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Shri Acharyaratna Deshbhooshan Shikshan Prasarak Mandal, Kolhapur
Mahavir Mahavidyalaya, Kolhapur (Autonomous)
Affiliated to Shivaji University, Kolhapur

Syllabus for Choice Based Credit System (CBCS) Advance Diploma in Printing & Publishing (B. Voc.) Programme

Programme	**Advance Diploma in Printing & Publishing**
Part	**II**
Semester	**III & IV**
Course Code	**AD A31**
Course Name	**--**
Course Title	**--**
Paper No.	**--**

Under the Faculty of Interdisciplinary Studies

(To be introduced from Academic Year 2022 – 23 onwards)

Subject to the revisions & modifications made from time to time

Mahavir Mahavidyalaya, Kolhapur(Autonomous)
Affiliated to Shivaji University, Kolhapur
(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation(B. Voc.) CBCS**		
Part	**II**	Semester	**III**
Course	**Environmental Studies**	Course Code	**AECC EVS**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022- 23**
Total Credits	**02**	Contact Hours	**04 / Week**
Course Title			

B) Course Objectives:	
i)	Study Nature of Environmental.
ii)	To Understanding natural resources and associated problems.
iii)	To Learn Ecosystems
Iv)	To Understanding of biodiversity and its conservation.

C) Course Syllabus:
(CR = Credits / IH: Instructional Hours)

Units	**CR**	**IH**
Unit I : Nature of Environmental Studies.	0.50	2.30
1.1 Definition, scope and importance.		
1.2 Multidisciplinary nature of environmental studies		
1.3 Need for public awareness.		
Unit II : Natural Resources and Associated Problems.	0.50	2.30
2.1 Forest resources: Use and over-exploitation, deforestation, dams and their effects on forests and tribal people.		
2.2 Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams benefits and problems.		
2.3 Mineral resources: Usage and exploitation. Environmental effects of extracting and using mineral resources.		
2.4 Food resources: World food problem, changes caused by agriculture effect of modern agriculture, fertilizer-pesticide problems.		

2.5 Energy resources: Growing energy needs, renewable and nonrenewable energy resources, use of alternate energy sources. Solar energy, Biomass energy, Nuclear energy.		
2.6 Land resources: Solar energy , Biomass energy, Nuclear energy, Land as a resource, land degradation, man induced landslides, soil erosion and desertification. Role of an individuals in conservation of natural resources.		
Unit III : Ecosystems		
3.1 Concept of an ecosystem. 3.2 Structure and function of an ecosystem.	0.50	2.30
3.3 Producers, consumers and decomposers		
3.4 Energy flow in the ecosystem.		
3.5 Ecological succession.		
3.6 Food chains, food webs and ecological pyramids.		
3.7 Introduction, types, characteristics features, structure and function of the following ecosystem :- a) Forest ecosystem, b) Grassland ecosystem, c) Desert ecosystem, d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).		
Unit IV : Biodiversity and its conservation	0.50	2.30
4.1 Introduction- Definition: genetic, species and ecosystem diversity.		
4.2 Bio-geographical classification of India.		
4.3 Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values.		
4.4 India as a mega- diversity nation.		
4.5 Western Ghat as a biodiversity region.		
4.6 Hot-spot of biodiversity.		
4.7 Threats to biodiversity habitat loss, poaching of wildlife, man-wildlife conflicts.		
4.8 Endangered and endemic species of India.		
4.9 Conservation of biodiversity: In-situ and Ex-situ conservation of		

biodiversity.		

D) Reference Materials	
D1) Text Books for Reading	
1.	A Textbook of Energy Environment and Ecology by Smriti Srivastava
2.	Textbook of Biodiversity by K V Krishnamurthy
3.	Textbook of Biodiversity by Jason Hendon
D2) Books for Reference	
1.	Environmental Biology: Agarwal, K.C.2001Nidi Pub. Ltd., Bikaner.
2.	The Biodiversity of India : Bharucha Erach Mapin Publishing Pvt. Ltd. Ahmedabad 380013, India, Email:mapin@icenet.net (R)
3.	Hazardous Waste Incineration: Brunner R.C.,1989: McGraw Hill Inc. 480p
4.	Marine Pollution : Clank R.S. Clanderson Press Oxford (TB)
5.	Cunningham : W.P. Cooper, T.H.Gorhani, E. & Hepworth, M.T.2001, Environmental Encyclopedia, Jaico Pub. Mumbai, 1196p

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion

F) Course Outcomes:		**Blooms Taxonomy**
CO1	Understand Nature of Environmental.	
CO2	Understood the natural resources and associated problems.	
CO3	To gain information Ecosystems	
CO4	Understanding of biodiversity and its conservation.	

G) Scheme of Course Evaluation		
1.	End Semester Examination (ESE)	40
2.	Continuous Internal Evaluation (CIE)	10
3.	**Total Marks**	**50**

H) Suggested techniques for Continuous Internal Evaluation (10 Marks)		
1.	Home Assignment	
2.		
3.		
4.		
5.	**Total Marks**	**10**

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	MCQs	10
2.	Short Answer	10
3.	Short Note	10
4.	Long Answer	10
Total Marks		**40**

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Mahavir Mahavidyalaya, Kolhapur(Autonomous)
Affiliated to Shivaji University, Kolhapur
(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation(B. Voc.) CBCS**		
Part	**II**	Semester	**III**
Course	**Paper-Substrate Technology(Th)**	Course Code	**AD A31**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022- 23**
Total Credits	**03**	Contact Hours	**04 / Week**
Course Title			

B) Course Objectives:	
i)	Study of paper manufacturing process.
ii)	Various properties of paper knowledge
iii)	To study of absorbent and non absorbent paper-substrate
iv)	Collection of samples of papers-substrate

C) Course Syllabus:
(CR = Credits / IH: Instructional Hours)

Units	**CR**	**IH**
Unit I : Paper-Substrate manufacturing process	0.75	12
1 1.1 Process Preparing the stock		
1.2 Manufacturing process-Paper, Board		
1.3 After Treatments-Calendaring, Coating, Conditioning, other Finishing processes		
Unit II : Paper-Substrate properties: Printability	0.75	12
2.1 Appearance properties- Brightness, Color, Gloss, Opacity.		
2.2Chemical composition related properties- Coating Composition, Moisture content and RH, pH: Acidity, Alkalinity, Sizing.		
2.3 Structural properties- Compressibility, Resiliency, Hardness and Softness, dimensional Stability, Grain direction, Curl and Sheet flatness, Internal Bond Strength, Porosity, App. Density, Basis weight & Grammage, Caliper and bulk		
Unit III : Paper-Substrate : Absorbent & Non-Absorbent		

