

**CHHATTISGARH SWAMI VEVEKANAND TECHNICAL UNIVERSITY, BHILAI**  
**Diploma in Printing Technology**

**SEMESTER-II**

S No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination					Total marks	Credit L+(T+P)/2
							Theory			Practical			
				L	T	P	ESE	CT	TA	ESE	TA		
1	Humanities	200211 (46)	Communication Skill –II	4	1	-	100	20	20	-	-	140	5
2	Basic Science	200212 (14)	Applied Math's-II	3	1	-	100	20	20	-	-	140	4
3	Electrical/Mechanical Engg	257211 (24/37)	Basic Engineering	3	1	-	100	20	20	-	-	140	4
4	Computer Science & Engg	200214 (22)	Computer Fundamental and its Applications	4	1	-	100	20	20	-	-	140	5
5	Mechanical Engg	200215 (37)	Engineering Drawing	2	4	-	100	20	20	-	-	140	4
6	Electrical/Mechanical Engg	257221 (24/37)	Basic Engineering Lab	-	-	2				50	20	70	1
7	Computer Science & Engg	200221 (22)	Computer Fundamental and its Applications Lab	-	-	6				100	20	120	3
8	Mechanical Engg	200223 (37)	Basic Non-conventional Energy Sources Lab	1		1				50	20	70	2
9	Humanities	200224 (46)	PPA	-	-	2				-	40	40	1
Total				17	8	11	500	100	100	200	100	1000	29

PPA – Proficiency in Professional Activity

L – Lecturer,

T – Tutorial,

P – Practical,

ESE – End Semester Exam,

CT – Class Test, TA – Teachers Assessment

# CHHATTISGARH SWAMI VEVEKANAND TECHNICAL UNIVERSITY, BHILAI

## Diploma in Printing Technology

### SEMESTER-III

S No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination					Total marks	Credit L+(T+P)/2
							Theory			Practical			
				L	T	P	ESE	CT	TA	ESE	TA		
1	Printing Tech	257311(57)	Warehousing and Book Binding	4	1	-	100	20	20	-	-	140	5
2	Printing Tech	257312 (57)	Composition	3	1	-	100	20	20	-	-	140	4
3	Printing Tech	257313 (57)	Printers Science	4	1	-	100	20	20	-	-	140	5
4	Printing Tech	257314 (57)	Allied Technology	4	1	-	100	20	20	-	-	140	5
5	Electronics &Telcom	257315 (28)	Basic Electronics	3	1	-	100	20	20	-	-	140	4
6	Printing Tech	257321 (57)	Warehousing and Book Binding Lab		-	3	-	-	-	50	25	75	2
7	Printing Tech	257322 (57)	Composition Lab		-	4	-	-	-	50	25	75	2
8	Printing Tech	257323 (57)	Allied Technology Lab		-	3	-	-	-	50	25	75	2
9	Electronics &Telcom	257324 (28)	Basic Electronics Lab		-	3				50	25	75	2
<b>TOTAL</b>				<b>18</b>	<b>5</b>	<b>13</b>	<b>500</b>	<b>100</b>	<b>100</b>	<b>200</b>	<b>100</b>	<b>1000</b>	<b>31</b>

L – Lecturer,

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# CHHATTISGARH SWAMI VEVEKANAND TECHNICAL UNIVERSITY, BHILAI

## Diploma in Printing Technology

### SEMESTER-IV

S No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination					Total marks	Credit L+(T+P)/2
							Theory			Practical			
				L	T	P	ESE	CT	TA	ESE	TA		
1	Printing Tech	257411(57)	Marketing Management	3	-	-	100	20	20	-	-	140	3
2	Printing Tech	257412 (57)	Press Work-I	4	1	-	100	20	20	-	-	140	5
3	Printing Tech	257413 (57)	Process Camera Work-I	4	1	-	100	20	20	-	-	140	5
4	Printing Tech	257414 (57)	Graphic Design	4	1	-	100	20	20	-	-	140	5
5	Printing Tech	257415 (57)	Image Carriers for Offset	4	1	-	100	20	20	-	-	140	5
6	Printing Tech	257421 (57)	Press Work-I Lab	-	-	4	-	-	-	50	25	75	2
7	Printing Tech	257422 (57)	Process Camera Work-I Lab	-	-	3	-	-	-	50	25	75	2
8	Printing Tech	257423 (57)	Graphic Design Lab	-	-	3	-	-	-	50	25	75	2
9	Printing Tech	257424 (57)	Image Carriers for Offset Lab	-	-	3				50	25	75	2
TOTAL				19	4	13	500	100	100	200	100	1000	31

