Gary A, "Air Pollution engineering Guide for Graphic Arts Industry", GATF, 1993.

3. Bhat K.S., "Total quality Management", Himalaya Publication House
4. John Geis A and Paul Addy L, "Materials handling for the Printer", GATF Press, Pittsburgh, 1999
5. Herschel L.A., "Implementing TQM in Graphics Art", Pira and GATF, Pittsburg, 1995.

Course Outcomes:

- Explain about bio-degradable and non-biodegradable materials, use of biochemical based material and thus encouraging greener production with limiting pollution.

PT5G2T - Fundamentals of Advertising

Credits: 4

72hrs

Course Objectives:

- To learn about fundamentals of advertising and get knowledge about advertising types, design and corporate advertising etc.

Module 1

18 Hrs

Introduction to Advertising: Advertising Theory, advertising as a tool of communication, Role of advertising in public relations. Functions of advertising, Benefits of advertising, Advertising as a Marketing Tool, Advertising as a PR Tool, Advertising Theories. Role of printing presses in advertising.

Module 2

16Hrs

Consumer product advertising; Industrial product advertising; Government advertising/ public service advertising; Financial advertising; Industrial or corporate advertising. Advertising management: The publication advertising department. Media concept, structure of media, media characteristic publication media, TV and radio, direct mail and POP, out of home and other media.

Module 3

18 Hrs

Advertising design, layout, visualization, principles of advertising design, contribution of visual elements, what to picture, how to choose color, test of a good layout, production of print advertising, copy testing criteria, types of copy testing, validity and reliability of copy test.

Module 4

20Hrs

Types of Advertising agency and types of services offered, structure of ad agencies, planning and development, creative process and tactics, media planning, Advertising Medias – television networks, magazines, newspapers, radio, selection and buying media time and space. Support media internet, interactive medias, out-door, in-store, direct mail, miscellaneous and transit advertising, case studies.

Text Book(s):

1. Wells William, "Advertising", Prentice Hall, New Delhi, 2002.
2. Wilmshurst Jhon and Mackay Adrian, "Fundamentals of Advertising", MGH, Boston, 1999.

3. Varshney R.L. and Gupta S. L, “Marketing Management”, Sultan Chand and Sons, New Delhi, 2004.
4. Jefkins Frank and Yadin Daniel, “Advertising”, Prentice Hall, New Jersey, 2000.
5. Philip Kotler, “Marketing Management Analysis, Planning, Implementation and Control”, PrenticeHall of India Private Limited, New Delhi, 2000.

Course Outcomes:

- Describe about fundamentals of advertising and get knowledge about advertising types, design and corporate advertising etc.

PT5GMS1- Minor project/Seminar

Credits: 4

72hrs

Course Objectives:

- To train the students in preparing project reports and to face reviews and viva voce examination regarding printing technology.

Each batch comprising of 3 to 5 students shall design, develop and realize a Print media and publishing area. Each student shall submit a project/Seminar report at the end of the semester. Product/work has to be demonstrated for its full design specifications. Innovative concepts, reliability considerations and aesthetics / ergonomic aspects taken care of in the project shall be given due weight. Viva-voce will be conducted by a panel of three subject experts.

Course Outcomes:

- Knowledge in preparing project reports and to face reviews and viva voce examination in printing technology.

PT5S1T - Speciality and Security Printing

Credits: 5

90hrs

Course Objectives:

- Students will be able to know specialty items special equipments and adjustment of machineries.
- To understand Security printing in packaging

Module 1

18Hrs

Continuous stationery forms and application: Integrated cards, affixed cards, OMR sheets, Multi part mailer and flyers. Materials for continuous stationery forms: Paper mapilitho, art, MICR grade, sticker, coated, carbon less, thermal. Designing, printing & finishing process for continuous stationery forms: Machine configuration job make ready. Speciality printing processes Work flow, Machineries, construction, substrate requirements, substratetreatments.

Module 2

18Hrs

Security printing materials, Types of security inks-Speciality inks -UV, water based, polymer, metallic, nano, thermo setting inks., Infrared inks, photo chromatic inks, security papers-

MICR, NMICR, uncoated, toner fused paper, Special papers, Techniques In Security Printing- Watermark –Technique, Micro printing, Security threads, Magnetic ink, Anti - copying marks , Fluorescent dyes. Serial number-Application of serial numbering, Serial number arithmetic, Magnetic ink character recognition, Different printing processes- Intaglio, Letterpress, Dry offset, Simultan presses, Intaglio (print making).

Module 3

18 Hrs

Cheques, security paper, Security colour, Printing process, Quality control, products of security printing- Paper currency, Securities, Postage stamps, other products of security printing. Security features of various products- Clear window, Polymer substrate, See – through registration device, Shadow image, Intaglio Printing, Background Print (offset), Micro printing, Fluorescent Ink properties, Design, Printing, Security, Security printing application- Government and corporation document, Brand protection and asset management. Printing of financial documents and value documents, Accreditation bodies.

Module 4

18Hrs

Security printing in packaging- Security packaging, Facts on counterfeiting, Security printing, Barcode and reader, Scanner/ Symbology interaction, Publishing barcode types, Material types- Poly asset – Extra durable, Poly break – Destructible, Poly check, Tamper evident seals, Poly void, Barcode uses, Retail barcodes, Packaging barcodes, Current developments, Barcodes for non – retail labels. Hologram, Types of Hologram- Dot matrix, CLR (convert laser readable) image, Computer Synthesized 2D/3D images, True Colour images, E – BEAM & 12,000 dpi, Holographic reconstruction process, Hologram recording process. QRcode, RFID tag.

