

 Estd. 1962 “A++” Accredited by NAAC (2021) With CGPA 3.52	SHIVAJI UNIVERSITY, KOLHAPUR 416 004, MAHARASHTRA PHONE : EPABX - 2609000, BOS Section - 0231-2609094, 2609487 Web : www.unishivaji.ac.in Email: bos@unishivaji.ac.in शिवाजी विद्यापीठ, कोल्हापूर, ४१६ ००४, महाराष्ट्र दूरध्वनी - इपीबीएक्स - २०६०९०००, अभ्यासमंडळे विभाग : ०२३१- २६०९०९४, २६०९४८७ वेबसाईट : www.unishivaji.ac.in ईमेल : bos@unishivaji.ac.in		
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Ref.: SU/BOS /Voc. / 222

Date: 06 - 07- 2026

The Principal,
All concerned Affiliated Colleges /Institutions,
Shivaji University, Kolhapur

**Subject : Regarding Syllabi of B. Voc. Part II Programme under the Faculty of
Inter- Disciplinary Studies as per National Education Policy 2020 (2.0)**

Sir/Madam,

With reference to the subject, mentioned above, I am directed to inform you that the university authorities have accepted and granted approval to the syllabi of following B. Voc. Part II Programme under the Faculty of Inter-Disciplinary Studies, as per National Education Policy 2020 (2.0).

1	B. Voc. Food Processing Technology	6	B Voc. Tourism And Service Industry
2	B. Voc Sustainable Agriculture	7	B. Voc. Building Technology & Interior Designing
3	B. Voc. Automobile	8	B. Voc. Printing And Publishing
4	B. Voc. Graphic & Design	9	B. Voc. Nutrition And Dietetics
5	B. Voc. Nursing And Hospital Management	10	B. Voc. Sustainable Agriculture Management

This syllabus (nature of question paper and equivalence etc) shall be implemented from the academic year **2026-2027** onwards. A soft copy containing the syllabus is attached herewith and it is also available on university website www.unishivaji.ac.in NEP-2020 (Online Syllabus).

The question papers on the pre-revised syllabi of above-mentioned programmes will be set for the examinations to be held in October /November 2026 & March/April 2027. These chances are available for repeater students, if any.

You are therefore, requested to bring this to the notice of all students and teachers concerned.

Thanking you,

Yours faithfully



Dy Registrar

Encl. : as above

Copy to: For information and necessary action

1	The I/C Dean, Faculty of IDS	7	P.G.Admission Section
2	Director, Board of Examination and Evaluation	8	Affiliation T. 1 & T. 2 Section
3	The Chairman, Respective Board of Studies	9	Appointment A & B Section
4	All On Exam Section	10	P.G.Seminar Section
5	Eligibility Section	11	I. T. Cell
6	Computer Centre	12	Internal Quality Assurance Cell (IQAC)

SHIVAJI UNIVERSITY, KOLHAPUR



Accredited By NAAC with 'A++' Grade with CGPA 3.52

**Faculty of Interdisciplinary
Studies Syllabus for
B.Voc.-Part II
NEP-2.0
Printing and Publishing**

**Revised syllabus to be implemented from
Academic year 2026-2027 onwards**

(Subject to the modifications that will be made from time to time)

SHIVAJI UNIVERSITY, KOLHAPUR

Revised Syllabus for the Bachelor of Vocation in Printing and Publishing (As per NEP- 2.0) Applicable from the Academic Year 2026–27

1. **Title:** B. Voc. II Printing and Publishing Degree Program me, Shivaji University, Kolhapur Revised Syllabus as per NEP–2.0
2. **Faculty:** Faculty of Printing Technology.
3. **Year of Implementation:** From June 2026
4. **Preamble (Printing and Publishing):** The Preamble for the Bachelor of Vocation (B.Voc) in Printing and Publishing is designed to align higher education with the emerging needs of the economy, addressing the shortage of skilled manpower in the Printing industry. It aims to bridge the gap between education and industry requirements by providing a mix of theoretical knowledge and hands-on, industry-specific skills
- 5.
6. **Program Outcomes:**
7. **System Procedures:** In SAP, the [ME9F](#) transaction is used after the PO is released, allowing users to print, view a PDF, or send the document to a designated printer like LP01.
8. **Automation:** Organizations can configure the system to generate a PDF automatically upon saving the PO, enhancing efficiency.
9. **Printing Options:** Users can select specific documents, such as un-printed or unprocessed POs, and determine the number of copies to be generated.
10. **Customization:** PO print formats can be customized to include specific fields, such as vendor address, item descriptions, and shipping information.
11. **Alternative Methods:** Other systems, such as [Service Desk Plus](#) and [Katana MRP](#), allow for printing from a dedicated "Purchases" tab or from the order details screen, respectively
12. **Course Outcomes (CO):**
13. **Industry Leadership:** As of 2026, they are a major player in the Indian coding and marking industry, offering "make in India" products.
14. **Operations:** They have manufacturing facilities in Nalagarh (Himachal Pradesh) and Guwahati (Assam), with a network of 11 branches across India, and international offices in Nepal, Bangladesh, Sri Lanka, and Oman.
15. **Products & Services:** Their portfolio includes CIJ (Continuous Inkjet), TIJ (Thermal Inkjet), and Laser printers, alongside, fluids, inks, and ribbons.
16. **Applications:** They serve sectors such as packaging, pipes, metal, dairy, sugar, and cement.
17. **Company Structure:** Publicly listed, with over 300+ factory-trained engineers, they emphasize on providing end-to-end coding solutions
18. **Duration of the Course:** The B. Voc. II Course (Printing and Publishing) (Level 5.0) will be of **Two Semesters (Sem. III and Sem. IV)**.
19. **Medium of Instruction:** English
7. **Eligibility for Admission to B. Voc. Part II (Level 5.0):**

- i. The students passing or ATKT the B.Voc. Part-I (or Undergraduate Certificate in Printing and Publishing)
 - ii. shall be allowed to enter upon the B. Voc. Part-II (or Undergraduate Diploma in Printing and Publishing).
- OR
- iii. An Examination of any other Statutory University or an examining Body recognized as equivalent there to.

Scheme of Teaching and Examination:

Each theory course paper constitutes of 4-5 units, which require 30 hours of teaching lectures and there shall be two lectures per theory (2 Cr) course per week.

B. Voc. II Automobile Course will be of 44 Credits (1100 marks).

Examination of each **theory course** shall be of **50 marks** (30 university examination + 20 internal assessment). University examination of 30 marks (1.5 hours' duration) will be conducted at the end of each Semester.

Internal assessment of 20 marks will be done before the semester examination during each semester. Examination for a practical course shall be 50 marks per semester.

Pattern and Nature, marking scheme for theory and

Practical Examination for Major Specific SEC and VSC courses are included in syllabus.

Question papers will be set in the view of the entire syllabus and preferably covering each unit of the syllabus. Weightage should be provided for each unit as per the hours allotted for teaching.

Structure of course: Given in Framework Chart

Standard of Passing: The standard of passing shall be as per the following table.

	Semester End Exam	Internal Assessment	Course Exam (Total)
Maximum Marks	30	20	50
Minimum Marks required for passing	12	8	20

- i. There shall be a separate head of passing for semester-end examination and internal examination.
- ii. Minimum 20 marks out of 50 are required for passing of practical examination of each course.

iii. Assessment:

The NEP 2020 emphasizes upon formative and continuous assessment rather than summative assessment. Therefore, the scheme of assessment should have components of these two types of assessments.