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ESE – End Semester Exam,

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# CHHATTISGARH SWAMI VEVEKANAND TECHNICAL UNIVERSITY, BHILAI

## Diploma in Printing Technology

### SEMESTER-V

S No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination					Total marks	Credit L+(T+P)/2
							Theory			Practical			
				L	T	P	ESE	CT	TA	ESE	TA		
1	Printing Tech	257511(57)	Finishing Process	3	1	-	100	20	20	-	-	140	4
2	Printing Tech	257512 (57)	Press Work-II	4	1	-	100	20	20	-	-	140	5
3	Printing Tech	257513 (57)	Process Camera Work-II	4	1	-	100	20	20	-	-	140	5
4	Printing Tech	257514 (57)	Computerized Composition	3	1	-	100	20	20	-	-	140	4
5	Printing Tech	257515 (57)	Printers Costing and Estimating	3	1	-	100	20	20	-	-	140	4
6	Printing Tech	257521 (57)	Finishing Process Lab	-	-	3	-	-	-	50	25	75	2
7	Printing Tech	257522 (57)	Press Work-II Lab	-	-	4	-	-	-	50	25	75	2
8	Printing Tech	257523 (57)	Process Camera Work-II Lab	-	-	3	-	-	-	50	25	75	2
9	Printing Tech	257524 (57)	Computerized Composition Lab	-	-	4	-	-	-	50	25	75	2
<b>TOTAL</b>				17	5	14	500	100	100	200	100	1000	30

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ESE – End Semester Exam,

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# CHHATTISGARH SWAMI VEVEKANAND TECHNICAL UNIVERSITY, BHILAI

## Diploma in Printing Technology

### SEMESTER-V

S No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination					Total marks	Credit L+(T+P)/2
							Theory			Practical			
				L	T	P	ESE	CT	TA	ESE	TA		
1	Mechanical Engg	200615(37)	Entrepreneurship Development	4	1	-	100	20	10	-	-	130	5
2	Printing Tech	257611 (57)	Business Management and Accountancy	3	1	-	100	20	20	-	-	140	4
3	Printing Tech	257612 (57)	Print Media Advertising	3	1	-	100	20	20	-	-	140	4
4	Printing Tech	257613 (57)	Advance Reproduction System	3	1	-	100	20	20	-	-	140	4
5	Printing Tech	257614 (57)	Packaging and Converting	3	1	-	100	20	20	-	-	140	4
6	Printing Tech	257621 (57)	Print Media Advertising	-	-	3	-	-	-	50	25	75	2
7	Printing Tech	257622 (57)	Advance Re-production System Lab	-	-	3	-	-	-	50	25	75	2
8	Printing Tech	257623 (57)	Packaging and Converting Lab	-	-	3	-	-	-	50	25	75	2
9	Printing Tech	257624 (57)	Project	-	-	6				60	25	85	3
<b>TOTAL</b>				16	5	15	500	100	90	210	100	1000	30

L – Lecturer,

T – Tutorial,

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ESE – End Semester Exam,

CT – Class Test, TA – Teachers Assessment

**CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL  
UNIVERSITY, BHILAI**

- (A) SEMESTER : III**  
**(B) COURSE TITLE : WARE HOUSING AND BOOK BINDING**  
**(C) CODE (Theory) : 257311 (57)**  
**(D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY**  
**(E) TEACHING AND EXAMINATION SCHEME :**

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257311 (57)	4	1	-	100	20	20			140	5
257321 (57)	-	-	3	-	-	-	50	25	75	2