Text Book(s):

1. Narayanan R., “Computer Stationery and MICR Cheque Production”, Association for Research and Development in Printing, Madras, 1988.
2. Warner Richard D, Adams Richard M, “Introduction to security printing”, PIA/GATF, Pittsburgh, 2005.
3. EIRI Board of consultants and engineers, “Hand Book of Printing Technology”, Engineers India research Institute, New Delhi.

Course Outcomes:

- Know specialty items special equipments and adjustment of machineries.
- Explain Security printing in packaging

PT5S2T - Printing Machine Maintenance

Credits: 5

90hrs

Course Objectives:

- To make the students understand about mechanism, maintenance and relevant technical specification of various machines in the printing industry.
- To provide necessary information about various machines along with repair and maintenance of these machines.

Module 1

18 Hrs

Maintenance concept, philosophy, objective, Economic life cycle of machine maintenance instructions, status of machines, understanding of machine drawings and manuals. Factors affecting size, types, approaches, classifications. Mechanical Drivers: chains, sprockets, roller chain types, Belt & pulleys, cams-types, types of roller follower, gears advantages, factors affecting the selection of gears, gear failure-wear & tear.

Module 2

18 Hrs

Tools, equipments and material for maintenance, maintenance kit. Systems of Maintenance: predictive, preventive, periodic, planned/ scheduled, corrective, break down and its merits and demerits, application of system in a plant. Lubrication system: lubrication and maintenance, force feed, gravity feed, centralized lubrication, lubricants used, oils, grease, synthetic, solid, their kinds, grades and properties, periodicity, colour coding. Lubricating system safety precautions, lubricating film conditions.

Module 3

18 Hrs

Bearings: Brushing & bearing selection, classification, lubrication, oil-less bearings. Bearing failures, causes and cure, bearing damages. Pneumatics: Introduction, advantages, Maintenance of pump and compressor; various elements compressor type. Centralized and decentralized compressed air system. Accessories of compressors. Hydraulics in printing, Advantages & Disadvantages, Potential areas of machine wear and tear.

Module 4

18 Hrs

Installation of machine, repair technique, overhaul, Annual maintenance contract. Comprehensive maintenance contract. Zero maintenance concept. Maintenance and troubleshooting. Sample problems and their rectification; Mis-registration, gear streaks, roller streaks, irregular sheet feeding, plate wear, etc.

Text Book(s):

1. Rizzo Kenneth E, "Total Production Maintenance", GATF, USA, 2002.
2. Khurmi R.S., "Machine Design", S. Chand and Company, New Delhi, 2002.
3. Garg H.P., "Industrial Maintenance", S. Chand and Company, New Delhi, 1999.

Course Outcomes:

- Understand about mechanism, maintenance and relevant technical specification of various machines in the printing industry.
- Information about various machines along with repair and maintenance of these machines.

PT5S2P - Printing Machine Maintenance- Practical

Credits: 2

36hrs

Course Objectives:

- To provide necessary practical exercises print machineries repair and maintenance.

List of Experiments:

1. Study of different functions of machine through drawings.
2. Introduction to Tools, equipments and material required for maintenance.

3. Study of detailed technical specification of important printing machines
4. Study of different lubrication systems, lubrication points and lubricants
5. Periodic maintenance of machine parts
6. Preparation of maintenance schedule for preventive maintenance.
7. Preparation of maintenance schedule for predictive maintenance
8. Rectification of faults like, mis-registration, irregular sheet feeding etc..
9. Maintenance of pneumatic and hydraulic parts and equipments
10. Maintenance of electrical panel board, relay, contactors.
11. Maintenance of pre-press and post-press equipments.

Text Book(s):

1. Rizzo Kenneth E, "Total Production Maintenance", GATF, USA, 2002.
2. Khurmi R.S., "Machine Design", S. Chand and Company, New Delhi, 2002.
3. Garg H.P., "Industrial Maintenance", S. Chand and Company, New Delhi, 1999.

Course Outcomes:

- Knowledge in print machineries repair and maintenance

PT5SI1- Industrial Training-III/ Apprenticeship

Credits: 6

18 hrs

Course Objectives:

- The main objective of Industrial Training is to expose the students to actual working environment and enhance their knowledge and skill from what they have learned in the college.
 - After the completion of semester, the student will undergo minimum of two weeks Internship Programme in an Industry, having a good exposure in the concerned skill (Established at least two years prior), capable of delivering the skill sets to the students. At the end of the Internship, the students should prepare a comprehensive report.

Course Outcomes:

- Know the actual working environment and enhance their knowledge and skill from what they have learned in the college.

SEMESTER VI
BOCG601- Entrepreneurship Development (AOC)

Credits: 4

72 Hrs

Course Objectives:

- To familiarize the students with the concept and overview of entrepreneurship with a view to enhance entrepreneurial talent.
- To impart knowledge on the basics of entrepreneurial skills and competencies to provide the participants with necessary inputs for creation of new ventures.
- To explore new vistas of entrepreneurship in 21st century environment to generate innovative business ideas

Module – I

To make the students understand about entrepreneurs and different classifications. Entrepreneur and entrepreneurship - Definition; traits and features; classification; Entrepreneurs; Women entrepreneurs; Role of entrepreneurs in India.