Assessment has to have correlations with the learning outcomes that are to be achieved by a student after completion of the course

- a) **Continuous Assessment :** Assignments, projects, presentations, seminars and quizzes
- b) **Examinations:** Midterm, finals, or comprehensive exams.
- c) **Research Projects/Dissertation/Thesis:** Evaluated through submission and viva-voce
- d) **Grading System:** Standardized letter grades, percentages, or CGPA

Letter Grades and Grade Points

The Semester Grade Point Average (SGPA) is computed from the grades as a measure of the student's

performance in a given semester. The SGPA is based on the grades of the current term, while the Cumulative GPA (CGPA) is based on the

Grades in all courses taken after joining the programmers of study. The HEI slay also mention marks obtained in each course and a weighted average of marks based on marks obtained in all the semesters taken together for the benefit of students.

Computation of SGPA and CGPA:

UGC recommends the following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA)

Letter Grade	Grade Point
O(Outstanding)	10
A+(Excellent)	9
A(Very Good)	8
B+(Good)	7
B(Above Average)	6
C (Average)	5
P(Pass)	4
F (Fail)	0
Ab (Absent)	0

1. The SGPA is the ratio of the sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e.

$$\text{SGPA (S}_i\text{)} = \frac{\sum(C_{ix}G_i)}{\sum C_i}$$

Where C_i is the number of credits of the i^{th} course and G_i is the grade points scored by the student in the i^{th} course.

2. The Cumulative Grade Point Average (CGPA) is also calculate din the same manner taking into account all the courses undergone by a student over all the semesters of a program me, i.e.

$$\text{CGPA} = \frac{\sum(C_{ix}S_i)}{\sum C_i}$$

Where S_i is the SGPA of the i^{th} semester and C_i is the total number of credit sin that.

4. Nature of Question paper and scheme of marking:

- Theory question paper: Maximum marks -30
- Total No. of questions–3
- All questions are compulsory.
- Question No.1isMCQ type (6Marks).
- Question number 2 is long answer type question Carries(12marks).

- Question number 3 is short answer type question carries 12 marks. (Nature of question paper is provided at the end of syllabus.)

SHIVAJI UNIVERSITY, KOLHAPUR

NEP 2.0: Credit Frame work for B. Voc. Undergraduate (UG) Programme under Faculty of Interdisciplinary Studies

B. Voc. Printing and publishing

Level	Semester	COURSES			OE	VSC/SEC	AEC/VEC/IKS	OJT/FP/CEP/ CC/ RP	Total Credit	Degree/Cum/Cr. MEME
		Course –I	Course -II	Course -III			IKS			
4.5	I	DSC-I (2) DSC-II (2) DSC P-I (2)	DSC-I (2) DSC-II (2) DSC P-I (2)	DSC-I (2) DSC-II (2) DSC P-I(2)	OE -1 (T/P)(2)	-	IKS-I (2) Introduction to IKS	-	22	UG Certificate 44
	II	DSC-III (2) DSC-IV (2) DSC P-II (2)	DSC – III(2) DSC-IV(2) DSC P-II(2)	DSC-III(2) DSC-IV(2) DSC P-II (2)	OE-2 (T/P)(2)	-	VEC-I(2) (Democracy, Election and constitution)	-	22	
Credits		8(T)+4(P)= 12	8(T)+4(P)= 12	8(T)+4(P)=12	2+2 =4	-	2 + 2= 4	-	44	Exit Option: 4 Credits NSQF/Internship/Skill Courses
		MAJOR		MINOR						
5.0	III	Major-V(2) Major-VI (2) Major P-III (2)	-	Minor-V (2) Minor-VI (2) Minor P-III (2)	OE -3 (T/P) (2)	VSC- I(2) (P) (Major Specific) SEC-I (2) (T/P)	AEC-I (2) English	CC-I (2)	22	UG Diploma88
	IV	Major-VII(2) Major-VIII(2) Major P-IV(2)	-	Minor-VII (2) Minor-VIII(2) Minor P-IV (2)	OE-4 (T/P) (2)	SEC-II (2) (T/P)	AEC-II (2)English VEC-II (2) (Environmental Studies)	CEP-I (2)	22	
Credits		8(T)+4(P)= 12	-	8(T)+4(P)=12	2+2= 4(T/P)	4(T/P)+2(P)=6	2 + 4= 6	2 + 2= 4	44	Exit Option: 4 Credits NSQF/Internship/Skill Courses
5.5	V	Major-IX(2) Major-X(2) Major P-V (4)	Major-I(ELEC) (2) Major P-I (ELEC) (2)	-	OE-5 (T/P) (2)	VSC-II (2) (Major Specific)(P)	AEC-III (2)English	OJT (4)	22	UG Degree 132
	VI	Major-XI(2) Major-XII (2) Major P-VI (4)	Major-II (ELEC) (2) Major P-II (ELEC) (2)	-	-	VSC-III(2) (P) (Major Specific) SEC-III(2) (T/P)	AEC-III (2) English IKS-2(Major Specific) (2)	FP (2)	22	
Credits		8(T)+8(P)= 16	4(T)+4(P)= 8	-	2(T/P)	2(T/P)+4(P)=6	2 + 4= 6	4+2=6	44	
Total Credits		40+20=60		24	10	12	16	10	132	Exit Option

Sr. No.	Course	No. of Lectures		Name of subject
		T	P	
1.	AECC-CD	2	-	English-III
2.	DEC-C-I	2		Substrate technology
3.	DEC-C-II	2	-	Ink Technology
4.	DSC -C-I	2	-	Offset-I
5.	DSC -C-II	2	-	Image carrier offset
6.	DEC-PR	-	2	Substrate technology
7.	DSC -PR	-	2	Ink Technology
8.	SEC-C-I	-	4	Offset-I
9.	OE-III	2		Graphic Design
10.	CC	2		-

Sr. No.	Course	No. of Lectures		Name of subject
		T	P	
1.	AECC-CD	2	2	English -IV
2.	DEC-C-I	2	2	Binding
3.	DEC-C-II	2	-	Digital Printing
4.	DSC -C-I	2	-	Offset-II
5.	DSC -C-II	2	-	Digital Imposition
6.	DEC-PR	-	2	Binding
7.	DSC -PR	-	2	Digital Printing
8.	SEC-C-I	-	2	Offset-II
9.	OE-IV	-	2	Graphic Design - II
10	VEC-II	2	-	Environment
11	CEP-I	2	-	-

• Student Contact Hrs Per week: 22hrs	• Total marks for B.Voc.- AdvancedDiploma: 900
• Theory and Practical Lectures: 44 Minutes Each	• Total credits for B.Voc.- AdvancedDiploma: 44
• AECC: Ability Enhancement Compulsory Course (Compulsory Environmental Science)	
• Practical workload will for batch of 20 students	
• Practical Examination will be conducted Semester wise for 50 Marks per course (subject).	

• DSC: Discipline Specific Core Course -
• DEC: Discipline Specific Elective-
• There shall be separate passing for theory and practical courses.
• AECC &VEC Internal Evaluation should be done at college or respective departmental level
• <u>Exit option after Level 6:</u> Students can exit with Advance Diploma Course in Bachelor of Vocation with the completion of courses equal to minimum of 56 credits and also shall have to acquire additional CCC credits by successfully completing CCC-I and CCC-II courses which are assisted by Compulsory Civic Courses
• SEC-C& SEC-D are two parts of Vocational Advance Diploma Course-II.