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	INTRODUCTION TO BINDING	4	5
2	2	TOOLS AND EQUIPMENTS	5	20
3	3	COVERING MATERIALS	6	10
4	4	KINDS AND STYLES OF BOOK BINDING	15	20
5	5	OPERATION FOR BINDING	15	20
6	6	FORWARDING OPERATION	15	10
7	7	ADHESIVE	10	5
8	8	SIMPLE BINDING CALCULATION	10	10

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1: Introduction to Binding :**

- 1.1 Definition.
- 1.2 Brief history.
- 1.3 Necessity and application.

**Chapter 2 : Tools and Equipments :**

- 2.1 Nomenclature and their use.

**Chapter 3 : Covering Materials :**

- 3.1 Paper ; their varieties. Qualities in regards to finishing operation and their sizes.
- 3.2 Cards and boards ; their varieties, availabilities and qualities in regards to finishing operation.

**Chapter 4 : Kinds and styles of Book Binding :**

- 4.1 Letter press and stationary binding, their classifications.
- 4.2 Styles of binding ; quarter, half and full bound books.

**Chapter 5 : Operation for binding :**

- 5.1 Jogging.
- 5.2 Counting.
- 5.3 Folding.
- 5.4 Gathering ; collating and beating.
- 5.5 Cutting and trimming.
- 5.6 Treatments of plates and maps.
- 5.7 Sewing ; different kinds of sewing.
- 5.8 Wire stitching ; different machines and kinds of stitching.
- 5.9 End paper ; their kinds. Preparation process, uses and advantages.

**Chapter 6 : Forwarding Operations :**

- 6.1 Type of forwarding ; in-board and out-board.
- 6.2 Lace in-board.
- 6.3 Preparation of grooves.
- 6.4 Pasting up of covering material.
- 6.5 Pasting down the end paper.

**Chapter 7 : Adhesive :**

- 7.1 Kind of adhesives ; natural, prepared and synthetic.
- 7.2 Their preparation, properties and application.

**Chapter 8 : Simple binding calculations.**

**COURSE TITLE : Ware Housing And Book Binding Lab**

**PRACTICAL CODE : 257321 (57)**

**TOTAL HOURS : 48**

**LIST OF PRACTICALS :**

1. Study of tools, equipments and machinery, their uses and care in handling
2. Material and supplies essential for a book binding department.
3. Folding, counting and jogging, gathering, collating.
4. Side and saddle, odd and even number stitching.
5. End papers.
6. Binding styles ; quarter bound, cut flush, turn-in and sawn- in sewing.
7. Duplicates books, triplicate books.
8. Production of scribbling pad.
9. Index book.
10. Case making and other operations involved in case binding
11. Publisher binding.
12. Preparation of adhesive

**REFERENCE BOOKS :**

<b>No.</b>	<b>Title of Book</b>	<b>Author</b>	<b>Publishers Name</b>
1.	Binding & finishing	Mendiratta	-
2.	Binding & finishing	-	GATF
3.	Binding & finishing	Potter	-
4.	Focus on book binding	A.M. Patne	-
5.	Elements of binding	A.M.Patne	-
6.	Modern Book Binding	Alex J. Vaughan	-
7.	Finishing Processes in Printing -	A.G. Martin	-
8.	Manual of Book Binding	W. Johnson	-
9.	Book binding and the Care of Books	Douglas Cockrell	-

# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

- (A) SEMESTER : III  
 (B) COURSE TITLE : COMPOSITION  
 (C) CODE (Theory) : 257312 (57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination					Credit L+ (T+P)/2	
	L	T	P	Theory			Practical			Total Marks
				ESE	CT	TA	ESE	TA		
257312 (57)	3	1	-	100	20	20	-	-	140	4
257322 (57)	-	-	4	-	-	-	50	25	75	2

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	Composing Room Material and Equipments	10	20
2	2	Composing Measurement	5	10
3	3	Type	8	10
4	4	Proof Reading	8	10
5	5	Imposition	8	10
6	6	Copy Preparation	5	10
7	7	Composition Calculations	8	10
8	8	An Introduction to Mechanical and Photo type Setters	12	20

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1 : Composing Room Material and Equipments**

- 1.1 An introductory knowledge of materials used in section, types, spacing materials, Rules, borders ladders and furniture.
- 1.2 Equipment and machines used in composition section, cases, racks, sticks, gallies, locking up devices, chases, proofing press, twizzer, lead and rule cutter, metering machine Em scale, blower, cleaning device.