Module – II

Create an awareness about EDP. Entrepreneurial development programme concept; Need for training; phases of EDP; curriculum & contents of Training Programme; Support systems, Target Groups; Institutions conducting EDPs in India and Kerala.

Module – III

General awareness about identification of project financing new enterprises. Promotion of a venture; opportunity Analysis Project identification and selection; External environmental analysis economic, social, technological and competitive factors; Legal requirements for establishment of a new unit; loans; Overrun finance; Bridge finance; Venture capital; Providing finance in Approaching financing institutions for loans.

Module –IV

To identify different opportunities in small business. Small business Enterprise - Identifying the Business opportunity in various sectors - formalities for setting up of a small business enterprise - Institutions supporting small business enterprise - EDII (Entrepreneurship Development Institute of India), SIDO (Small Industries Development Organization NSIC (National small Industries Corporation Ltd.) NIESBUD (National Institute for Entrepreneurship and Small Business Development) Sickness in small business enterprise causes and remedies

Module – V

To understand about a project report relating to a small business. Project formulation - Meaning of a project report, significance, contents, formulation planning commissions guidelines for formulating a project report - specimen of a project report, problems of entrepreneurs, case studies of entrepreneurs.

Books for Reference:

1. Clifton, Davis S. and Fylie, David E., Project Feasibility Analysis, John Wiley, New York, 1977.
2. Desai A. N., Entrepreneur and Environment, Ashish, New Delhi, 1990.
3. Drucker, Peter, Innovation and Entrepreneurship, Heinemann, London, 1985

4. Jain Rajiv, Planning a Small Scale Industry: A guide to Entrepreneurs, S.S. Books, Delhi, 1984
 5. Kumar S. A., Entrepreneurship in Small Industry, Discovery, New Delhi, 1990
- McClelland, D. C. and Winter, W. G., Motivating Economic Achievement, Free Press, New York, 1969.

Course Outcomes:

- A practical insight for becoming an entrepreneur.
- Define the latest programs of the government authorities in promoting small and medium industries.
- Knowledge regarding how to start new ventures.

PT6G1T - Print plant layout, Costing & Estimation

Credits: 4

72 Hrs

Objectives:

- To get a clear idea about Print plant layout.
- To be able to make costing & estimation in printing materials

Module I

18 Hrs

Printing press layout- Determining plant requirement site planning, new facility designing. Layout essentials- Direct product flow, Physical separation expansion. Importance of material movement. Few suggested design for hypothetical cases. Approachability of machines for service etc. Availability of service such as water, drainage, electric supply etc. Fundamentals of Foundation design. Vibration free

Module II

18 Hrs

Receiving shipping, waste paper, & trash removal, ware housing and storing, maintenance, production office, flammable solvent storage, ink mixing, storage and pumping. Typical settings to be done on a sheet- fed and web press machine. Facility specification- Prepress area, Sheet fed press room, web offset press room, roll paper storage area, bindery, finishing, mailing & pumping

Module III 18 Hrs

Cost accountancy & its subjects, relationship of cost & financial accounting, cost accounting & management accounting, costing as a basis for estimating, the purpose of cost accounting, advantages of cost accounting, installation of costing systems, costing system for printing industry & related problem. The concept of cost, Analysis of cost, elements of cost, The costs which are to be ascertained. Procedure of linking costs with cost centers & cost units, Methods of cost finding. Overhead – classification. Allocation & apportionment, Over head absorption rates & problem.

Module IV

18 Hrs

Purpose and functions of estimating from printer point of view & customers point of view. Difference between costing & estimating. Qualifications of an estimator, working environment, estimator's tools, estimating paper – selection of paper, allowance for waste, allowance for trimming, weight of loose sheets, weight of a reel of paper. Estimating ink – Ink consumption formula, Ink allowance for spoilage, Estimating binding materials – Board

requirement, estimating covering materials, estimating sewing thread, estimating stitching wire, estimating adhesives. Terms and conditions – approved by AIFMD.

Text books:

1. Printing Plant & Facility Design- GATF

Course Outcomes:

- Idea about printing plant layout.
- Make costing & estimation in printing materials

PT6G2T - Print Production Management

Credits: 4

72hrs

Course Objectives:

- To understand the concepts of scheduling and its importance in the printing Industry.
- To attain complete knowledge of the various applications of inventory and project, management with respect to the Printing Industry.

Module 1

18 Hrs

Introduction, Organization Structure – Sole Proprietor, Partnership, Limited Company, Administrative office routine, Forms used Processing orders. Business Environment – Printing Industry in India & Abroad. Impact of globalization & IT. Management– Nature scope and importance of Management, Functions of Management–Scientific, Management.

Module 2

18 Hrs

Production and operations Management – Locations and Layout of plant, Maintenance management. Quality assurance, Total quality management (TQM), ISO. Inventory Management - Definition & purpose, Inventory classification, EOQ, Materials handling & Warehousing.

Module 3

18 Hrs

Work flow and organizational structure in a printing press. Network Models - Introduction, PERT & CPM models, Network construction, Problems, Resource analysis & allocation, Replacement analysis, Application & case studies. Human resource management: Manpower planning – recruitment, selection, Training performance appraisal Wage and salary administration.

Module 4

18 Hrs

Marketing Management – Marketing and its functions, distribution channels, salesmanship and advertising. Financial Management- Nature, Scope objectives and functions of Financial Management. Cost Accounting: Cost concept, cost sheet, B.E.P. Analysis, Cost reduction and cost control. Depreciation - Introduction to different methods and their comparison.