Eligibility:

Eligibility for Admission: For Advance Diploma: Diploma or equivalent in any related stream.

Eligibility for Faculty: 1) Post Graduate with NET / SET/Ph. D. Or
2) Five Year Industry Experienced Personal
2) M. A. (English) with NET/SET for Business Communication

Eligibility for Lab Assistant: Graduation with related field

Staffing Pattern: Teaching: In the 1st year of B. Voc. – One Full Time
one C. H. B. for Business Communication

Lab. Assistant: For 1st Year of B. Voc. – 1 Part Time
For 2nd and 3rd Year (Inclusive of 1st Year) of B. Voc. – 1 Full Time

Bachelor of Vocation (B. Voc.) Part II - Sem. III
Ability Enhancement Course (AECC-C)
Paper Title: English-III

Paper No:

Theory: 2lectures/week

Credits: 02

Total Marks:40(Theory30+Internal 10)

Units Prescribed for Theory:

40 marks

*******COMMON TO ALL*******

Bachelor of Vocation (B. Voc.) Part II - Sem. III
Discipline Specific Elective Course (DEC-I)
Paper Title: Substrate Technology

Paper No:

Theory: 2 lectures/week

Credits: 02

Total Marks:50(Theory40+Internal 10)

Course Outcomes: The students will acquire knowledge of basic concept of substrate technology and paper properties.

- 1. Paper manufacturing process**
- 2. Paper properties: Printability**
- 3. Paper Properties: Run ability and End Use**

Content of syllabus:

Unit I: (8Hrs)

Outline and explain paper manufacturing processPreparing the stock Manufacturing process- Paper, Board. After Treatments- Calendaring, Coating, Conditioning, other finishing processes

Unit II: : : (9Hrs)

Define and explain various properties of paper. Appearance properties- Brightness, Color, Gloss, Opacity. Chemical composition related properties- Coating Composition, Moisture content and RH, pH: Acidity, Alkalinity, Sizing. Structural properties- Compressibility, Resiliency, Hardness and Softness, dimensional Stability, Grain direction, Curl and sheet flatness, Internal Bond Strength, Porosity, App. Density, Basis weight & Gram mage, Caliper and bulk Surface Properties- Cleanliness, Dirt, Ink absorbency, Printability, Smoothness, Surface Strength and Pick resistance, Wire and felt side

Unit III: : (8Hrs)

Define and explain various properties of paper.

Infer and Describe end use properties Chemical composition and related properties- Adhesion from surface, Flame resistance, Light fastness, Moisture content, Permanence & Durability, Resistance from chemicals, water & Vapor resistance Mechanical Properties- Bursting strength, Folding endurance, Tearing strength, Wet strength. Surface properties- Abrasion resistance, Cleanliness, Frictional resistance, Smoothness.

Books Recommended: (List of Minimum 5 Books)

Note: (If any - such as

Text Books:

1. L. C. Young ,Materials in Printing Processes , Focal press Ltd.,London
2. Arthur W. Johnson, Manual For Book binding ,Thames and Hudson
3. Helmut Kaplan, Hand Book of Print media: Technologies and Productionmethods. Heidelberg andSpringer
4. Max Robertson, Substrate Surface preparation Handbook, Pulp and Paper Industry
5. Pulp and Paper Industry, Pulp and Paper Industry

Bachelor of Vocation (B. Voc.) Part II - Sem. III
Discipline Specific Elective Course (DEC-II)

Paper Title: Ink Technology

Paper No:

Theory: 02 lectures/week

Credits: 02

Total Marks:50(Theory)

Course Outcomes: The students will acquire knowledge of basic concept ink technology, ink manufacture and properties.

1. Introduction to Ink Technology

2. Ingredients of Ink

3. Ink Manufacture and Properties

4. Inks used for different Printing Processes

Content of syllabus:

Unit I: (7 Hrs)

Different Printing Processes & Types of inks used Pigment properties- Organic, Inorganic, White, Black Ink Terminology-pH, Viscosity, Thixotropy, Length, Tack, Water in ink emulsion & Ink in Water emulsion.

Unit II: (7Hrs)

Vehicles- Function & Types – Drying vehicles , Non Drying vehicles, Resins- Natural resins , Synthetic resins Solvents-Hydrocarbons , Aliphatic , Alcohols , Wash up solvents Additives-Plasticizers , Waxes , Wetting agents , Anti set off compounds Shortening compounds , Reducers , Stiffening agents Driers- Liquid driers , Paste driers , Inhibitors , Accelerators.

Unit III: (7 Hrs)

Liquid Ink Manufacture-Mixing & Milling - ball mill Paste Ink Manufacture- Mixing & Milling - three roll mill

End use Properties-Rub & scuff resistance , Adhesion flexibility, block resistance , Skid & product resistance ,

Light fastness , Heat seal resistance , Lamination tests Optical Properties: Opacity , Gloss mountings and accessories

Unit IV: (8 Hrs) Offset inks-General formulation , properties Gravure inks- General formulation , properties Flexographic inks- General formulation , properties Screen inks- General formulation , properties Specialty inks-Toners , Ink jet inks , Magnetic inks , OCR inks , Scratch off inks , Water washable inks , Invisible inks , Thermo-Chromic ink. Ink drying methods- Absorption , oxidation & polymerization, Evaporation , precipitation , heat set , cold set , radiation drying i.e. ultra violet curable & electron beam curable

Books Recommended: (List of Minimum 5 Books)

Note: (If Any- such as Knowledge of the topics in the theory papers.)

1. D. E. Visset, The Printing Ink Manual, Northwood Books London
2. Surjeet Gupta, A Guide To Printing Inks , Print India Journal, Delhi
3. EiRi, Modern Technology of Printing Ink , NIIR Board
4. Alfred Seymour, Modern Printing Inks
5. C. Armstrong, The Nature of Printing Ink

Bachelor of Vocation (B. Voc.) Part II - Sem. III
Discipline Specific Core Course (DSC-C-I)
Paper Title: Offset -I

Paper No:
Theory: 02lectures/week

Credits: 02
Total Marks:50(Theory)

Course Outcomes: The students will acquire knowledge of to understand concept for sheetfed offset printing process and their unit.

1. The Printing Unit
2. Feeding Unit
3. Dampening System
4. Inking System
5. The Printing Unit

Content of syllabus:

Unit I: -(12 Hrs) Plate cylinder Construction, Undercut, Cylinder gap, Bearer contact & bearer clearance, Plate clamps – Types , pin register system, Plate mounting, Cylinder packing types, Cylinder gears : comparison of spur and helical gears -Blanket Cylinder Construction, Undercut, cylinder gap, blanket mounting. Packing. Types of Blanket – requirements of an ideal blanket, compressible, non-compressible, Blanket cleaning devices, handling and storage. -Impression cylinder Construction, cylinder gap, packing grippers, nip pressure, effect of change in packing (of P., B and I. cylinders) on printed image.

Unit II: (8 Hrs) Introduction to lithographic offset printing process, Typical design of Machine – perfecting press - Feed board-different parts and purpose Sheet transfer and control types of grippers-Tumbler , swing arm , rotary feed , roll feed Transfer cylinder.