**Chapter 2 : Composing measurement :**

- 2.1 Em, En, Values of spaces in terms of units, Em theory and its applications.
- 2.2 Point System.

**Chapter 3 : Type :**

- 3.1 Introduction to Hindi and English distinguished type faces and their size range.
- 3.2 Introduction to different type setting, text, heading, sub-heading, poem, tabular work.

**Chapter 4 : Proof Reading :**

- 4.1 Identification of proof reading marks.
- 4.2 Proof reader and copy holder.

**Chapter 5 : Imposition :**

- 5.1 Basic rules of imposition.
- 5.2 Page sizes and margins.
- 5.3 Sheet and half sheet works.
- 5.4 Determination of margins, gutter, gripper and side margins.
- 5.5 Regular and irregular imposition schemes.

**Chapter 6 : Copy Preparation :**

- 6.1 Style of House.
- 6.2 Pre make ready and reproduction of proof procedures.
- 6.3 Dummy; its importance and preparation.

**Chapter 7 : Composition Calculations :**

- 7.1 Composing measurements, En, Em and value of spaces in terms of units. Em Theory and its application to page area.
- 7.2 Knowledge of point system, application to type, spacing materials, weight of type and spacing materials.

**Chapter 8 : An Introduction to Mechanical and photo type Setters :**

- 8.1 Mono type setting.
- 8.2 Lino type setting.
- 8.3 Photo type setting.

**COURSE TITLE : COMPOSITION LAB**

**PRACTICAL CODE : 257322(57)**

**TOTAL HOURS : 64**

**LIST OF PRACTICALS :**

1. Introduction to composing room, materials and equipments.
2. Knowledge of English and Hindi cases (upper and lower).
3. Composing practice; holding stick, measurement setting, English composition.
4. Distribution practice.
5. Composition in different style; text, heading, subheading, poem, tabular work etc.
6. Proof reading; knowledge of proof reading marks, correction using proof reading marks.
7. Imposition; page size and margins, sheet and half sheet work, regular and irregular imposition schemes.
8. Proofing operation.

**REFERENCE BOOKS :-**

1. Hand Book of Composition (Hindi/English Version) - Chandrashakhar Mishra (Anupam Prakashan Allahabad)
2. Lithographer's Manual - Charles Shapiro (GATF)
3. Theory and Practice of Composition - A.C. Goel

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# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

- (A) SEMESTER : III  
 (B) COURSE TITLE : PRINTERS SCIENCE  
 (C) CODE (Theory) : 257313 (57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257313 (57)	4	1	-	100	20	20	-	-	140	5

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	Metals	15	10
2	2	Non-metals	10	30
3	3	INK	20	30
4	4	Chemistry of Light Sensitive Materials	15	15
5	5	Electrolysis	10	5
6	6	Numerical	10	10

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1 : METALS :**

- 1.1 An introduction to metals used in Printing industry, lead, tin, copper, zinc, aluminum, iron Their physical and chemical properties.
- 1.2 Different alloys used in printing industry type- alloy, alloy for gravure cylinder, their combination and qualities.
- 1.3 Quality factors for metals and alloys used in printing, water affinity, acid and alkali reactions and heat reaction.

**Chapter 2 : NON-METALS :**

- 2.1 Paper and board gelatin, celluloid's, polyesters, fiber, plastics, their structure, sources, and their use in the industry.
- 2.2 Outline of paper manufacturing.
- 2.3 Paper tests, smoothness, opacity, elasticity, oil absorbency, folding durance, tensil strength, bursting strength, identification of fibers, chemical nature of papers, boards and cards.
- 2.4 Effect of heat, moisture and PH on different stocks.