3.1 Surface Properties- Cleanliness, Dirt, Ink absorbency, Printability, Smoothness, Surface Strength and Pick resistance, Wire and felt side	0.75	12
3.2 Variety of absorbent & Non-absorbent substrates, Manufacturing of Paper, Significance of Paper properties on Print Quality, Surface and Internal sizing, Sizing considerations, Measurement of sizing.		
Unit IV : Paper-Substrate Properties : Runnability and End Use	0.75	12
4.1 Chemical composition and related properties-Adhesion from surface, Flame resistance, Light fastness, Moisture content, Permanence & Durability, Resistance from chemicals, water& Vapor resistane		
4.2 Mechanical Properties- Bursting strength, Folding endurance, Tearing strength Wet strength.		
4.3 Surface properties- Abrasion resistance, Cleanliness, Frictional resistance, Smoothness		

D) Reference Materials	
D1) Text Books for Reading	
1.	Pulp & paper technology, technology, testing & application Author : Rao K. P
2.	Printing a Textbook for Printers Apprentices, Continuation Classes, and for General Author : Frank Souder Henry
D2) Books for Reference	
1.	Materials in Printing Processes : L.C. Young Focal press Ltd., London
2.	Manual For Bookbinding : Arthur W. Johnson Thamesand Hudson
3.	Hand Book of Print media : Technologies and Production methods : Helmut Kipphan Heidelberg and Springer

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion

F) Course Outcomes:		Blooms Taxonomy
CO1	Understand of paper manufacturing	
CO2	Understood the various properties of paper	
CO3	Understanding of absorbent & Non-absorbent paper	

G) Scheme of Course Evaluation		
1.	End Semester Examination (ESE)	40
2.	Continuous Internal Evaluation (CIE)	10
3.	**Total Marks**	**50**

H) Suggested techniques for Continuous Internal Evaluation (10 Marks)		
1.	Home Assignment	
2.		
3.		
4.		
5.	**Total Marks**	**10**

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	MCQs	10
2.	Short Answer	10
3.	Short Note	10
4.	Long Answer	10
Total Marks		**40**

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Mahavir Mahavidyalaya, Kolhapur (Autonomous)
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(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation (B. Voc.) CBCS**		
Part	**II**	Semester	**III**
Course	**Ink Technology (Th)**	Course Code	**AD A32**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022 - 23**
Total Credits	**03**	Contact Hours	**04 / Week**
Course Title			

B) Course Objectives:	
i)	To study of ink manufacturing process.
ii)	Types of ink used in different printing process.
iii)	Various properties of ink ingredients.
iv)	To study of ink drying method.

C) Course Syllabi:
(CR = Credits / IH: Instructional Hours)

Units	**CR**	**IH**
Unit I : Introduction To ink Technology	0.75	12
1.1 Different Printing Processes & Types of inks used		
1.2 Pigment properties-Organic, Inorganic, White, Black		
1.3 Ink Terminology-pH, Viscosity, Thixotropy, Length, Tack, Water in ink emulsion & Ink in Water emulsion		
Unit II : Ingredients of Ink	0.75	12
2.1 Vehicles- Function & Types – Drying vehicles , Non Drying vehicles, Resins- Naturalresins, Syntheticresins		
2.2 Solvents-Hydrocarbons, Aliphatic, Alcohols, Washup solvents		
2.3 Additives-Plasticizers ,Waxes , Wetting agents , Antiset off compounds Shortening compounds, Reducers, Stiffening agents		
2.4 Driers-Liquid driers, Paste driers, Inhibitors, Accelerators		

Unit III : Ink Manufacture and Properties		
3.1 Liquid Ink Manufacture-Mixing & Milling - ball		
3.2 Mill Paste Ink Manufacture-Mixing & Milling- three roll mill		
3.3 End use Properties-Rub & scuff resistance , Adhesion flexibility, block resistance , Skid & product resistance, Light fastness, Heat seal resistance, Lamination tests Optical Properties: Opacity ,Gloss	0.75	12
Unit IV : Inks used for different Printing Processes		
4.1 Different Printing Process used inks General formulation, properties letter-press inks General formulation, properties Screen inks General formulation, properties Offset inks General formulation, properties Flexography inks General formulation, properties Gravure inks		
4.2 Toners, Inkjet inks, Magnetic inks, OCR inks, Scratch off inks, Water washable inks, Invisible inks, Thermo - Chromic ink.	0.75	12
4.3 Ink drying methods-Absorption, oxidation & polymerization, Evaporation, precipitation, heatset, coldset, radiation drying i.e. ultra violet curable & electron beam curable		

D) Reference Materials	
D1) Text Books for Reading	
1.	The Manufacture of Ink: Comprising the Raw Materials, and the Preparation of Writing, Copying, and Hektograph Inks, Safety Inks, Ink Extracts and ... Printing Ink Author : William Theodore Brannt
2.	Printing Ink and Overprint Varnish Formulations Author : Ernest W. Flick
3.	The Complete Technology Book on Printing Inks Author: NIIR Board
D2) Books for Reference	
1.	The Printing Ink Mannual : D. E. Visset : Northwood Books London
2.	A Guide To Printing Inks : Surjeet Gupta : Print India Journal, Delhi
3.	Hand Book of Print media: Technologies and Production methods : Helmut Kipphan : Heidelberg and Springer

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion

F) Course Outcomes:		Blooms Taxonomy
CO1	Understanding of paper samples of grammage and thinckness.	
CO2	Understanding tensile, bursting, tearing and folding strength in paper sample.	
CO3	Understanding testing of paper sample for opacity	
CO4	Understood of moisture content, absorbancy & Ph value.	

G) Scheme of Course Evaluation		
1.	End Semester Examination (ESE)	40
2.	Continuous Internal Evaluation (CIE)	10
3.	**Total Marks**	**50**

(H) Suggested techniques for Continuous Internal Evaluation (10 Marks)		
1.	Home Assignment	
2.		
3.		
4.		
5.	**Total Marks**	**10**

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	MCQs	10
2.	Short Answer	10
3.	Short Note	10
4.	Long Answer	10
Total Marks		**40**

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Mahavir Mahavidyalaya, Kolhapur (Autonomous)
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(New syllabus under Autonomy to be introduced from June, 2021 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation (B. Voc.) CBCS**		
Part	**II**	Semester	**III**
Course	**Planography-Sheet Fed (Offset) (Th)**	Course Code	**AD A33**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022 - 23**
Total Credits	**03**	Contact Hours	**04 / Week**
Course Title			

B) Course Objectives:	
i)	To give the basic knowledge of offset printing process.
ii)	Understanding the all offset units.
iii)	To study of rollers and gears configuration .

C) Course Syllabi:
(CR = Credits / IH: Instructional Hours)

Units	**CR**	**IH**
Unit I : Feeding Unit	0.75	12
1.1 Introduction to lithographic offset printing process, Typical design of Machine–perfecting press		
1.2 Feed board–different parts and purpose		
1.3 Sheet transfer and control		
1.4 types of grippers-Tumbler, swing arm ,rotary feed, roll feed		
1.5 Transfer cylinder		
Unit II : Printing Unit	0.75	12
Plate cylinder 1.1 Construction, Undercut, Cylinder gap, Bearer contact & bearer clearance, Plate clamps– Types, pin registersystem, Plate mounting, Cylinder packing types, Cylinder gears : comparison of spur and helical gears		
2.2 **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.		