Unit III: (07 Hrs) Dampening System Roller Setting, Roller Covering Materials, Conventional & Other Dampening Systems, Dampening Contents & Their Functions

Unit IV: (8 Hrs) Ink flow theory Inking rollers , coverings , ink duct construction , ink agitator , roller Setting and metering Inking systems-Central Drum , Multi roller Roller wash up & ink pumping system , introduction to various drying systems, anti-set-off spray

Unit V : (12Hrs) Plate cylinder Construction, Undercut, Cylinder gap, Bearer contact and bearer clearance, Plate clamps-Types , pin register system, Plate mounting, Cylinder packing – Types, Cylinder gears : comparison of spur and helical gears Blanket cylinder Construction , undercut , cylinder gap , blanket mounting , packing, Types of Blanket-requirements of an ideal blanket , compressible, Non-compressible , Blanket cleaning devices , handling, storage Impression cylinder

Construction, cylinder gap, packing, grippers, nip pressure, effect of Change in packing (of P., B. & I. cylinders) on printed image.

Books Recommended: (List of Minimum 5 Books)

Note: (If Any- such as Knowledge of the topics in the theory papers.)

Reference Books:

1. Ian Faux ,Modern Lithography, Macdonald & Evans
2. Latham, Litho offset press operating, GATF
3. Helmut Kappa, Hand Book of Print media, Technologies and Production methods, Heidelberg and Springer.
4. L. C. Young Materials in Printing Processes, Focal press Ltd., London
5. Basset, Good acre, The Printing Ink Manual, Northwood Books, London Idle, Leach &Williams
6. GATF Staff Solving Sheeted Offset Problems
7. W. R. Durant, W. R. Durant
8. Faux, Litho Printing, Blue Printing
9. Adams, Faux Printing Technology, Delmar Publication

1. In theory examination, the weight age to numerical problems should not exceed 30%.
2. Students can use scientific calculators in theory examination.

Bachelor of Vocation (B. Voc.) Part II - Sem. III
Discipline Specific Core Course (DSC–C-II)
 Paper Title: **Image carrier Offset**

Paper No:
Theory: 02 lectures/week

Credits: 02
Total Marks: 50(Theory)

Course Outcomes: The students will acquire knowledge of image carrier for offset printing .Student will to understand different types of plate.

1. Image Carrier and Film Planning
2. Plate Department Environment and storage conditions
3. Equipments and plate making materials
4. Different types of plates
5. Quality control in Plate making

Content of syllabus:

Unit I : (12 Hrs) Imposition Schemes. Definition of Imposition, Full sheet work & Half sheet work- work & turn, Work & tumble. Terms related with imposition schemes- gripper margin, folding margin, gutter margin, cutting marks, centerline, plate clamping allowance and binders marks, page characteristics- portrait and landscape, verso and recto. Variation in imposition schemes according to binding styles i.e. center, side, loose leaf binding Step and repeat system introduction: Plate register, multiple negatives or positive contact. Working of semi automatic, automatic machines

Unit II: (08 Hrs) Room layout, Lighting, Ventilation, Flooring, Air conditioning, temperature and humidity, coloring Waste disposal Storing methods, care and precaution, dark reaction, shelf life and pot life.

Unit III: (7Hrs) Whirled, Printing down frame, Plate Processor Light Sources- Metal Halide, carbon arc, mercury vapor, pulsed xenon Detail study of aluminums, zinc, copper, chromium and stainless steel: Contact angle, wet ability, Surface tension.

Unit IV: (8 Hrs) Chemistry of graining, counter etching, coating, sensitizer, developer, finisher, spectral sensitivity of coating Plates- Wipe on, pre- sensitized-positive & negative: Methods of preparation & chemistry involved Introduction to waterless offset concept, preparation of to ray waterless plates, advantages and limitations. Thermal plate & Violet plate.

Unit V :I(8 Hrs) Importance of pH scale, Star target, step wedge, densitometer, standardization of plate exposure.

Books Recommended: (List of Minimum 5 Books)**Note:**

1. L. C. Young, Materials in Printing Processes, Focal press Ltd., London
 2. A. L. Gatehouse K. N. Roper, A manual for film planning & Plate making, Litho training services London
 3. P. J. Hart such, Chemistry for the Graphic Arts, GATF, USA
 4. R. Reed, Offset Lithographic Plate making, GATF
 5. Lithographers manual, GATF Publication, USA
-
1. In theory examination, the weight age to numerical problems should not exceed 30%.
 2. Students can use scientific calculators in theory examination.

Bachelor of Vocation (B. Voc.) Part II - Sem. III**Discipline Specific Elective Course(DEC–II PR)**Paper Title: **Substrate Technology****Paper No:****Practical: 4 lectures/week****Credits: 04****Total Marks: 50 (Practical)****Course Outcomes:** The students will acquire knowledge of

1. They will learn about Grammage and Thickness of paper
2. They will study Tensile, bursting, tearing and folding strength of paper
3. They will understand opacity, moisture content of paper
4. They will learn about pH value of paper

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)**List of Practical's: (Minimum 10)**

Practical No.	Practical
01	Testing of paper samples for Grammage and Thickness
02	Testing of Paper samples for Tensile.
03	Testing of paper samples for Opacity
04	Testing of Paper samples for moisture content and absorbency
05	Testing of paper samples for pH value
06	Testing of Paper samples for Bursting.
07	Testing of Paper samples for Tearing.
08	Testing of Paper samples for Folding strength
09	Testing of Paper Samples Dimensional Stability and Grain direction.
10	To Study about <u>Surface Properties</u> of Paper. Cleanliness, Dirt, Ink absorbency, Printability, Smoothness

Student Instructions:

1. Wear an apron before coming to the laboratory
2. Students have to dispose the used or waste materials in an appropriate container.
3. Disconnect electronic equipment after use
4. Keep your work and clean.

Laboratory Requirements:

1. Paper Samples
2. Lab Instruments

Nature of Practical Question Paper:**Practical examination****50Marks**

- | | |
|--|----------|
| 1. Carry out any practical of substrate technology | 25 marks |
| 2. Identification | 10 marks |
| 3. Submission of certified Journal | 10 marks |
| 4. Viva-voce | 5 marks |

Bachelor of Vocation (B. Voc.) Part II - Sem. III
Discipline Specific Elective Course(DEC-II PR)
Paper Title Ink Technology:

Paper No:
Practical: 02 lectures/week

Credits:02
Total Marks: 50 (Practical)

Course Outcomes: The students will acquire knowledge of

1. Test the ink samples for length, drying, opacity
2. Test the resistance towards acids and alkali, detergents.
3. To check the resistance towards press stability.
4. To check the resistance towards rubbing and scratching
5. To check the resistance towards light fastness.

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)

List of Practical's : (Minimum 10)

Practical No.	Practical
01	To Study Various Types of Inks.
02	To test the ink samples for length.
03	To test the resistance towards acids and alkali.
04	To check the resistance towards rubbing.
05	To check the resistance towards press stability.
06	To check the resistance towards light fastness.
07	To test the ink samples for Drying.
08	To test the ink samples for opacity.
09	To check the resistance towards scratching.
10	To test the resistance towards detergents.

Student Instructions:

1. Wear an apron before coming to the laboratory
2. .Wear hand gloves to avoid direct contact with printing solution and inks.
3. Do not leave printing ink on the floor it may cause slippage.
4. Students have to dispose the used or waste materials in an appropriate container.