**Chapter 3 : INK :**

- 3.1 Ink pigments, vehicles and modifier, their sources and characteristics.
- 3.2 Composition of inks for off-set, letter press, gravure, screen-printing and flexography.
- 3.3 Physical and chemical properties of ink.
- 3.4 Ink drying : drying methods of ink, effect of PH, humidity and temperature on ink drying, drying of ink in relation to stock surface.
- 3.5 Outline of ink manufacturing process.

**Chapter 4 : CHEMISTRY OF LIGHT SENSITIVE MATERIALS :**

- 4.1 Photographic materials, silver compounds and gelatins, developers, fixers and after treatment chemicals their compositions and chemical reactions.
- 4.2 Other light sensitive materials, dichromates, diazo and other patented materials used in printing industry.

**Chapter 5 : ELECTROLYSIS :**

- 5.1 Principles of electrolysis.
- 5.2 Electrolysis as applicable in plate making.

**Chapter 6 : NUMERICALS :**

- 6.1 Ink mileage calculations, paper wastage calculations.
- 6.2 Ream weight and G.S.M. Conversion, real weight and G.S.M. calculations.

**REFERENCE BOOKS :-**

- 1. Printing Science - Young and pateman
- 2. Printing Basic Science - Wallis - Pergaman
- 3. What the Printer should know about Ink - Scarlett (GATF)
- 4. What the printer should know about paper - Bureau - (GATF)
- 5. Printer Science - Muler & Cope - (GATF)
- 6. printing Technology - Delmar Publication.

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# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

(A) SEMESTER : III  
 (B) COURSE TITLE : ALLIED TECHNOLOGY  
 (C) CODE (Theory) : 257314(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257314 (57)	4	1	-	100	20	20	-	-	140	5
257323 (57)	-	-	3	-	-	-	50	25	75	2

(F) DISTRIBUTION OF MARKS AND HOURS :

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	INTRODUCTION TO PRINTING PROCESSES	15	20
2	2	SCREEN PRINTING PROCESS	25	30
3	3	FLEXOGRAPHY	15	20
4	4	GRAVURE PRINTING	25	30

(G) DETAILED COURSE CONTENTS :

**Chapter 1 : Introduction to Printing Processes :**

- 1.1 Classification of Printing Processes
- 1.2 Silk Screen Printing
- 1.3 Flexographic Printing.
- 1.4 Gravure Printing,

**Chapter 2 : Screen Printing Process :**

- 2.1 Terminology and applications.
- 2.2 Materials and equipments used in screen printing.
- 2.3 Advantages and limitations of screen printing.
- 2.4 Screen preparation.
- 2.5 Methodology of printing by screen process.
- 2.6 Removal of screen image for re-use
- 2.7 Drying techniques.
- 2.8 Screen printing of different surfaces.
- 2.9 Automation in screen printing.

**Chapter 3 : Flexography :**

- 3.1 Terminology and application.
- 3.2 Materials and equipments.
- 3.3 Advantages and limitations of process.
- 3.4 Image carrier, preparation and press operation.
- 3.5 Flexoprinting on different surfaces.

**Chapter 4 : Gravure Printing :**

- 4.1 Terminology and application.
- 4.2 Materials and equipments.
- 4.3 Advantages and limitations.
- 4.4 Cylinder preparation,
- 4.5 General features of gravure printing machine.
- 4.6 Multi colour gravure printing.

**COURSE TITLE : ALLIED TECHNOLOGY LAB**

**PRACTICAL CODE : 257323 (57)**

**TOTAL HOURS : 48**

**LIST OF PRACTICALS :**

1. Introduction to Screen Printing Section :- tools, equipments and materials.
2. Screen Mounting.
3. Grouping and ganging of Transparencies.
4. Screen coating Practices.
5. Exposing Techniques.
6. Image Correction.
7. Print Practices, (Single Colour.)
8. Multi Colour Printing.
9. Print Practices on various surfaces.
- 10 De-coating Operations.