2.3 **Impression cylinder** Construction, cylinder gap, packing grippers, nip pressure, effect of change in packing (of BandI. cylinders) on printed image		
2.4 **Dampening System** Roller Setting, Roller Covering Materials, Conventional & Other Dampening Systems, Dampening Contents & Their Functions. Quality associated with dampening system. quality & characteristics of water used in dampening system		
2.5 **Inking System** 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 III : Delivery Unit		
3.1 Study of component of Delivery system. Working of Delivery grippers		
3.2 Study and working of Skeleton wheel transfer drum		12
3.3 Auxiliary equipments and Devices such as anti-set off device, different types of driers		
Unit IV : Troubles Shooting & Quality Control		
4.1 machine and blanket related-m/c speed, sheet jamming. front or side lay variation. creasing jogging. gear streaks slurring, marking, doubling and unevern impression. blanket-lot of sharpness puncture (low spot)glazing, mis-register tightness of blanket.	0.75	12
4.2 Ink mottling, dot gain, set off hickeys ghosting, chalking, emulsification, piling, tinting trapping, plate binding scum dampening scum-streak white spot etc.		
4.3 Use of quality control devices - printing of dot gain slur gauge, star target test form, advancement in sheet fed m/c.		

D) Reference Materials	
D1) Text Books for Reading	
1.	Handbook on Printing Technology
2.	The PIA/GATF Guide to Troubleshooting for the Sheetfed Offset PressTomas M. Destree
D2) Books for Reference	
1.	Modern Lithography : Ian Faux: Macdonald & Evans
2.	Litho offset press operating : Latham : GATF
3.	Hand Book of Print media: Technologies and Production methods :Heidelberg and Springer
4.	Materials in Printing Processes : L.C. Young : Focal press Ltd., London

5	The Printing Ink Manual : Bisset, Goodacre : Northwood Books, London Idle, Leach & Williams

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion

F) Course Outcomes:		**Blooms Taxonomy**
CO1	Understanding the basic knowledge of offset printing process	
CO2	Understanding the all offset units	
CO3	Understading of rollers and gears configurations	

G) Scheme of Course Evaluation		
1.	End Semester Examination (ESE)	40
2.	Continuous Internal Evaluation (CIE)	10
3.	**Total Marks**	**50**

H) Suggested techniques for Continuous Internal Evaluation (10 Marks)		
1.	Home Assignment	
2.		
3.		
4.		
5.	**Total Marks**	**10**

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	MCQs	10
2.	Short Answer	10
3.	Short Note	10
4.	Long Answer	10
Total Marks		**40**

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Mahavir Mahavidyalaya, Kolhapur (Autonomous)
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(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation (B. Voc.) CBCS**		
Part	**II**	Semester	**III**
Course	**Planography Image Carrier (Offset) (Th)**	Course Code	**AD A34**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022 - 23**
Total Credits	**03**	Contact Hours	**04 / Week**
Course Title			

B) Course Objectives:	
i)	To study of imposition schemes.
ii)	The methods of care - taken and plate storage
iii)	The various equipments and materials used plate making process
iv)	Different types of plates.

C) Course Syllabi:
(CR = Credits / IH: Instructional Hours)

Units	**CR**	**IH**
Unit I : Image Carrier and Film Planning	0.75	12
1.1 Imposition Schemes : Definition of Imposition, Full sheet work & Half sheet work- work & turn, Work & tumble.		
1.2 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 : Plate Department Environment and storage conditions	0.75	12

2.1 Room layout, Lighting, Ventilation, Flooring, Air conditioning, temperature and humidity, coloring Waste disposal		
2.2 Storing methods ,care and precaution, dark reaction, shelf life and pot life.		
Unit III : Equipments, quality control and plate making materials		
3.1 Whirler, Printing down frame, Plate Processor Light Sources- Metal Halide, carbon arc, mercury vapor, pulsed xenon Detail study of aluminium, zinc, copper, chromium and stainless steel: Contact angle, wettability, Surface tension.	0.75	12
3.2 Importance of pH scale, Star target, step wedge, densitometer, standardization of plate exposure		
Unit IV : Different types of plate	0.75	12
4.1Chemistry of graining, counter etching, coating, sensitizer, developer, finisher, spectral sensitivity of coating		
4.2 Plates-Wipe on, pre-sensitized-positive & negative: Methods of preparation & chemistry involved.		
4.3 Introduction to waterless offset concept, preparation of tray		
4.4 Thermal plate & Violet plate		

D) Reference Materials	
D1) Text Books for Reading	
1.	Lithography Printing : Lithography Offset Printing Chromolithography
2.	Photo Offset Lithography
3.	Hand book of Offset Printing Technology
D2) Books for Reference	
1.	Materials in Printing : L.C. Young: Focal press Ltd., London
2.	A manual for film planning & Plate making : A.L. Gatehouse K.N.Roper : Litho trining services London
3.	Chemistry for the Graphic Arts: P.J. Hartsuch: GATF,USA

4.	Offset Lithographic Platemaking : R.Reed : GATF
5	Litho grapher smanual : -- : GATF Publication, USA

(E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion

F) Course Outcomes:		**Blooms Taxonomy**
CO1	Understanding of Imposition schemes.	
CO2	Understanding of care-taken & plate storage methods.	
CO3	Understanding various equipments & materials used in plate making process.	
CO4	Understanding different types of plates.	

G) Scheme of Course Evaluation		
1.	End Semester Examination (ESE)	40
2.	Continuous Internal Evaluation (CIE)	10
3.	**Total Marks**	**50**

H) Suggested techniques for Continuous Internal Evaluation (10 Marks)		
1.	Home Assignment	
2.		
3.		
4.		
5.	**Total Marks**	**10**

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	MCQs	10
2.	Short Answer	10
3.	Short Note	10
4.	Long Answer	10
Total Marks		**40**

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Mahavir Mahavidyalaya, Kolhapur(Autonomous)
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(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation(B. Voc.) CBCS**		
Part	**II**	Semester	**IV**
Course	**Environmental Studies**	Course Code	**AECC ESA**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022- 23**
Total Credits	**02**	Contact Hours	**04 / Week**
Course Title			

B) Course Objectives:

i)	To Understanding Environmental Pollution
ii)	To give information Social Issues and the Environment
iii)	To Need Environmental Protection
iv)	To get Experiential knowledge about local environment.

C) Course Syllabus:
(CR = Credits / IH: Instructional Hours)

Units	**CR**	**IH**
Unit I : Environmental Pollution	0.50	2.30
1 1. Definition: Causes, effects and control measures of: Air pollution, Water pollution, soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards.		
1.2 Solid waste Management: Causes, effects and control measures of urban and industrial wastes. Role of a individual in prevention of pollution.		
Unit II : Social Issues and the Environment	0.50	2.30
2.1 Disaster management: floods, earthquake, cyclone, tsunami and landslides.		
2.2 Urban problems related to energy Water conservation, rain water harvesting, watershed management Resettlement and rehabilitation of people; its problems and concerns.		
2.3 Environmental ethics: Issue and possible solutions.		