Laboratory Requirements:

1. Types of Ink.
2. Lab Instruments.

Nature of Practical Question Paper:**Practical examination****50 Marks**

- | | |
|--|----------|
| 1. Carry out any practical of ink technology | 25 marks |
| 2. Identification | 10 marks |
| 3. Submission of certified Journal | 10 marks |
| 4. Viva-voce | 5 marks |

Bachelor of Vocation (B. Voc.) Part II - Sem. III
Discipline Specific Core Course(DSC-I PR)

Paper Title: - Offset-I

Paper No:

Credits: 02

Practical: 02 lectures/week

Total Marks: 50 (Practical)

Course Outcomes: The students will acquire knowledge of

- 1.They will learn about Feeder setting of offset printing machine.
- 2.They will learn about Mounting of plate
3. They will learn about Gripper setting of offset printing machine
- 4.They will learn about Setting of inking rollers.
- 5.They will learn about Measure pH of Dampening solution

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)

List of Practical's : (Minimum 10)

Practical No.	Practical
01	Feeder setting for various stocks.
02	Mounting of plate with packing.
03	Mounting of blanket with packing.
04	Gripper setting of impression cylinder.
05	Setting of dampening roller.
06	Preparation of foundation solution .
07	Cleaning & washing of dampeners.
08	Setting of inking rollers.
09	Cleaning & wash up.
10	Setting- Joggers, Skeleton Wheels, Delivery, anti set-off spray
11	Make ready operations for multicolor printing line and halftone printing
12	Setting of impression lever, inking, dampening lever, feed board devices.
13	Study of ink water balance
14	Measure pH of Dampening solution

Student Instructions:

1. Wear an apron before coming to the laboratory
2. .Wear hand gloves to avoid direct contact with Machine
3. Do not leave grease, oil or printing ink on the floor it may cause slippage.
4. Students have to dispose the used or waste materials in an appropriate container.
- 5.Disconnect electronic equipment after use

Laboratory Requirements:

- 1. Lab Instrument.**

Nature of Practical Question Paper:**Practical examination****50 Marks**

- | | |
|---|-----------------|
| 1. Carry out any practical of Sheetfed offset printing | 25 marks |
| 2. Identification | 10 marks |
| 3. Submission of certified Journal | 10 marks |

Viva-voce

Bachelor of Vocation (B. Voc.) Part II - Sem. IV (Advanced Diploma)
Discipline Specific Elective Course(DEC–II PR)

Paper Title: **Image carrier offset**

Paper No:
Theory: 02 lectures/week

Credits: 02
Total Marks: 50

Course Outcomes: The students will acquire knowledge of

1. To understand the Imposition Schemes
2. They will learn about Checking of positive and negative
3. Preparation of plate by- Checking of positive and negative
4. Analysis of variation of exposure on dot formation

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)

List of Practical's : (Minimum 10)

Practical No.	Practical
1	1. Imposition Schemes: Preparing following layouts: A. Single page layout B. 4 page half sheet work C. 8 page sheet work, 8 page half sheet work and turn D. Packaging application E. 8 Page half sheet work and tumble F. 16 page full sheet work G. 4 page half sheet work and twist
2	Checking of positive and negative, Screen angle and Squaring up of positive.
3	Positive working Paste up
4	Negative working paste up
5	Preparation of wipe on plates
6	Preparation of plate by- Checking of positive and negative
7	Preparation of plate by- P.S. negative
8	Analysis of variation of exposure on dot formation and processing time- under and over exposed and correctly exposed on the plate by half tone positive
9	Preparing Layouts 12 page full sheet work
10	Preparing Layouts 32 page full sheet work

Student Instructions:

1. Wear an apron before coming to the laboratory
2. Wear hand gloves to avoid direct contact with any type of machines.
3. Students have to dispose the used or waste materials in an appropriate container.
4. Disconnect electronic equipment after use
5. keep your work and clean.

Student Instructions:

1. Wear an apron before coming to the laboratory
2. Wear hand gloves to avoid direct contact with any type of machines.
3. Students have to dispose the used or waste materials in an appropriate container.
4. Disconnect electronic equipment after use
5. keep your work and clean

Laboratory Requirements:

1. Lab Instrument

Nature of Practical Question Paper:**Practical examination****50 Marks**

- | | |
|--|----------|
| 1. Carry out any practical of image carrier offset | 25 marks |
| 2. Identification | 10 marks |
| 3. Submission of certified Journal | 10 marks |

Viva-voce

Bachelor of Vocation (B. Voc.) Part II - Sem. III
Skill Enhancement Courses (SEC– D-V)

Paper Title: - **Seminar II**

Paper No:
Practical: 4 lectures/week

Credits: 02
Total Marks: 50 (Practical)

Course Outcomes: The students will acquire knowledge of

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)

List of Practical's: (Minimum 10)

Topic:-

Any topic of Printing and Publishing application may be a seminar topic. The seminar may be based on proposed project work also.

Seminar Load:-

Maximum 9-10 students in one batch, Maximum 9-10 students shall work under one Faculty Member Group of one student is not allowed under any circumstances

Seminar Term :

Seminar report should be of 25 to 35 pages. For standardization of the seminar reports the following format should be strictly followed.

1. Page size : Trimmed A4
2. Top Margin : 1.00 Inches
3. Bottom Margin : 1.32 Inches
4. Left Margin : 1.5 Inches
5. Right Margin : 1.0 Inches
6. Para Text : Font - Times New Roman; 12 point
7. Line Spacing : 1.5 Lines
8. Page Numbers: Right aligned and in footer. Font Times New Roman; 12 point
9. Headings : New Times Roman, 14 point, Boldface
10. Certificate : All students should attach standard format

The entire seminar should be documented as one chapter. References should have the following format

Marks

1. Seminar Report: 25
2. Presentation: 25

All students have to present their seminars individually in front of the faculties.

Student Instructions:

Laboratory Requirements:

1. Unit VI: Thermal Radiation: Fundamental concepts of radiation, different laws of radiation, Radiation shape factor, Heat exchange by radiation between two black and diffuse grey surfaces, Radiation shields.

Books Recommended: (List of Minimum 5 Books)

Note: (If any - such as)

Text Books:

1. "Heat Transfer", J. P. Holman, Tata Mc Graw Hill Book Company, New York, 2nd Edition.
2. "Fundamentals of Heat and Mass Transfer ", R. C. Sachdeva, Wiley Eastern Ltd.,
3. "A Text Book on Heat Transfer", Dr. S. P. Sukhatme, Orient Longman Publication Hyderabad.
4. "Heat and Mass Transfer", S. C. Arora and S. Dookundwar, Dhanp at Rai and Sons, Delhi.
5. "Fundamentals of Heat and Mass Transfer" , C .P. Koth and Araman.
6. "Heat and Mass Transfer", R .K. Rajput, S. Chandra and Company Ltd., New Delhi., 5th Edition.
7. "Heat and Mass Transfer", Dr .D. S. Kumar, S. K. Katarina and Sons, Delhi.
8. "Heat Transfer", P.K. Nag, Tata McGrawhill Publishing Company Ltd., New Delhi.
9. "Heat and Mass Transfer", G .Kamraj, Raveendran, SciTech Publication.
10. "Heat Transfer", V C Rao, University press.
11. "Heat Transfer", Dr.S.N.Sapali, Techmach Publication Pune.
12. "Heat and Mass transfer", M. M. Rathod, Laxmi Publications.
13. "Heat Transfer", S.P. Venkateshan, Ane Books Pvt. Ltd., 2nd Edition.