Text Book(s):

1. R.D. Aggarwal, “Organization and Management”, Tata McGraw Hill Publishing Ltd., New Delhi
2. T.A. Saifuddin, “Management Aspects of Printing Industry”, 1st Edition, NirmalSadanadn Publishers, Mumbai,
3. G.G. Field, “Printing Production Management”, Graphic Arts Publishing,
4. Ruggles, “Printing Estimating Principles and Practices”, Delmer Publication.

5. Joseph G. Monks, "Operations Management – Theory and Problems", McGraw Hill Intn'l Ltd., 2003.

Course Outcomes:

- Explain the concepts of scheduling and its importance in the printing Industry.
- Define various applications of inventory and project, management with respect to the Printing Industry.

PT6S1T - Packaging Technology

Credits: 5

90Hrs

Objectives:

- To impart basic knowledge of packaging technology to enable the student to apply the same in his professional career.

Module 1

18 Hrs

Definition and function of Packaging, Packaging criteria and packaging development. Types of packaging material and printing techniques for different materials. Elements of Package Design. Markings on package – Handling marks, routing marks, information marks. Tests on Package – Mechanical test – Climatic test –, Fungus resistance test, Shelf life, Corrosion – Types, cause, Classification of corrosion prevention methods. Desiccants. Cushioning Materials – Functions, properties, Classifications

Module 2

18 Hrs

Classifications; Rigid and flexible packaging. Classification of packaging- by shape. Heavy packaging (container, wooden packs medium carton box, woven bag, can, basil, and tub.) Light packaging (flexible packaging, bottles, paper container). By method of packaging – (Gas packaging – MAP & CAP, vacuum packaging, aseptic packaging, gas bulb packaging, moisture proof, blister, skin, shrink packaging, stretch wrapping, strip packaging, Aerosol packaging – working principle.) By contents (food packaging, cosmetic packaging, drug packaging, liquid packaging, clothing packaging, powder packaging, dangerous packaging.).

Module 3

18 Hrs

Carton style. Folding cartons – Production steps, types, relevant properties of paper board for carton, Manufacturing process and flow chart for carton. Definition and types of CFB's, Board construction – Liners and Flutes. Box style and their economics. Manufacturing process with diagrams. Role of plastic in packaging, thermal properties-mechanical properties-barrier properties-surfaces and addition-optical characteristics-electrical characteristics, types .- ,adhesives types. Role of glass in packaging. Injection blow moulding, Extrusion blow moulding, Extrusion. Injection Molding, Vacuum forming – Drape forming, Snap back forming, Plug Assist forming. Pressure forming. . Thermo form/fill/seal- Horizontal machine, Vertical machine. Heat sealing-sealing methods-bar/thermal, impulse, band, hot wire/hot knife sealing, ultrasonic, friction, hot gas & contact, radiant, dielectric , magnetic, induction, solvent sealing

Module 4

18Hrs

Futuristic trends in packaging. Environmental implications of packaging – recycling, Pyrolysis. Legal aspects in packaging. Developments in food processing & packaging, Introduction to

food packaging technology. Future trends in food packaging- Anti- microbial packaging systems-food safety Antimicrobial packaging –Antimicrobial agents. Antimicrobial mechanisms- Technical factor for antimicrobial system. Oxygen scavenging packaging-package inserts-Intelligent packaging- Applications and technologies- Freshness and microbial indicator, Time temperature indicator, gas concentrator indicator.

Text Books:

1. Modern Food Packaging – By Indian Institute of Packaging
2. Packaging Technology Educational Volume – 1 – By Indian Institute of Packaging
3. Packaging Technology Educational Volume – 2 – By Indian Institute of Packaging

Course Outcomes:

- Idea in packaging technology and apply the same in his professional career.

PT6S1P - Packaging Technology- Practical

Credits: 3

54Hrs

Objectives:To Know about designing and preparation of package designs.

List of Experiments:

1. Study and operation of various packaging machines.
2. Study of test conducted on packages.
3. Designing and Preparation of various flexible packages
4. Preparation of layout - Parallel tuck-in, Reverse tuck- in, Auto-lock bottom
5. Preparation of try and box
6. Designing& preparation of package best suited for given object.
7. Study of manufacturing of various types of corrugated boards.
8. Designing and preparation of designs of paper bags.

Text Books:

1. Modern Food Packaging – By Indian Institute of Packaging
2. Packaging Technology Educational Volume – 1 – By Indian Institute of Packaging
3. Packaging Technology Educational Volume – 2 – By Indian Institute of Packaging

Course Outcomes:

- Design and prepare package designs

PT6SMP1- Major Project

Credits: 10

180 Hrs

Objectives:

- To develop the ability to solve a specific problem in printing industry right from its identification and literature review till the successful solution of the same.
- To train the students in preparing project reports and to face reviews and viva voce examination.

- The aim of the project work is to deepen comprehension of principles by applying them to a new problem which may be the design and fabrication of a device for a specific application, a research project with a focus on an application needed by the industry/society, a computer project, a management project or a design project.

Each batch comprising of 3 to 5 students shall design, develop and realize a Print media and publishing area. The student will submit a synopsis at the beginning of the semester for approval from the departmental committee in a specified format, thereafter he/she/gp will have to present the progress of the work through seminars/presentations and progress reports. The progress will be monitored through seminars/presentations and progress reports. The students may be allowed to do Industrial Major Project on-site.