2.4 Global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.		
2.5 Wasteland reclamation.		
2.6 Consumerism and waste products.		
Unit III : Environmental Protection		
3.1 From Unsustainable to Sustainable development.	0.50	2.30
3.2 Environmental Protection Act.		
3.3 Air (Prevention and Control of Pollution) Act.		
3.4 Water (Prevention and control of Pollution) Act.		
3.5 Wildlife Protection Act.		
3.6 Forest Conservation Act.		
3.7 Population Growth and Human Health, Human Rights.		
Unit IV : Field Work	0.50	2.30
4.1 Visit to a local area to document environmental assets- River/Forest/Grassland/Hill/Mountain. – or Visit to a local polluted site - Urban / Rural / Industrial /Agricultural. or Study of common plants, insects, birds. or Study of simple ecosystems - ponds, river, hill slopes, etc.		

D) Reference Materials

D1) Text Books for Reading

1.	Water Pollution: Its Impact on Environment and Societyby Misra R N
2.	A Concise Textbook of Environmental Pollution Paperback – Import, 8 April 2020 by Praveen Kumar S (Muthirulan P (Author), Archana S (Author)
3.	Environmental Pollution & Control by J. Jeffrey Peirce, P Aarne Vesilind, Ruth Weiner

D2) Books for Reference

1.	Environmental Biology: Agarwal, K.C.2001Nidi Pub. Ltd., Bikaner.

2.	The Biodiversity of India : Bharucha Erach Mapin Publishing Pvt. Ltd. Ahmedabad 380013, India, Email:mapin@icenet.net (R)
3.	Hazardous Waste Incineration: Brunner R.C.,1989: McGraw Hill Inc. 480p
4.	Marine Pollution : Clank R.S. Clanderson Press Oxford (TB)
5.	Cunningham : W.P. Cooper, T.H.Gorhani, E. & Hepworth, M.T.2001, Environmental Encyclopedia, Jaico Pub. Mumbai, 1196p

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion

F) Course Outcomes:		**Blooms Taxonomy**
CO1	Understanding Environmental Pollution	
CO2	To gain information Social Issues and the Environment	
CO3	Understanding Need Environmental Protection	
CO4	Student able to Understand local environment.	

G) Scheme of Course Evaluation		
1.	End Semester Examination (ESE)	40
2.	Continuous Internal Evaluation (CIE)	10
3.	**Total Marks**	**50**

H) Suggested techniques for Continuous Internal Evaluation (10 Marks)		
1.	Home Assignment	
2.		
3.		
4.		
5.	**Total Marks**	**10**

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	MCQs	10
2.	Short Answer	10
3.	Short Note	10
4.	Long Answer	10
Total Marks		**40**

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Mahavir Mahavidyalaya, Kolhapur(Autonomous)
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(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation(B. Voc.) CBCS**		
Part	**II**	Semester	**IV**
Course	Binding Techniques(Th)	Course Code	**AD A41**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022- 23**
Total Credits	**03**	Contact Hours	**04 / Week**
Course Title			

B) Course Objectives:	
i)	To gain the basic of binding process.
ii)	To study of print finishing operations.
iii)	To study about different stages involved in binding process.
iv)	Understanding kinds of machinery equipments, techniques, in binding process.

C) Course Syllabus:
(CR = Credits / IH: Instructional Hours)

Units	**CR**	**IH**
Unit I : Introduction to print finishing	0.75	12
1.1 Introduction to print finishing and its application areas		
1.2 Printing technology wise and printing industry segment wise print Finishing operations. Working principle and stages involved in Burst, Notch and Two shotwet on wet binding.		
Unit II : Basics of binding	0.75	12
2.1 Introduction to binding and its type. Introduction to tools, machinery, equipments used, and application of each of its type		
2.2 Major operations performed in binding-Pre-forwarding and Forwarding		
2.3 Study of types and application of lamination and Varnishing preparation. Laminating films used and their required properties.		
2.4 Troubles and remedies associated with lamination operation Study of construction and working principle of creasing and die cutting machine.		
2.5 Study of design and materials used in cutting rules.		
2.6 Troubles and remedies with regard to creasing and die cutting operation. Applications of die cutting.		

Unit III : Paper Properties : Operations in binding		
3.1 Detailed study of pre-forwarding operation- jogging & knocking, Removing mis-registered sheets, counting, folding, bundling, gathering, collating, sewing etc.	0.75	12
3.2 Detailed study of forwarding operations- removing the swell, fixing End papers, fraying out the slips, gluing the back, trimming, roundingAnd 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 : Machinery and Equipments in binding	0.75	12
4.1 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.		
4.2 Construction and working knife folding; Buckle folding, combination folding		
4.3 Study of types and applications of foil stamping and embossing operation. Foil used and their required properties.		
4.4 Troubles and remedies associated with foil stamping operation		
4.5 Study of types and applications of edge decoration and index cutting operations.		
4.6 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		

D) Reference Materials

D1) Text Books for Reading	
1.	The binding Author : BRIDGET COLLINS
2.	Ultimate guide to book bindingAuthor : Matt marzullo
D2) Books for Reference	
1.	Binding & Finishing : Mendiratta : Printek Publication, New Delhi
2.	Binding & Finishing : Geoff & Potter : Blue Print

3.	Finishing Processes in Printing : A.G.Martin : Focal Press Ltd. London
4.	Manual For Book binding : Arther W.Johnson : Thames and Hudson

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion

F) Course Outcomes:		**Blooms Taxonomy**
CO1	To gain known the basics of binding.	
CO2	Understanding of print finishing operations.	
CO3	Understanding of different stages involved in binding process	
CO4	To take information kinds of binding machinery, equipments and techniques.	

G) Scheme of Course Evaluation		
1.	End Semester Examination (ESE)	40
2.	Continuous Internal Evaluation (CIE)	10
3.	**Total Marks**	**50**

H) Suggested techniques for Continuous Internal Evaluation (10 Marks)		
1.	Home Assignment	
2.		
3.		
4.		
5.	**Total Marks**	**10**

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	MCQs	10
2.	Short Answer	10
3.	Short Note	10
4.	Long Answer	10
Total Marks		**40**

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Mahavir Mahavidyalaya, Kolhapur (Autonomous)
Affiliated to Shivaji University, Kolhapur
(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation (B. Voc.) CBCS**		
Part	**II**	Semester	**IV**
Course	**Digital Printing (Th)**	Course Code	**AD A42**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022 - 23**
Total Credits	**03**	Contact Hours	**04 / Week**
Course Title			

B) Course Objectives:	
i)	To give the knowledge of digital printing process.
ii)	Understanding the conventional printing techniques.
iii)	To study electro-photography- inkjet, thermal transfer digital printing system.
iv)	To give the information hardware & software used in digital printing system.