Reference Books:

1. "Heat Transfer—A Practical approach", Yunus. A. Cengel, Tata Mc Graw Hill.
 2. "Heat Transfer" Chapman A.J., Tata Mc Graw Hill Book Company, New York.
- "Fundamentals of Heat and Mass Transfer", Frank P. Incropera, David P. Dewitt, Wiley India.

Bachelor of Vocation (B. Voc.) Part II - Sem. III**Skill Enhancement Courses (SEC– D-VI)****Paper Title: Project/Field Work/Industrial Visit/Study Tour.****Paper No:****Credits: 02****Term Work: 2 lectures/week****Total Marks: 50(Internal)**

Course Outcomes: The students will acquire knowledge of

- 1.
- 2.
- 3.
- 4.
- 5.

Important Note: Field Work/Industrial Visit/Study Tour should be of **minimum Five days** in or out of Maharashtra.

Suggested Places:

1. In Maharashtra (Mumbai Nashik)
2. Out of Maharashtra: (Gujarat, Karnataka)

Student Instructions:

- 1.
- 2.
- 3.

Laboratory Requirements:

- 1.
- 2.

Nature of Evaluation: INTERNAL

Bachelor of Vocation (B. Voc.) Part II - Sem. IV (Advanced Diploma)**Open Elective(OE-III)**Paper Title: -**Graphics design-I****Paper No:****Practical: 4 lectures/week****Credits: 02****Total Marks: 50 (Practical)**

List of Practical's

1. Marketing & Print Material: Design a tri-fold brochure, poster, newspaper ad, and flyer to practice layout and hierarchy.
2. Packaging Design: Create a 3D product package layout, focusing on die-lines, branding, and typography.
3. Social Media Campaign: Create a set of cohesive social media posts (e.g., Instagram carousel) and web ad campaigns.
4. UI/UX Design: Develop a layout for a simple e-commerce page or app screen, focusing on user experience.
5. Photo Manipulation & Editing: Practice compositing, removing backgrounds, color correction, and retouching images.
6. Typography Study: Create a poster focusing on font pairing, hierarchy, and text layout.

Bachelor of Vocation (B. Voc.) Part II - Sem. IV (Advanced Diploma)

Discipline Specific Core Course (DSC–D-I)

Paper Title: Binding

Paper No:

Theory: 2 lectures/week

Credits: 02

Total Marks: 50 (Theory 40 + Internal 10)

Course Outcomes: The students will acquire knowledge of

1. **Introduction to print finishing**
2. **Basics of binding**
3. **Operations in binding**
4. **Machinery and Equipments in binding**
5. **Binding techniques**
6. **Print finishing techniques**

Content of syllabus:

Unit I: (10 Hrs) Introduction to print finishing and its application areas Printing technology wise and printing industry segment wise print finishing operations

Unit II: (06 Hrs) Introduction to binding and its type. Introduction to tools, machinery, equipments used, and application of each of its type Major operations performed in binding- Pre-forwarding and forwarding

Unit III: (14Hrs) Detailed study of pre-forwarding operation- jogging & knocking, removing mis-registered sheets, counting, folding, bundling, gathering, collating, sewing etc. Detailed study of forwarding operations- removing the swell, fixing end papers, fraying out the slips, gluing the back, trimming, rounding and backing, fixing head & tail bands, lining the back, edge decoration, cutting the boards, capping up, squaring the board, lacing in, covering, setting the joints, pasting down, pressing and jacketing.

Unit IV: (8 Hrs) Construction and working of different machines and equipments used in binding such as- single knife trimmer, nipping, perforating, perfect binding, gathering machine, sewing and stitching machine. Construction and working knife folding; Buckle folding, combination folding.

Unit V: (8 Hrs) Working principle and stages involved in Burst, Notch and Two shot wet on wet binding. Case binding, case making machine- parts Function Covering – Quarter, Half , Full, Limp & Library style binding. Boarding methods- Pasting down, split, drawn in work, cut flush, extra square, ASTI (All Sides Turned In). Thread securing methods. Wire-o-wire, Spiral, comb binding techniques, machine construction & working, Loose leaf binding- thong binder, Universal style

Unit VI: (10 Hrs) Study of finishing operations performed on screen, flexography and gravure printed products and substrates Study of types and application of lamination and varnishing operations. Laminating films used and their required properties. Troubles and remedies associated with lamination operation Study of construction and working principle of creasing and die cutting machine. Study of design and materials used in cutting rules. Troubles and remedies with regard to creasing and die cutting operation. Applications of die cutting. Study of types and applications of foil stamping and embossing operation. Foil used and their required properties. Troubles and remedies associated with foil stamping operation Study of types and applications of edge decoration and index cutting operations.

Books Recommended: (List of Minimum 5 Books)**Sr. No. Author Title of Book Publisher's Name**

- 1 Mendiratta Binding & Finishing Printer Publication, New Delhi
- 2 -- Binding & Finishing GATF
- 3 Geoff & Potter Binding & Finishing Blue Print
- 4 Alex J. Vaughan Modern Book binding --
- 5 A. G. Martin Finishing Processes in Printing Focal Press Ltd. London
- 6 Arthur W. Johnson Manual For Book binding Thames and Hudson

TEXT BOOKS:

1. In theory examination, the weight age to numerical problems should not exceed 30%.
2. Students can use scientific calculators in theory examination.)

Bachelor of Vocation (B. Voc.) Part II - Sem. IV (Advanced Diploma)**Discipline Specific Core Course (DSC– D-II)****Paper Title: Digital Printing****Paper No:****Theory: 2 lectures/week****Credits: 02****Total Marks: 50 (Theory)****Course Outcomes:** The students will acquire knowledge of

1. Brief overview of conventional printing technologies
2. Study of components of electro-photographic digital printing System
3. Study of application areas of electro photographic digital printing system
4. Study of application areas of electro photographic digital printing system
5. Study of Ink jet and Thermal transfer digital printing systems
6. Large or wide format Digital Printing
7. Study of digital proofing systems
8. Hardware and Software used in digital printing

Content of syllabus:

Unit I: (08 Hrs) Brief study of characteristics of conventional impact and nonimpact printing technologies, their application areas and limitations Definition, applications and factors that accelerated the use and development of digital printing technologies Comparison of conventional and digital printing technologies used in graphic reproduction processes. Advantages of digital printing techniques i.e. computer -to -print and computer-to press

Unit II: (08 Hrs) Study of working principle and stages involved in different electro photographic i.e. toner based digital printing systems. - Study of photo mechanics behind latent image formation in electro-photographic digital printing system. - Study of working principle, types and examples of photoconductors, charge generation materials and charge transport materials - Study of working principle, types, requirements and examples of developing medium i.e. liquid and dry toners used in electro photographic digital printing system.

Unit III: (08 Hrs) Study of working principle of black-and-white and color digital photocopier system using electro photography and laser methods. - Study of working principle of black-and-white and color digital printing system using electro photography and laser methods

Unit IV: (10 Hrs) Study of working principle, applications and limitations of ion deposition, electrostatic and magneto graphic toner based digital printing systems. - Study of working principle, types and application of facsimile technology. List of digital printing technologies used in facsimile technology. - Study of required properties of substrates used in electro photographic digital printing system. Study of trouble and remedies related to substrates as observed in digital printing.