Fully software/simulation projects are not allowed. Each student shall submit a project report at the end of the semester. The project report should contain the design and planning documentation including the Bill of Materials and test results. Product/work has to be demonstrated for its full design specifications. Innovative concepts, reliability considerations and aesthetics / ergonomic aspects taken care of in the project shall be given due weight.

Those who are doing the project in any industries, A project report of the industrial training shall be submitted at the end of semester and a viva-voce will be conducted by a panel of three subject experts.

Course Outcomes:

On Completion of the project work students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology

MODEL QUESTION PAPERS- FIRST SEMESTER

B.VOC. DEGREE EXAMINATION

First Semester

Model Question Paper

BOCG101 - LISTENING AND SPEAKING SKILLS IN ENGLISH

Time-Three Hours

Maximum-80 Marks

PART A

Answer any 10 questions. Each question carries 2 marks.

1. Describe an auto rickshaw.
2. What is intensive reading?
3. What is the difference between a definite article and an indefinite article?
4. What is rising tone?
5. What is an index?
6. What is a phrasal verb?
7. Who is a good reader?
8. What is an embedded question?
9. Write a few phrases which can be used to express mild disagreement.
10. What are the three functions of conjunctions?
11. What are grammatical words?
12. What are people skills?

PART B

Answer any 6 questions. Each question carries 5 marks.

13. What is telephone etiquette?
14. Who is an active listener?
15. Prepare a vote of thanks to be presented for the residents' association meeting.
16. Write short note on conjunctions.
17. What are the features of fluent speech?
18. You are a project leader. Introduce the members of your team to a visiting dignitary.
19. Write a short note on reading for a purpose.
20. What are the steps in cancelling and rescheduling appointments?
21. Describe the qualities of your college to your friends.

PART C

Answer any 2 questions. Each question carries 15 marks.

22. Discuss 'the importance of social media' with two other participants in a group discussion.
23. a) Write a conversation with your panchayath member, complaining about the lack of streetlights.
b) Write a model interview you make with an actor.
24. Write a note on subject-verb agreement.
25. What are the roles and functions in a group discussion?

B.VOC DEGREE EXAMINATION, Model Question

First Semester

BOCG102- IT for Business (AOC)
(For B.Voc. Degree in Printing Technology)
[2018 Admission]

{Regular}

Time 3 Hrs

Maximum: 80 Marks

Part A: Theory Assessment- Short Answer Type

Answer *any 5* questions.

4 marks each.

(5*4=20)

1. Write a note on types of memory
2. Explain about the Hard disk drive in a brief
3. Write about the features of MS-Power point
4. What are the steps to insert a picture in MS-word document
5. Explain about ICT
6. Describe about mail merge
7. Explain the components of a CPU
8. Explain the contents of a worksheet

Part B: Skill Assessment- Practical (60 marks)

(Record:10, Theory/ Procedure/ Design: 10, Activity/Neatness:20, Result: 10, Viva: 10)

9. Calculate Net Salary in MS Excel.

Empno	Name	Basic Salary	HRA	DA	PF	Net Salary
1001	Elina Thomas	5000				
1002	Shyam Mathew	4500				
1003	Richard Mathew	6000				
1004	StanyCyriac	6500				
1005	Riju S	4500				
1006	Priya Nair	4000				
1007	Simi Jose	3700				

HRA - 25% of Basic Salary

DA - 35% of Basic Salary

PF - 15% of Basic Salary
Net Salary = Basic Salary + HRA+ DA – PF

B.VOC DEGREE EXAMINATION,.....

First Semester

CA1G1T- COMPUTER FUNDAMENTALS
(For B.Voc. Degree in Printing Technology)

[2018 Admission]

{Regular}

Time 3 Hrs

Maximum: 80 Marks

Part A (Very short answer type)

Answer any 10 questions.

2 marks each.

1. Name any four input devices
2. Difference between RAM & ROM
3. Name any 2 components of MS word screen
4. Name any 2 data types used in MS-Excel
5. What is secondary memory?
6. Give a note on ALU
7. Give a brief note on laser printer
8. What is Rows, columns ,cells in a worksheet
9. Write a note on animations in a power point presentation
10. What are the types of PC?
11. Discuss the advantages and disadvantages of CRT monitors?
12. What is difference between workbook and worksheet in Excel?

Part B - Short answer (Not to exceed 60 words)

Answer any six questions

5 marks each

13. Write a note on types of memory
14. Discuss on about mouse in a brief
15. Explain about the Hard disk drive in a brief
16. Write about Non-Impact printers in a brief
17. Write about the features of MS-Power point
18. What are the steps to insert a picture in MS-word document
19. Write a note on PC's
20. Explain the components of a CPU
21. Explain the contents of a worksheet

Part C (Long essay)

Answer any two questions.

15 marks each

22. Write a notes on the types of printers in detail
23. Discuss about the features and components of the MS-Word
24. Explain in detail about the different classification of computers
25. With a neat diagram explain the organizations of a computer

B.VOC DEGREE EXAMINATION, Model Question
First Semester
EE1G1T–RENEWABLE ENERGY RESOURCES
(For B.Voc. Degree in Printing Technology)
[2018 Admission]
{Regular}

Time: Three Hours

Maximum: 80 Marks

Part A (Very short answer type)

Answer any 10 questions.

2 marks each.