C) Course Syllabi:
(CR = Credits / IH: Instructional Hours)

Units	**CR**	**IH**
Unit I : Brief over view of conventional printing technologies	0.75	12
1.1 Brief study of characteristics of conventional impact and non-impact printing technologies, their application areas and limitations		
1.2Definition, applications and factors that accelerated the use and development of digital printing technologies		
1.3 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 : Type of digital printing and Alternate toner based Digital Printing System.		12
2.1 Study of working principle, applications and limitations of ion deposition, electro static and magneto graphic toner based digital printing systems.		

2.2 Study of working principle, types and application of facsimile technology. List of digital printing technologies used in facsimile technology.		
2.3 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 III : Large or wide format Digital Printing & Proofing systems		
3.1 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.	0.75	12
3.2 Study of application area and list of substrates used in large or wide format digital printing system.		
3.3 Different types, need, advantages and color gamut requirement of digital proofing systems.		
3.4 List of different digital printing technologies used in digital color proofing systems.		
Unit IV : Study of Inkjet and Thermal transfer systems & used Hardware and Software in digital printing		
4.1 Study of working principle, types, requirements and examples of developing medium i.e. liquid and dry toners used in electro Photographic digital printing system. & Comparative electro photographic and inkjet digital systems.	0.75	12
4.2 Study of working principle, construction, substrates used, application and types of inkjet & thermal transfer digital printing system.		
4.3 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.		
4.2 Study of factors affecting out put 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.		

D) Reference Materials	
D1) Text Books for Reading	
1.	Digital circuits and design. Author : S Salivahanan.

2.	Digital design Author : M Morris Mano.
3.	Digital Color printing technology. Author : Bisbanath chakravarty
D2) Books for Reference	
1.	Introduction to Prepress : Hugh Speirs : BPIF Publishing
2.	Printing Materials: Science and Technology : Bob Thompson : PIRA International
3.	Hand Book of Print media: Technologies and Production methods.: Helmut Kipphan : Heidelberg and Springer
4.	Electronic Imaging Applications in Graphic Arts : Kennard Cloud : Proceedings
5.	Digital Imaging : Joe Farace : Focal Press Ltd. London

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion

F) Course Outcomes:		**Blooms Taxonomy**
CO1	To gain the knowledge of digital printing process.	
CO2	Understanding of conventional printing techniques.	
CO3	Understanding of electro-photography-Inkjet, thermal transfer digital printing system.	
CO4	Understanding information hardware & software used in digital printing system.	

G) Scheme of Course Evaluation		
1.	End Semester Examination (ESE)	40
2.	Continuous Internal Evaluation (CIE)	10
3.	**Total Marks**	**50**

(H) Suggested techniques for Continuous Internal Evaluation (10 Marks)		
1.	Home Assignment	
2.		
3.		
4.		
5.	**Total Marks**	**10**

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	MCQs	10
2.	Short Answer	10
3.	Short Note	10
4.	Long Answer	10
Total Marks		**40**

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Mahavir Mahavidyalaya, Kolhapur (Autonomous)
Affiliated to Shivaji University, Kolhapur
(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation (B. Voc.) CBCS**		
Part	**II**	Semester	**IV**
Course	**Planography Web fed (Offset) (Th)**	Course Code	**AD A41**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022 - 23**
Total Credits	**03**	Contact Hours	**04 / Week**
Course Title			

B) Course Objectives:	
i)	To give the basic knowledge of Web-offset printing process.
ii)	The studying of web & sheet fed printing machines.
iii)	Understanding to details web-offset machines.
iv)	To study about, registration, web-control, folders, dryers, chill rollers & their related parts.

C) Course Syllabi:
(CR = Credits / IH: Instructional Hours)

Units	**CR**	**IH**
Unit I : Introduction	0.75	12
1.1 Construction of configuration of planography web-fed unit, Construction & design-common impression cylinder (satellite), construction & confuguration of planography web - fed unit ,		
1.2 Blanket to blanket, Inline, I,Y,H,N configurations, paper path and color combinations		
1.3 comparison with sheet fed machines based on feeding, dampening, inking, printing, delivery, wastage percentage		
1.4 Fan out and controlling fan out (RPL& RPW)mechanical & electrical color register, web to web register		
Unit II : Feeding unit	0.75	12
2.1 Different types of feeding unit,Reel stands-single, Multiple, revolving; locations such as inline, perpendicular, basement, Automatic splicers -Need, types, comparison		
2.2 Zero Speed - Festoons and Flying Splicer (Match Speed)		
2.3 web tension-Dancer roller & it types, infeed metering rollers;		
2.4 tension spans, draw, slip, tension control principles		

2.5 Surface speed – unwind and rewind ,		
2.6 Angle bar, turner bar, Web guide rollers.		
Unit III : Printing unit		
3.1 Need, operations and types - Open flame, High velocity hot air, radiation-UV, EB, IR curing, combination	0.75	12
3.2 Confuguration of printing unit , types of pamphers , Ancilary operaions, web reconditioners, water-cooled ink oscillators, Blanket washers, web break detectors, imprinters, side lay sensors, , antistatic devices, remoisturisers		
3.3 Need, Operations and types -Baffle plates, Jacketed (Embeded); Silicone application		
Unit IV : Folders & related ancillary Equipments		
4.1 Need, Operations Maintenance, types - Former & it types, Jaw, chopper, combination; cut-off and different products, collect cylinders, conveyor mechanisms and type of folds.	0.75	12
4.2 Slitting and trimming-Blades, Slot types, rotary scissors, hard on hard slitters, perforators, Sprocket punching , trouble shooting.		

D) Reference Materials	
D1) Text Books for Reading	
1.	Hand book of offset printing technology. Author : Engineers india research institute.
2.	The PIA/GATF Guide to Trouble shooting for the Offset Press Tomas M. Destree
3.	Printmaking A complete guide to materials and process Author : Bil fick and Beth Grabowskl.
D2) Books for Reference	
1.	Modern Lithography: Ian Faux: Macdonald & Evans
2.	Litho offset press operating : Latham : GATF
3.	Hand Book of Print media: Technologies and Production methods : Heidelberg and Springer
4.	Materials in Printing Processes : L.C. Young : Focal press Ltd., London
5.	Web Offset-Press Operating : E.J. Kelly : GATF,USA
6.	The Printing Ink Manual : Bisset, Goodacre : Northwood Books, London Idle, Leach & Williams

E) Suggested methods of Teaching:	
i	Offline / Online teaching
ii	Power Point Presentation
iii	Group Discussion

F) Course Outcomes:		Blooms Taxonomy
CO1	Understanding of basic information web-offset system.	
CO2	Understanding of web & sheet fed printing machines.	
CO3	Understanding of web-offset machines.	
CO4	Understanding about registration, web-control, folders, dryers, chill rollers & their related parts, identifying the troubles.	