**REFERENCE BOOKS :-**

1. Handbook of printing processes - GATF
2. Modern printing processes
3. Survey of printing processes - Krishnamurthy
4. Printing Technology - Delmar publication
5. Lithography - Ian Faux, Blue print.
6. Printing Technology; Adams, Faux and Rieber.
7. Lithographers Manual, - GATF
8. Modern Gravure Technology - Herry B. Smith

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# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

- (A) SEMESTER : IV  
 (B) COURSE TITLE : PRESS WORK - I  
 (C) CODE (Theory) : 257412(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination					Credit L+ (T+P)/2	
	L	T	P	Theory			Practical			Total Marks
				ESE	CT	TA	ESE	TA		
257412 (57)	4	1	-	100	20	20	-	-	140	5
257421 (57)	-	-	4	-	-	-	50	25	75	2

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	INTRODUCTION	8	10
2	2	LETTER PRESS	16	30
3	3	OFFSET	8	10
4	4	HANDLING SYSTEMS	8	5
5	5	INKING SYSTEMS	8	5
6	6	DAMPING SYSTEMS	8	5
7	7	PRINTING UNIT	8	10
8	8	MATERIALS	4	10
9	9	PRINTING OPERATIONS	12	15

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1 : INTRODUCTION :**

- 1.1 Principles of Letter press, Lithography and Gravure printing.
- 1.2 Job suitability of different printing processes.
- 1.3 Identifying features of prints from different printing processes.

**Chapter 2 : LETTER PRESS :**

- 2.1 An introductory knowledge of tradles, cylinder machines and rotary presses.
- 2.2 Limitations of letter press printing.

**Chapter 3 : OFFSET :**

- 3.1 Classification of Offset machines.
- 3.2 General features of offset presses.

**Chapter 4 : HANDLING SYSTEMS :**

- 4.1 Different feeders; their limitation, features.
- 4.2 Delivery systems; their kinds and features.

**Chapter 5 : INKING SYSTEMS :**

- 5.1 Different inking systems and their features.
- 5.2 Requirements of an ideal Inking system.

**Chapter 6 : DAMPING SYSTEMS :**

- 6.1 Classification of different damping systems.
- 6.2 Requirements of an ideal dampening systems.

**Chapter 7 : PRINTING UNIT :**

- 7.1 Structural features of plate cylinder, different designs of plate cylinders, plate clamping systems.
- 7.2 Structural features of blanket cylinder, different designs of blanket cylinder.
- 7.3 Structural features of impression cylinder.
- 7.4 Impression yielding, printing squeeze, nip, peel angle, length of print in relation to circumference.
- 7.5 Bearer contact and bearer clearance systems, their working and features.

**Chapter 8 : MATERIALS :**

- 8.1 Blanket; kinds of blankets, suitability for different jobs, construction of blanket, blanket troubles, their rectification, care and maintenance of offset blanket. Qualities of an ideal blanket.
- 8.2 Rollers; different rollers, their materials, qualities, features, troubles and rectification, maintenance.

**Chapter 9 : PRINTING OPERATIONS :**

- 9.1 Make ready procedure for single colour sheet fed machine.
- 9.2 Running defects; scumming, tinting, emulsification, hickies, show through set-off, static electricity etc. their identification and rectification.
- 9.3 Quality control factors; PH, Temperature, Humidity, stock conditioning, speed etc.
- 9.4 Colour sequence in multi colour printing on single colour sheet fed machine press.

**COURSE TITLE : PRESS WORK - I LAB**

**PRACTICAL CODE : 257421 (57)**

**TOTAL HOURS : 68**

**LIST OF PRACTICALS :**

1. Introduction to letter press machine room, tools, equipments and machineries.
2. Detail introduction to tradle machines and preparatory operations.
3. Detail introduction to cylinder machine and its preparatory operations,
4. Preparation of chase; locking up, single, double, four page, window chase.
5. Feeding practice on platen machine.
6. Feeding practice on automatic sheet feeder.
7. Tradle machine operation; proofing, underlaying, registration and final printing.
8. Auto fed tradle operation.
9. Feeding practice on cylinder machines.
10. Introduction to offset machine room, tools, equipments and machineries and pre make-ready work.
11. Paper handling, jogging and pile preparation.
12. Feeder setting.
13. Printing unit setting; mounting and dismounting of dampening rollers, plate clamping, ink duct setting.
14. Setting delivery.
15. Machine operation; preparation of make-ready book and trial impression, taking pass sheet.
16. Print examination locating errors and their remedies.
17. Cleaning operations.