1. Make a note on Energy.
2. Define TSR.
3. What are the applications of wind energy.
4. What you mean by Anaerobic Digestion.
5. What is a Fuel Cell.
6. Distinguish between Pyranometer and Pyrheliometer.
7. Distinguish between Renewable and Non-Renewable
8. What are the major energy resources in India?
9. What are the causes of wind flow?.
10. What are the differences between beam and diffuse radiation?
11. Name different biogas plants.
12. List down any four uses of solar energy.

Part B - Short answer (Not to exceed 60 words)

Answer any six questions

5 marks each

13. What are the technologies for Biomass conversion?
14. Site selection considerations for wind energy conversion systems.
15. Discuss the principle and working of a solar pvcell.
16. Briefly explain the workingof a solar water heating system.
17. What is meant by geo-thermal energy? Write down its advantages and disadvantages.
18. Explainthe basic componentsof wind energy conversion system.
19. Give some examples of each with its application.
20. Which are the two types of biogas plants that are used in India?
21. Explain FPC?

Part C (Long essay)

Answer anytwo questions.

15 marks each

22. Explain Solar energy conversion system
23. Make an essay about Different types of biogas plants.
24. What are the Types of wind machines and Application of Wind Energy?
25. Write down the mechanism of tidal energy conversion.

B.VOC. DEGREE EXAMINATION, Model Question

First semester

PT1S1T- Fundamentals of printing technology

(For B.Voc. Degree in Printing Technology)

[2018 Admission]

{Regular}

[Time:3 Hour]

[MaximumMarks : 80]

PART – A [short answer questions]

1. What you mean by the term printing?
2. List out impact and non-impact printing.
3. What is the use of blanket cylinder in offset?
4. Write about platen press?
5. What is the need of antiskinning agent?
6. Define calendaring?
7. Differentiate single color & multicolor printing
8. Function of plate coating whirler?
9. Difference in sheet-fed and web-fed printing machine?
10. Define the principle of offset printing?
11. How can you say the gravur printing is expensive one?
12. Differences between single-color offset & multi-color offset?

PART – B (5mark*6)

13. What is the difference between paper & paperboard? Explain with examples.
14. State the role of stone printing in the history of printing.
15. How screen printing differ from letterpress?
16. State the purpose of in-feed unit in printing machine. How it differs in sheet-fed and web offset?
17. “To print over cloth, screen printing is commonly used”. Justify.
18. “Digital printing belongs to non-impact printing”. Follow the statement.
19. “Printed products are in wide variety”. Give examples and explain.
20. Discuss about quality testing and packing of ink?
21. Describe the press development?

PART-C (15 mark*2)

22. Paper manufacturing with necessary diagram?
23. Categorize the printing process based on their basic principle?
24. What is the parameter which divide printing into impact and non- impact? Explain with examples
25. Ink manufacturing with detailed flow diagram.

B.VOC. DEGREE EXAMINATION, Model Question
First semester
PT1S2T- Graphic Design and Reproduction
(For B.Voc. Degree in Printing Technology)
[2018 Admission]
{ Regular }

[Time : 3 Hour]

[Maximum Marks : 80]

PART – A [short answer questions][2mark*10]
Answer any ten questions

1. What you mean by the term densitometry?
2. Give examples for additive & subtractive color theory?
3. What is the use of proof reading?
4. Write about color temperature?
5. What is the need of screen ruling?
6. Define screen angles?
7. Differentiate hue & value
8. What is the purpose of half sheet work?
9. What is the wavelength of visible spectrum?
10. Define legibility.
11. Write the uses of A series, B series and C series papers.
12. A colour photograph is an example of which type of originals

PART – B [5mark*6]
Answer any six

13. Explain the three relative attributes that define colour.
14. Moire effect degrades the quality and resolution of graphic images. Justify.
15. State the importance of proof reading in printing.
16. What are the basic design considerations?
17. Elucidate different type measurement system used in the printing firm.
18. Define film processing and its stages.
19. Elaborate upon on various types of originals with examples.
20. What are challenges faced in everyday printing?
21. Define 4 line principles.

PART – C [15mark*2]
Answer any two

22. Design a newspaper with a rough layout.
23. Write about various colour schemes and its importance in everyday life.
24. Draw and explain about process camera and its parts.
25. Elaborate the basic principles of designing.

B.VOC DEGREE EXAMINATION, Model Question

First Semester

Graphic Design and Reproduction- Practical

(For B.Voc. Degree in Printing Technology)

[2018 Admission]

{Regular}

Time 3 Hrs

Maximum: 80 Marks

Part A:Theory Assessment- Short Answer Type

Answer any 5 questions.

4 marks each.

(5*4=20)

1. What is a family of type? define various type of typeface families.
2. Explain about the monogram logo. Design it.
3. Briefly explain the stages of layout preparation.
4. Create your own logo.
5. Prepare a finished layout for visiting card.
6. Describe the characteristics of times newroman.
7. Draw the type face of any specific type family.
8. Write about any 4 family type

Part B:Skill Assessment- Practical (60 marks)

(Record:10, Theory/ Procedure/ Design: 10, Activity/Neatness:20, Result: 10, Viva: 10)

9. Calculate the print area of a double demy octavo portrait format book and also draw the title page

B.VOC DEGREE EXAMINATION, Model Question

First Semester

PT1SV1- Vocational workshop-I

(For B.Voc. Degree in Printing Technology)

[2018 Admission]

{Regular}

Time 3 Hrs

Maximum: 80 Marks

Part A: Report- (50 marks)

1. Report Evaluation.

**Part B : Viva – Model questions
(30 arks)**

1. Define any two type of imposition software
2. Share your idea on sheet work and half sheet work.
3. Define OCR
4. What do you mean by proof reading?
5. In typesetting page maker help to?
6. Comment on page make- up software.
7. What is the role of gridline in layout setting
8. Explain the typesetting routine for various kind of work.
9. What is imposition?
10. Describe about various process and equipments used in conventional typesetting.
11. What is layout?
12. State the purpose of proofing?
13. What is meant by 'sheet work' scheme?
14. What is meant by publishing house?
15. Comment on 'importance of color" in design.