G) Scheme of Course Evaluation		
1.	End Semester Examination (ESE)	40
2.	Continuous Internal Evaluation (CIE)	10
3.	**Total Marks**	**50**

H) Suggested techniques for Continuous Internal Evaluation (10 Marks)		
1.	Home Assignment	
2.		
3.		
4.		
5.	**Total Marks**	**10**

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	MCQs	10
2.	Short Answer	10
3.	Short Note	10
4.	Long Answer	10
Total Marks		**40**

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Mahavir Mahavidyalaya, Kolhapur (Autonomous)
Affiliated to Shivaji University, Kolhapur
(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation (B. Voc.) CBCS**		
Part	**II**	Semester	**IV**
Course	**Digital Imposition (Th)**	Course Code	**AD A44**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2021 - 22**
Total Credits	**03**	Contact Hours	**04 / Week**
Course Title			

B) Course Objectives:	
i)	To understanding the basics of digital imposition.
ii)	To study about digital file format i.e EPS, PS, PSD, PNG.
iii)	To information software used in digital imposition.
iv)	To study about Digital Imposition work flow i.e - RIP- CTP & CTF.

C) Course Syllabi:
(CR = Credits / IH: Instructional Hours)

Units	CR	IH
Unit I : Basics of digital imposition	0.75	12
1.1 Introduction to digital imposition-		
1.2 Definition		
1.3 Difference between conventional and digital method of imposition		
1.4 Work and turn imposition, Work and tumble imposition		
1.5 Storing methods, care and precaution, dark reaction, shelf life and pot life.		
Unit II : File Formats		
2.1 **Digital file formats-** EPS,PS,PDF,ZIP,LZW, Cdr, Ai, PSD, Id, TIFF,JPEG,PNG& BMP etc.	0.75	12
Unit III : Softwares	0.75	12
3.1 **Software used for Digital Imposition-** Preps, Apogee X, Harlequin, QuarkXPress,Adobe Acrobat etc.		

Unit IV : Workflow		
4.1 **RIP**(Raster Image Processor)		
4.2 **Device independent (Pre-RIP imposition)-** IN position, Imposition Publisher, Press wise, Strip It, Preps, and Impost rip.		
4.3 **Integrated in their own workflow (Post-RIP imposition):** Agfa, Barco, Heidelberg, Krause, Scan graphic, and Screen		
4.4 **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.	0.75	12
4.5 **ROOM(Rip ones out put multiples-** Computer-to-Plate(CTP) :		
4.6 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		

D) Reference Materials	
D1) Text Books for Reading	
1.	Digital media . Author : Lake S.
2.	Digital images processing Author :Rafale C. Gonzalez.
3.	Digital textbook versus print textbook Author : Jamie R. engbrecht.
D2) Books for Reference	
1.	Hand Book of Print media: Technologies and Production methods : Helmut Kipphan : Heidelberg and Springer

(E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion

F) Course Outcomes:		Blooms Taxonomy
CO1	Understanding of basics of digital imposition	
CO2	Understanding about digital file format i.e - EPS, PS, PSD, PNG.	
CO3	Understanding of information used in digital imposition.	
CO4	Understanding about Digital Imposition work flow i.e - RIP - CTP & CTF	

G) Scheme of Course Evaluation		
1.	End Semester Examination (ESE)	40
2.	Continuous Internal Evaluation (CIE)	10
3.	**Total Marks**	**50**

H) Suggested techniques for Continuous Internal Evaluation (10 Marks)		
1.	Home Assignment	
2.		
3.		
4.		
5.	**Total Marks**	**10**

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	MCQs	10
2.	Short Answer	10
3.	Short Note	10
4.	Long Answer	10
Total Marks		**40**

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Mahavir Mahavidyalaya, Kolhapur (Autonomous)
Affiliated to Shivaji University, Kolhapur
(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation (B. Voc.) CBCS**		
Part	**II**	Semester	**III**
Course	**Paper-Substrate Technology(Pr)**	Course Code	**AD A31 Practical**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**40 Marks**	Implementation	**2022 - 23**
Total Credits	**04**	Contact Hours	**06 / Week**
Course Title			

B) Course Objectives:	
i)	To study paper samples for grammage and thickness.
ii)	To study tensile bursting , tearing , and folding strenght in paper sample.
iii)	To studied testing of paper for opacity.
iv)	To study paper sample for moisture content , absorbancy , and P_H value .

C) Course Syllabi:
(CR = Credits / IH: Instructional Hours)

Practical's	**CR**	**IH**
Unit I : Introduction	4	75
1. Testing of paper samples for Grammage and Thickness		
2. Testing of Paper samples for tensile, bursting, tearing and folding strength.		
3. Testing of paper samples for Opacity		
4. Testing of Paper samples for absorbent & Non-absorbent		
5. Testing of paper samples for pH value.		

D) Reference Materials	
D1) Text Books for Reading	
1.	Pulp & paper technology, technology, testing & application Author : Rao K. P
2.	Printing a Textbook for Printers Apprentices, Continuation Classes, and for General Author : Frank Souder Henry
D2) Books for Reference	
1.	Introduction to Printing – Herbert Simonn
2.	Printing Today – Surjeet Gupta – Print India Journal, Delhi
3.	A Guide to Printing Inks – Surjeet Gupta – Print India Journal, Delhi
4.	Modern Lithography – Ian Faux – Macdonad& Evans Pylnont

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion

F) Course Outcomes:		Blooms Taxonomy
CO1	Understanding of paper samples for grammage and thickness.	
CO2	Understanding of tensile bursting , tearing , and folding strength in paper sample.	
CO3	Understanding testing of paper for opacity.	
CO4	Understanding paper sample for moisture content , absorbency, and P_H value	

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	Practical	25
2.	Submission Practical record book	10
3.	Viva voce	15
Total Marks		**50**

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Mahavir Mahavidyalaya, Kolhapur (Autonomous)
Affiliated to Shivaji University, Kolhapur
(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation (B. Voc.) CBCS**		
Part	**II**	Semester	**III**
Course	**Ink Technology** (Pr)	Course Code	**AD A32 Practical**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022 - 23**
Total Credits	**04**	Contact Hours	**06 / Week**
Course Title			

B) Course Objectives:	
i)	To study Manufacturing process of ink.
ii)	To study of ink pigment
iii)	To study of ink ingredients properties.

C) Course Syllabi:
(CR = Credits / IH: Instructional Hours)

Practical	**CR**	**IH**
1. To test the ink samples for length, drying, opacity.	4	75
2. To test the resistance towards acids and alkali, detergents.		
3. To check the resistance towards rubbing and scratching.		
4. To check the resistance towards press stability.		
5. To check the resistance towards light fastness.		
6. To study of viscosity of liquid ink		
7. To study ink pigment properties.		