Unit V: (10 Hrs) Study of working principle, construction, application and classification or types of ink jet digital printing system. - Study of working principle, construction, application and classification or types of thermal transfer digital printing system. - Study of required properties of substrates used in ink jet and thermal transfer digital printing system. Study of trouble and remedies related to substrates as observed in digital printing- Comparative study of electro photographic and ink jet digital printing technologies.

. Unit VI: (06 Hrs) List of the digital printing technologies used in large or wide format digital printing. Construction of a general wide format printer and its technical specifications. - Study of application area and list of substrates used in large or wide format digital printing system.

Unit VII: (04 Hrs) Different types, need, advantages and color gamut requirement of digital proofing systems. - List of different digital printing technologies used in digital color proofing systems

Unit VIII: (06 Hrs) Study of functions, types and comparison of different types of (RIP) Raster Image Processor. Study of future developments such CIP4 in high quality digital printing presses.

- Study of general technical specifications such as memory, processor etc. as required for different hardware and output devices. Study of factors affecting output resolution in different digital printing devices. Calculation of output resolution of a digital printing device. Definition, working, advantages and limitations of Hi-Fi color gamut and hexa chrome printing process.

Books Recommended: (List of Minimum 5 Books)

Reference Books:

1. Hugh Spears Introduction to Prepress BPIF Publishing
2. Bob Thompson Printing Materials: Science and Technology PIRA International
3. Handbook of Imaging Materials
4. Helmut Kappa Hand Book of Print media: Technologies and Production methods. Heidelberg and Springer
5. Kennard Cloud Electronic Imaging Applications in Graphic Arts Proceedings
6. Joe Farce Digital Imaging Focal Press Ltd. London

Bachelor of Vocation (B. Voc.) Part II - Sem. IV (Advanced Diploma)**Discipline Specific Core Course (DSC– D-I)****Paper Title: Offset -II****Paper No:****Theory: 2 lectures/week****Credits: 02****TotalMarks:50(Theory)****Course Outcomes:** The students will acquire knowledge of

1. To study the web fed offset printing.
2. To study the In feed , Dryers and chill rollers
3. Folders & related ancillary Equipments
5. To understand Registration and web control
6. Ancillary operations

Content of syllabus:

Unit I: (08 Hrs) construction & design- common impression cylinder (satellite) - Blanket to blanket, Inline, I,Y,H,N configurations, paper path and color combinations - comparison with sheet fed machines based on feeding, dampening, inking, printing, delivery, wastage percentage

Unit II: (12 Hrs) Reel stands- single, Multiple, revolving; locations such as inline, perpendicular, basement, Automatic splices-Need, types, comparison - Zero speed –festoons - Flying splicer (match speed) web tension- Dancer roller & its types, indeed metering rollers;- tension spans, draw, slip, tension control principles - Surface speed – unwind and rewind - Angle bar, turner bar, Web guide rollers.

Unit III: (10 Hrs) Need, operations and types - Open flame, High velocity hot air, radiation-UV, EB,IR curing, combination - Need, Operations and types - Baffle plates, Jacketed (Embedded); Silicone application

Unit IV: (10 Hrs) Need, Operations Maintenance, types- Former & its types, Jaw, chopper, combination; cut-off and different products, collect cylinders, conveyor mechanisms and type of folds.

Unit V : (08 Hrs) Fan out and controlling fan out (RPL & RPW) mechanical & electrical color register, web to web register,- Register control devices; stroboscopes, oscillating mirrors, video viewers.

Unit VI : (12 Hrs) Slitting and trimming- Blades, Slot types, rotary scissors, hard on hard slitters, perforators, Sprocket punching- web re conditioners, water-cooled ink oscillators, Blanket washers, web break detectors, imprinters, side lay sensors, cutoff control, anti static devices, re moisturizers

Books Recommended: (List of Minimum 5 Books)**REFERENCE BOOKS:**

1. Ian Faux Modern Lithography Macdonald & Evans
2. J. Oldham's Practical Printing & Binding --
3. L. C. Young Materials in Printing Processes Focal press Ltd., London
4. Basset, Good acre, Idle, Leach & Williams The Printing Ink Manual Northwood Books, London
- E. J. Kelly Web Offset- Press Operating GATF, USA

Bachelor of Vocation (B. Voc.) Part II - Sem. IV (Advanced Diploma)
Discipline Specific Core Course (DSC– D-II)

Paper Title: **Digital Imposition**

Paper No:PP16

Theory: 4 lectures/week

Credits: 04

TotalMarks:50(Theory)

Course Outcomes: The students will acquire knowledge of

1. To understand Basics of digital imposition
2. To study File Formats
3. Software used for Digital Imposition
4. Workflow RIP (Raster Image Processor)

Content of syllabus:

Unit I: (12Hrs) Introduction to digital imposition- Definition Difference between conventional and digital method of imposition, Work and turn imposition, Work and tumble imposition

Unit II: (10Hrs) Digital file formats-

EPS, PS, PDF, ZIP, LZW, Cdr, Ai, PSD, Id, TIFF, JPEG, PNG & BMP etc

Unit III: (18Hrs) Software used for Digital Imposition -

Preps , Apogee, Harlequin, QuarkXPress, Adobe Acrobat etc.

Unit IV: (20 Hrs) Workflow RIP (Raster Image Processor) Device independent (Pre-RIP imposition)- Imposition, Imposition Publisher, Press wise, Strip It, Preps, and

Impost rip. Integrated in their own workflow (Post-RIP imposition):

Agfa, BARCO, Heidelberg, Krause, Scan graphic, and Screen RIP Preparation

of Print ready file (PDF/EPS), Preflight check, Color Separation, imposition in software Template layout, resolution, Screen frequency, one/two side printing, binding style and setting of other parameters etc. ROOM (Rip ones output multiples- Computer-to-Plate (CTP): Plate Exposing, Developing, Gumming And Drying Computer-to-press (CTP): Direct imaging (with master), Inking, Printing. Computer-to-film (CTF): Computer to print without master

Books Recommended: (List of Minimum 5 Books)

Reference Books:

- 1.Helmut Kappa Hand Book of Print media: Technologies and Production methods. Heidelberg and Springer

Bachelor of Vocation (B. Voc.) Part II - Sem. IV (Advanced Diploma)**Skill Enhancement Courses (SEC– D-I)****Paper Title : Book Binding****Paper No:****Practical: 4 lectures/week****Credits: 02****Total Marks: 50 (Practical)****Course Outcomes:** The students will acquire knowledge of

1. Study to binding Material
2. Studying different types of sewing
3. Automatic stitching machines
4. Perfect binding machine

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)**List of Practical's: (Minimum 10)**

1. Studying and observing different types of automatic cutters, Fixing and changing knives, safety of cutters, maintenance & care.
2. Studying and observing various types of automatic folders and their principles, purpose handling, care.
3. Understanding working of jogging, counting, tipping in machines, gathering machines
4. Handling wire stitching machine for side stitching and centre stitching
5. Observing functions of automatic stitching machines
6. Studying different types of sewing - side sewing, section sewing
7. Understanding the working of perfect binding machine
8. Observing gluing, in-line gluing (Modular binder) Smashing, rounding, Backing machine.
9. Observing and understanding case making, casing in machines
10. Observing operations for hot foil stamping, die cutting, punching, Numbering, ruling machines.