MODEL QUESTION PAPERS- SECOND SEMESTER

B.Voc Degree Examination Second Semester - Model Question Paper

BOCG201 - WRITING AND PRESENTATION SKILLS IN ENGLISH
Time: Three Hours **Maximum: 80Marks**

PART A

Answer any 10 questions. Each question carries 2 marks.

1. What is a resume?
2. What is a group discussion?
3. What is a project report
4. What is proxemics?
5. What is a letter of enquiry?
6. What is a flip chart?
7. What is a seminar?
8. What is a power of attorney?
9. What is netiquette?
10. What are narrative essays?
11. What are the components of a typical seminar paper?
12. What is paralanguage?

(10x2 = 20)

PART B

Answer any 6 questions. Each question carries 5 marks.

13. What are the important points to be considered while sending collection letters?
14. What is a channel of communication? What are the different types of channel of communication?
15. Write a letter to the editor about the street dog menace in your city.
16. You want to sell your book collection. Prepare a notice to be put up in the college notice board.
17. Write a short note on Kinesics.
18. Prepare an agenda for the monthly board meeting of your firm.
19. What are the points to be remembered while filling an application form?
20. You are the owner of a supermarket. Write a letter inviting quotations from a wholesale dealer.
21. Write a short note on visual aids that are often used in presentations.

(6x5 = 30)

PART C

Answer any 2 questions. Each question carries 15 marks.

22. You are Ravi/Jaya. Prepare an application letter and a resume for the post of an assistant engineer.
23. Write an essay arguing for or against single sex educational institutions.
24. What are the barriers to effective communication? How can we overcome them?
25. Write a descriptive essay about your favourite place.

B.VOC DEGREE EXAMINATION, Model Question
Second Semester
CA2G1T- DIGITAL ELECTRONICS & MICROPROCESSOR
(For B.Voc. Degree in Printing Technology)
[2018 Admission]
{Regular}

Time: Three Hours

Maximum: 80 Marks

Part A (Very short answer type)

Answer any 10 questions.

2 mark each.

1. Convert the decimal number 25 to binary.
2. Find the 1's complement of 1010.
3. In Boolean algebra $A + \bar{A} = \dots\dots\dots?$
4. Name any two microcontrollers.
5. In Boolean algebra $A \cdot 0 = \dots\dots\dots?$, $A + 1 = \dots\dots\dots?$
6. Find out the 2's complement of 1011.
7. Compare NAND and NOR.
8. Perform the following conversion $(1101)_2 = (\dots\dots\dots)_{10}$
9. What are the universal gates?
10. Explain EX-OR gate.
11. State Demorgan's Theorem.
12. Write any two instruction sets of 8086 microprocessor.

Part B - Short answer (Not to exceed 60 words)

Answer any six questions

5 marks each

13. Derive EX-OR gate from basic gates.
14. What is a multiplexer circuit?
15. Explain JK flipflop.
16. Compare encoder and decoder.
17. What are the addressing modes of 8086 Microprocessor?
18. Make a short note on counters used in digital circuits.
19. List the application of flipflops.
20. Draw the logic circuit for the expression $Y = B + \bar{B}C + AB$.
21. Convert a decimal number $(527.74)_{10}$ in to binary number.

Part C (Long essay)

Answer any two questions.

15 marks each

22. Draw and explain the schematic pin and functional block diagram of 8086 Microprocessor.
23. With a neat sketch explain half adder and full adder circuits.
24. Make a detailed note on K-map
25. Explain the operations of common logic gates in digital circuits.

B.VOC DEGREE Model EXAMINATION, MONTH YEAR
Second Semester
EE2G1T- ENVIRONMENTAL STUDIES & HUMAN RIGHTS
(For B.Voc Degree in Printing Technology)
[2018 admissions]

Time : Three Hours

Maximum : 80 marks

Part A (Very short answer type)

Answer any 10 questions.

2 marks each.

1. Define Deforestation
2. Describe Food chain
3. Expand UNESCO
4. What is Poaching
5. What are Hot spot of biodiversity
6. What is an Ecosystem
7. Suggest some measures to avoid over exploitation of forest wealth.
8. What is biodiversity?
9. What are the drawbacks of overuse of fertilizers and pesticides in agriculture?
10. What is the difference between endangered and endemic species?
11. Explain steps in solid waste management.
12. Give a brief account of Ozone layer depletion.

Part B - Short answer (Not to exceed 60 words)

Answer any six questions

5 marks each

13. Make report on Chipko movement.
14. Explain the structure and function of ecosystem.
15. Explain different types of forest ecosystems.
16. Comment on the role of individuals in conservation of natural resources.
17. With the help of an ecological pyramid, differentiate between food chain and food web.
18. What is Ozone hole? What are the effects of ozone depletion? How can we reduce ozone depletion?
19. With the help of a case study, explain the effects of modern agriculture on environment and livelihood.
20. Write a note on ecological Succession.
21. What is the difference between in-situ and ex-situ conservation of biodiversity?