D) Reference Materials

D1) Text Books for Reading

1.	The Manufacture of Ink: Comprising the Raw Materials, and the Preparation of Writing, Copying, and Hektograph Inks, Safety Inks, Ink Extracts and ... Printing Ink Author : William Theodore Brannt
2.	Printing Ink and Overprint Varnish FormulationsAuthor : Ernest W. Flick
3.	The Complete Technology Book on Printing Inks Author: NIIR Board

4.	The Manufacture of Ink: Comprising the Raw Materials, and the Preparation of Writing, Copying, and Hektograph Inks, Safety Inks, Ink Extracts and ... Printing Ink Author : William Theodore Brannt

	D2) Books for Reference
1.	Letter Assembly in Printing – D. Wrold ridge – Pitman Publication, London
2.	A handbook of typography – Kailash Takale – Nirmal as adanprakashan, New Delhi
3.	PageMaker – Rebecca Bridge Altman – BPB Publication New Delhi
4.	Composing and Typography – B. D. Mendiratta – Printek Publication, New Delhi

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion

F) Course Outcomes:		**Blooms Taxonomy**
CO1	Understanding Manufacturing process of ink.	
CO2	Learn about ink pigment	
CO3	Understanding ink ingredients properties.	

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	Practical	25
2.	Submission Practical record book	10
3.	Viva voce	15
Total Marks		**50**

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Mahavir Mahavidyalaya, Kolhapur (Autonomous)
Affiliated to Shivaji University, Kolhapur
(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation (B. Voc.) CBCS**		
Part	**II**	Semester	**III**
Course	**Planography-Sheet Fed (Offset) (Pr)**	Course Code	**AD A33 Practical**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022 - 23**
Total Credits	**04**	Contact Hours	**06 / Week**
Course Title			

B) Course Objectives:	
i)	To study of feeder setting.
ii)	To study of dampening system.
iii)	Understanding the printing unit.
iv)	To give information of Setting of inking roller cleaning & wash up

C) Course Syllabi:
(CR = Credits / IH: Instructional Hours)

Practical's	**CR**	**IH**
1. Feeder setting for various stocks.	4	75
2. Mounting of plate & blanket with packing.		
3. Gripper setting of impression cylinder.		
4. Setting of dampening and inking roller.		
5. Preparation of fountain solution.		
6. Cleaning & washup.		
7. Setting of inking rollers.		

8. Measure pH of Dampening solution		
9. Setting - joggers, Skelton Wheels, Delivery, anti set-off spray		
10. Make ready operations for multicolor printing line and halftone printing.		
11. Study of ink water balance		

D) Reference Materials	
D1) Text Books for Reading	
1.	Handbook on Printing Technology
2.	The PIA/GATF Guide to Troubleshooting for the Sheet fed OffsetPress Tomas M. Destree
D2) Books for Reference	
1.	Handbook for Screen Printers – S. S. Thall

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion

F) Course Outcomes:		**Blooms Taxonomy**
CO1	Understanding of feeder setting.	
CO2	Understanding of dampening system.	
CO3	To gain information of printing unit.	
CO4	Understanding Setting of inking roller cleaning & wash up	

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	Practical	25
2.	Submission Practical record book	10
3.	Viva voce	15
Total Marks		**50**

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Mahavir Mahavidyalaya, Kolhapur (Autonomous)
Affiliated to Shivaji University, Kolhapur
(New syllabus under Autonomy to be introduced from June, 2021 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation (B. Voc.) CBCS**		
Part	**II**	Semester	**III**
Course	**Planography Image Carrier (Offset) (Pr)**	Course Code	**AD A34 Practical**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2021 - 22**
Total Credits	**04**	Contact Hours	**06 / Week**
Course Title			

B) Course Objectives:	
i)	Understanding layout in imposition schemes.
ii)	To study of positive & negative working P.S plate.
iii)	To arrangement of wipe-on plat

C) Course Syllabi:
(CR = Credits / IH: Instructional Hours)

Practical	**CR**	**IH**
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 H. 12 page full sheet work	4	75
2. Checking of positive and negative, Screen angle and Squaring up of positive.		
3. Positive- Negative working Paste up		
4. Preparation of computer to plates		

5. Preparation of plate by - P.S. positive & P.S. negative		
6. Analys is of variation of exposure on dot formation and Processing time-under and over exposed and correctly exposed on the plateby half tone positive		

D) Reference Materials	
D1) Text Books for Reading	
1.	Lithography Printing : Lithography Offset Printing Chromolithography
2.	Photo Offset Lithography
3.	Hand book of Offset Printing Technology
D2) Books for Reference	
1.	Introduction to Printing – Herbert Simonn
2.	Printing Today – Surjeet Gupta – Print India Journal, Delhi
3.	A Guide to Printing Inks – Surjeet Gupta – Print India Journal, Delhi
4.	Wiley –VCH, 2006 – Herbert Holik – Wiley-VCH, 2006

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion
iv)	

F) Course Outcomes:		**Blooms Taxonomy**
CO1	Understanding of layout in imposition schemes.	
CO2	Gain information positive & negative working P.S plate.	
CO3	Understanding arrangment of wipe-on plat	

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	Practical	25
2.	Submission Practical record book	10
3.	Viva voce	15
Total Marks		**50**

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Mahavir Mahavidyalaya, Kolhapur (Autonomous)
Affiliated to Shivaji University, Kolhapur
(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation (B. Voc.) CBCS**		
Part	**II**	Semester	**IV**
Course	**Binding Techniques (Pr)**	Course Code	**AD A43 Practical**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022 - 23**
Total Credits	**04**	Contact Hours	**06 / Week**
Course Title			

B) Course Objectives:	
i)	To Study of automatic cutters, fixing and changing knives, folders & used in differents purposes.
ii)	To study of automatic gathering stitching machine & sewing machine
iii)	Understanding the working of perfect binding machine.
iv)	To Study of inline binding related operations.

C) Course Syllabi:
(CR = Credits / IH: Instructional Hours)

Practical	**CR**	**IH**
1. Studying and observing different types of automatic cutters, Fixing and changing knives, safety of cutters, maintenance & care.	4	75
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. Handlling wire stitching machine for side stitching and centre Stitching.		

5. Working functions of automatic stitching machines.		
6. Studying different types of sewing - side sewing, section sewing		
7. Understanding the working of perfect binding machine.		
8. Working gluing, in-line gluing (Modular binder) Smashing, rounding, Backing machine.		
9. Working and understanding case making, casing in machines.		
10. Working operations for hot foil stamping, die cutting, punching, Numbering, ruling machines.		

D) Reference Materials	
D1) Text Books for Reading	
1.	The binding Author : BRIDGET COLLINS
2.	Ultimate guide to book bindingAuthor : Matt marzullo
D2) Books for Reference	
1.	J. W. Burden Graphic Reproduction photography focal press LTD. London
2.	John Cogoli, Graphic Arts Photography B & W GAFT
3.	Fred Wentrel, Ray Blair and Tom Destre Graphic Arts Photography Color, GAFT
4.	Harald Kuppers, Basic Laws of Color Theory. RIT BkstBarrane& Tools

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion
iv)	

F) Course Outcomes:		Blooms Taxonomy
CO1	To gain information cutters, fixing and	
	changing knives, folders & used in differents purposes.	
CO2	Learn automatic gathering stitching machine & sewing machine	
CO3	Understanding working of perfect binding machine.	
CO4	Understanding of inline binding related operations.	