Student Instructions:

1. Wear an apron before coming to the laboratory .
2. .Wear hand gloves to avoid harmful Binding Equipments.
4. Students have to dispose the used or waste materials in an appropriate container.
5. Disconnect electronic equipment after use
8. keep your work and clean.

Laboratory Requirements:**1. Lab Instruments.**

Nature of Practical Question Paper**Practical examination****50Marks**

- 1. Carry out any practical of binding**
- 2. Identification**
- 3. Submission of certified Journal**

25marks**10marks****10marks****Viva-voce**

Bachelor of Vocation (B. Voc.) Part II - Sem. IV (Advanced Diploma)**Skill Enhancement Courses (SEC– D-II)****Paper Title: Digital printing****Paper No:****Practical: 4 lectures/week****Credits: 02****Total Marks: 50 (Practical)**

Course Outcomes: The students will acquire knowledge of

- 1 Study about scanner
- 2 Study about Inkjet
3. Study about Laser jet
4. Study about Hardware & Software

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)**List of Practical's: (Minimum 10)****No. Practical**

- 01 .Study about scanner (Rotary Drum Scanner, Flatbed Scanner.... Etc.)
02. Study about Inkjet digital printing technology
- 03 . Study about Laser jet digital printing technology
04. Study about Hardware used in digital printing technology
05. Comparative study of Electro photographic and Inkjet digital printing technology
06. Study about Software used in digital printing Technology.
07. Study about Digital Printing Inks.
08. Perform an Image Clipping Path in Indesign Software
09. To Study About Digital Textile Printing.
10. To collect Various types of pages which print digital printing methods.

Reference books: Student Instructions:

1. Handbook of imaging materials. Author : S. Diamond S. Weiss
2. Fundamentals of Inkjet Printing. Author : Stephen D. Hoath
- 3.Mastering in Digital Printing Author : Harald Johnson
4. Digital Printing
5. Handbook of Digital Printing media

Laboratory Requirements:**1. Lab Instruments**

Nature of Practical Question Paper:

Practical examination	50Marks
1. Carry out any practical of Digital printing	25marks
2. Identification	10marks
3. Submission of certified Journal	10marks
4. Viva-voce	5marks

Bachelor of Vocation (B. Voc.) Part II - Sem. IV (Advanced Diploma)**Skill Enhancement Courses (SEC– D-III)**Paper Title: - **Offset-II****Paper No:****Practical: 4 lectures/week****Credits: 02****Total Marks: 50 (Practical)**

Course Outcomes: The students will acquire knowledge of

1. They will learn about pass web with different threading
2. They will study print single color
3. They will understand set web tension
4. Use and study of quality control

Note: (If Any- such as Knowledge of the topics in the theory papers.)**List of Practical's: (Minimum 10)**

01. Mounting and dismounting Blankets.
- 02 .Learn make ready processes.
- 03 .To pass web with different threading diagrams
- 04 .To set web tension control mechanism
- 05 .To print single color jobs
- 06 .To print single/multi color jobs
- 07 .Run on problems and remedies
- 08 .Use and study of quality control aids in printing
09. To Study About angle bar and turner bar.
- 10.To study about the folding mechanism using web.

Student Instructions:

1. Wear an apron before coming to the laboratory
2. .Wear hand gloves to avoid direct contact with printing solution and inks.
3. Do not leave grease, oil or printing ink on the floor it may cause slippage.
4. Students have to dispose the used or waste materials in an appropriate container.
5. wash hands thoroughly with soap and water.
- 6 Disconnect electronic equipment after use
8. keep your work and clean.
- .

Laboratory Requirements:**1. Lab Instruments**

Nature of Practical Question Paper:

Practical examination	50Marks
4. Carry out any practical of Web fed offset printing	25marks
5. Identification	10marks
6. Submission of certified Journal	10marks
7. Viva-voce	5marks

Bachelor of Vocation (B. Voc.) Part II - Sem. IV (Advanced Diploma)
Skill Enhancement Courses (SEC– D-IV)
Paper Title: - - Digital Imposition

Paper No:
Practical: 4 lectures/week

Credits: 02
Total Marks: 50 (Practical)

Course Outcomes: The students will acquire knowledge of

1. They will learn about Imposition of 6 page
2. They will learn about Imposition of 16 page
- 3 They will learn about Imposition of 40 page

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)

List of Practical's: (Minimum 10)

Practical No. Practical

1. To Study Imposition of 6 page pamphlet
2. To Study Imposition of 16 page prospectus
3. To Study Imposition of 40 page book
4. To Study Imposition of 2 Up label
5. To Study about file format.
6. To Study about Data Format.
7. To Study About RIP Images.
8. To Study about Direct Imaging Process.
9. Introduction to CTP and CTF
10. To study imposition of image register and alignment.

Student Instructions:.

1. Wear an apron before coming to the laboratory
2. Students have to dispose the used or waste materials in an appropriate container.
3. Disconnect electronic equipment after use
4. keep your work and clean.

Laboratory Requirements:

1.Lab Instruments.

Nature of Practical Question Paper:

Practical examination	50Marks
8. Carry out any practical of Digital imposition	25marks
9. Identification	10marks
10. Submission of certified Journal	10marks
Viva-voce	5marks

Bachelor of Vocation (B. Voc.) Part II - Sem. IV (Advanced Diploma)**Skill Enhancement Courses (SEC– D-IV)****Paper Title: Project/Field Work/Industrial Visit/Study Tour.****Paper No:.....****Credits: 02****Term Work: 2 lectures/wee****Total Marks: 50(Internal)**

Course Outcomes: The students will acquire knowledge of

- 1.
- 2.
- 3.
- 4.
- 5.

Important Note: Field Work/Industrial Visit/Study Tour should be of **minimum Five days** in or out of Maharashtra.

Suggested Places:

1. In Maharashtra: (Mumbai ,Nashik, Pune)
2. Out of Maharashtra: (Karnataka, Gujarat)

Student Instructions:

- 1.
- 2.
- 3.

Laboratory Requirements:

- 1.
- 2.

Nature of Evaluation: INTERNAL**-Details**

Bachelor of Vocation (B. Voc.) Part II - Sem. IV (Advanced Diploma)**Open Elective(OE-IV)**Paper Title: -**Graphics design-II****Paper No:****Practical: 4 lectures/week****Credits: 02****TotalMarks:50(Practical)**

List of Practical's

1. **Image Retouching:** Practice using the **Clone Stamp**, **Healing Brush**, and **Patch tools** to remove blemishes or unwanted objects.
2. **Photo Manipulation:** Combine multiple images using **Layer Masks** and **Blending Modes** to create surreal compositions.
3. **Text Effects:** Create stylized text using **Bevel & Emboss**, **Outer Glow**, and **Gradients**.
4. **Pen Tool Mastery:** Practice drawing complex organic and geometric shapes by creating straight and curved paths.
5. **Logo Redesign:** Re-draw a famous logo (e.g., Apple or Nike) to understand exact proportions and path construction.
6. **Icon Sets:** Design a set of 5-10 cohesive icons for a specific theme like "Travel" or "Weather".
7. **Multi-page Brochure:** Create a 4-page or 8-page brochure using **Grid Systems** to ensure consistent alignment.
8. **Magazine Spread:** Design a two-page spread that balances high-quality imagery with readable columns of text.