Part C (Long essay)

Answer anytwo questions.

15 marks each

22. Explain the classifications of biodiversity.
23. Explain different types of pollution existing in the environment.
24. Explain the concept of Global warming with the help of a diagram. What are its effects? What are the remedial measures?
25. Explain and indicate the difference between biosphere reserve, national park, and wild life sanctuaries with two examples each.

B.VOC. DEGREE EXAMINATION, Model Question
Second semester
PT2S1T - Printing Material Science
(For B.Voc. Degree in Printing Technology)
[2018 Admission]
{Regular}

[Time : 3 Hour]

[MaximumMarks : 80]

PART – A [short answer questions][2mark*10]

Answer any ten

1. What you mean by the term PS plate?
2. Define the term GSM?
3. Expand and describe the term CTP?
4. What you mean by Viscosity?
5. What is the need of special inks?
6. Write any two chemical properties of paper?
7. Give example for radiation curing?
8. What is the use of bellard shell cylinders?
9. Write about contact angle?
10. What is the function of copper plating?
11. Differentes between positive & negative working plate?
12. How thermo plastic differ from thermosetting plastic?

PART – B [5mark*6]

Answer any six

13. Distinguish fluorescent ink and phosphorescent ink?
14. Differentiate Long grain and short grain?
15. List out the features of Low Density Polyethylene?
16. Discuss the manufacturing process of gravure cylinder?
17. Describe the various physical properties of paper?
18. How contact angle related to surface tension?
19. Discuss about quality testing of paper for packing?
20. List out the difference in rubber plate & photopolymer plate?
21. Write about theproduction technique of offset plate?

PART – C [15mark*2]

Answer any two

22. Describe the various methods by which printing inks dry.
23. Explain major category of plastic films used in the printing industry.
24. Brifely describe about the properties of paper?
25. How offset, gravure andflexo-plate making differ from each other?

B.VOC. DEGREE EXAMINATION, Model Question

Second semester

PT2S2T- Printing Machineries

(For B.Voc. Degree in Printing Technology)

[2018 Admission]

{Regular}

[Time : 3 Hour]

[MaximumMarks : 80]

PART – A [short answer questions][2mark*10]

Answer any ten

1. Name the two types of offset press.
2. What is the purpose of web detector?
3. Define the term wet on dry printing.
4. State the use of turner bar.
5. What is glazed ink rollers mean?
6. Rubber hardness is measured with the help of?
7. What are the unites of a printing machine?
8. What you mean by make-ready operations?
9. Function of dampening solution?
10. What are the sheet registration lays?
11. Describe the term blanket smash?
12. Name the various detectors used in sheet-fed offset machines?

PART – B [5mark*6]

Answer any six

13. “Splicer are intended for a smooth web flow”. Name and explain the function of splicer?
14. How sheet transfer is don between units in a web?
15. Evaluate the function of a two roller inking system?
16. Name any three inking problems with causes and remedies
17. Maintaining PH is a must for correct dampening. Prove the statement.
18. Make a detailed note on color order which used in presses?
19. Discuss about the problems related to dampening solutions and their remedies?
20. Describe about various types of folders used in web-offset?
21. Functioning of dancer roller?

PART C [15 mark*2]

Answer any two

22. Discuss about the major parts of sheet fed offset.
23. Make a detailed note on inking and dampening system of sheet-fed press
24. Share your ideas about the press difficulties and its remedies.
25. How the in-feed unit of web works?

B.VOC DEGREE EXAMINATION, Model Question

Second Semester

Printing machineries- Practical

(For B.Voc. Degree in Printing Technology)

[2018 Admission]

{Regular}

Time 3 Hrs

Maximum: 80 Marks

Part A:Theory Assessment- Short Answer Type

Answer any 5 questions.

4 marks each.

(5*4=20)

1. Define the stages of plate clamping
2. Write a short note on pre-makeready operations in a sheetfed offset press.
3. List the setting operations carried on feed board.
4. List of the various make-ready operations in web offset press.
5. Discuss on the procedure of plate clamping.
6. Share your ideas about mounting the plate.
7. Draw the imposition for web offset machine.
8. Make a note on setting of inking system.

Part B:Skill Assessment- Practical (60 marks)

(Record:10, Theory/ Procedure/ Design: 10, Activity/Neatness:20, Result: 10, Viva: 10)

9. Take a single side print
paper – map litho
papersize – demy
margine – equal
method of work – work and turn

B.VOC DEGREE EXAMINATION, Model Question

Second Semester

PT2SV1-Vocational workshop-II

(For B.Voc. Degree in Printing Technology)

[2018 Admission]

{Regular}

Time 3 Hrs

Maximum: 80 Marks

Part A: Report - (50 marks)

1. Report Evaluation

Part B : Viva – Model questions

(30 arks)

1. Explain wash up of inking system.
2. Distinguish between the color print taken using a single color machine and a multicolor machine?
3. State the advantages of multicolor press
4. Mention any three printing problems and their remedies.
5. Explain the anti set-off precaution taken during printing.
6. What factors are considered for better distribution of ink in a sheetfed offset machine?
7. State the purpose of lubrication.
8. Name the cylinders of offset press.
9. Define the various operations included in a complete make ready.
10. Name the different types of lubrication used.
11. Describe about the specification of any three sheet fed machines.
12. Name any four web offset machine.
13. Explain the pre make-ready operations carried out in a web offset press.
14. What is the purpose of dampening?
15. How make-ready for controlling register is done?