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	Practical	25
2.	Submission Practical record book	10
3.	Viva voce	15
Total Marks		**50**

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Mahavir Mahavidyalaya, Kolhapur (Autonomous)
Affiliated to Shivaji University, Kolhapur
(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation (B. Voc.) CBCS**		
Part	**II**	Semester	**IV**
Course	**Digital Printing (Pr)**	Course Code	**AD A42 Practical**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022 - 23**
Total Credits	**04**	Contact Hours	**06 / Week**
Course Title			

B) Course Objectives:	
i)	To Study of various types of scanner.
ii)	To give the information inkjet , laser jet and electro photography digital printing technology.
iii)	Understanding the hardware & software in digital systems.
iv)	To study of various scanner & Printers

C) Course Syllabi:
(CR = Credits / IH: Instructional Hours)

Practical	**CR**	**IH**
1. Study about scanner (Rotary Drum Scanner, Flatbed Scanner	4	75
2. Study about Inkjet digital printing technology → Continuous Jet, Drop-on-demand		
3. Study about Laser jet digital printing technology → Charging, Exposing, Developing, Transferring, Fusing/Cleaning **Raster Image Process**		
4. Comparative study of Electro photographic and Inkjet digital printing technology.		
5. Study about Hardware & Software used in digital printing technology → **CorelDRAW, Painter, and 3ds Max**		

D) Reference Materials	
D1) Text Books for Reading	
1.	Digital circuits and design.:Author : S Salivahanan
2.	Digital design : Author : M Morris Mano.
3.	Digital Color printing technology. Author : Bisbanath chakravarty
D2) Books for Reference	
1.	What printer should know about paper – Lawrence A. Wilson – GAFT Press
2.	Materials in Printing Processes – L. C. Young – Focal Press Publication
3.	Printing Ink Manual – Leach and Pierce – Springer Publication
4.	What Printer Should Know About Ink – Dr. Nelson R. Eldred – GAFT Press

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion
iv)	

F) Course Outcomes:		Blooms Taxonomy
CO1	Learn various types of scanner	
CO2	Understanding give the information inkjet , laser jet and electro photography digital printing technology	
CO3	Learn hardware & software in digital systems	

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	Practical	25
2.	Submission Practical record book	10
3.	Viva voce	15
Total Marks		**50**

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Mahavir Mahavidyalaya, Kolhapur (Autonomous)
Affiliated to Shivaji University, Kolhapur
(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation (B. Voc.) CBCS**		
Part	**II**	Semester	**IV**
Course	**Planography Web fed (Offset) (Pr)**	Course Code	**AD A41 Practical**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022 - 23**
Total Credits	**04**	Contact Hours	**06 / Week**
Course Title			

B) Course Objectives:	
i)	To Study of blanket mounting & dismounting blankets.
ii)	To understanding make ready process web-tension control mechanism.
iii)	To study single colour & multi- colour jobs.
iv)	To study of web-offset machine quality control aids in printing.

C) Course Syllabi:
(CR = Credits / IH: Instructional Hours)

Practical	**CR**	**IH**
1. Mounting and dismounting Blankets.	4	75
2. Learn make ready processes.		
3. To pass web with different threading diagrams		
4. To set web tension control mechanism		
5. To print single/multicolor jobs		
6. Run on problems and remedies		
7. Use and study of quality control aids in printing		
8. Mounting & Dismounting Blanket & Plate (Image carrier)		

D) Reference Materials	
D1) Text Books for Reading	
1.	Hand book of offset printing technology. Author : Engineers india research institute.
2.	The PIA/GATF Guide to Trouble shooting for the Offset Press Tomas M. Destree
3.	Printmaking A complete guide to materials and process Author : Bil fick and Beth Grabowskl.

D2) Books for Reference

1.	What printer should know about paper – Lawrence A. Wilson – GAFT Press
2.	Materials in Printing Processes – L. C. Young – Focal Press Publication
3.	Printing Ink Manual – Leach and Pierce – Springer Publication
4.	What Printer Should Know About Ink – Dr. Nelson R. Eldred – GAFT Press

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion

F) Course Outcomes:		Blooms Taxonomy
CO1	Learn blanket mounting & dismounting blankets.	
CO2	Understanding make ready process web-tension control mechanism.	
CO3	To gain information single colour & multi-colour jobs.	

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	Practical	25
2.	Submission Practical record book	10
3.	Viva voce	15
Total Marks		**50**

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Mahavir Mahavidyalaya, Kolhapur (Autonomous)
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(New syllabus under Autonomy to be introduced from June, 2022 onwards)

A) Primary Information:			
Programme	**Bachelor of Vocation (B. Voc.) CBCS**		
Part	**II**	Semester	**IV**
Course	**Digital Imposition (Pr)**	Course Code	**AD A44 Practical**
Paper No.	**--**	Course Type	**Semester**
Total Marks	**50 Marks**	Implementation	**2022 - 23**
Total Credits	**04**	Contact Hours	**06 / Week**
Course Title			

B) Course Objectives:	
i)	To Study imposition of 6 page pamphlet & 16 page prospectus.
ii)	To Study imposition of 40 page book & 2 up label.

C) Course Syllabi:
(CR = Credits / IH: Instructional Hours)

Practical	**CR**	**IH**
1. Working on imposition of 6 page pamphlet.	4	75
2. Working on imposition of 16 page prospectus.		
3. Working on imposition of 40 page book.		
4. Working on imposition of 2 up label.		

D) Reference Materials	
D1) Text Books for Reading	
1.	Digital media . Author : Lake S.
2.	Digital images processing Author :Rafale C. Gonzalez.
3.	Digital textbook versus print textbook Author : Jamie R. engbrecht.

D2) Books for Reference	
1.	What printer should know about paper – Lawrence A. Wilson – GAFT Press
2.	Materials in Printing Processes – L. C. Young – Focal Press Publication
3.	Printing Ink Manual – Leach and Pierce – Springer Publication
4.	What Printer Should Know About Ink – Dr. Nelson R. Eldred – GAFT Press
5.	Different types of imposition softwares

E) Suggested methods of Teaching:	
i)	Offline / Online teaching
ii)	Power Point Presentation
iii)	Group Discussion

F) Course Outcomes:		Blooms Taxonomy
CO1	Learn imposition of 6 page pamphlet & 16 page prospectus.	
CO3	Learn imposition of 40 page book & 2 up label.	

I) Question Paper Pattern (40 Marks)		
Q. No.	**Nature / Type of Question**	**Marks**
1.	Practical	25
2.	Submission Practical record book	10
3.	Viva voce	15
Total Marks		**50**

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