**REFERENCE BOOKS :-**

1. Machine Printing - Durrant.
2. Litho Offset Press Operation - Latham (GATF)
3. Printing Technology – Adams Delmar Publication
4. Letter Press Printing - C.S. Mishra .

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**CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL  
UNIVERSITY, BHILAI**

(A) SEMESTER : IV  
 (B) COURSE TITLE : PROCESS CAMERA WORK - I  
 (C) CODE (Theory) : 257413(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination					Credit L+ (T+P)/2	
	L	T	P	Theory			Practical			Total Marks
				ESE	CT	TA	ESE	TA		
257413 (57)	4	1	-	100	20	20	-	-	140	5
257422 (57)	-	-	3	-	-	-	50	25	75	2

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	INTRODUCTION	10	10
2	2	PROCESS OPTICS	25	30
3	3	CAMERA PRACTICE	15	20
4	4	LIGHT SENSITIVE MATERIALS AND ILLUMINANTS	15	20
5	5	HALF TONE REPRODUCTION	15	20

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1 : INTRODUCTION :**

- 1.1 Definition and brief exposure to the history of photography.
- 1.2 Nomenclature of tools, equipments and machines used in the process section and their brief description.
- 1.3 List of materials :- names of chemicals and materials used for negative and positive making, names of chemicals and materials used for block making.
- 1.4 Introduction of different copies, line, continuous tone and colour, their suitability for different printing processes.

**Chapter 2 : PROCESS OPTICS :**

- 2.1 Process Camera, Classification of process cameras, their description.
- 2.2 Enlargers, contact- printers, their brief description and use.
- 2.3 Mechanical and optical principles; scalling camera, aperture, magnification, V-Ratio, conjugate foci and others.
- 2.4 Straight line and lateral reversal.
- 2.5 Lens, mirrors, their use and principles, qualities of ideal lens, lens defects and their remedies.

**Chapter 3 : CAMERA PRACTICE :**

Making line and half tone reproduction for offset and letter press.

Development :- kinds of developers, their specific features.

Fixing and after treatment.

**Chapter 4 : LIGHT SENSITIVE MATERIALS AND ILLUMINANTS :**

- 4.1 Mono, Ortho and Pan emulsions and their handling, safe light.
- 4.2 Different illuminants and their special features.
- 4.3 Relation between spectra emission and sensitivity.
- 4.4 Construction and interpretation of & characteristic of time/gamma curves.
- 4.5 Measuring photographic density and types of densitometers.
- 4.6 Factors governing exposure and development.

**Chapter 5 : HALF TONE REPRODUCTION :**

- 5.1 Introduction of glass crossline screen, rectangular and circular screen.
- 5.2 Screen distance.
- 5.3 Theories of halftone dot formations, Pinhole, diffraction and penumbra theory of dot formation.
- 5.4 Determination of Exposure time in relation to F/no.
- 5.5 Halftone exposure, single and multiple exposures for half tone reproduction.
- 5.6 Identifying features of different tones.

**COURSE TITLE : PROCESS CAMERA WORK - I LAB**

**PRACTICAL CODE : 257422 (57)**

**TOTAL HOURS : 48**

**LIST OF PRACTICALS :**

1. Introduction to process camera department; tools, equipments and materials.
2. Introduction to different copies, line, continuous tone and combination copies, colour originals.
3. Detail introduction to horizontal and vertical cameras; their parts and functions
4. Mounting of copy in copy board; positioning and centering
5. Focusing
6. Film handling; cutting, mounting and placing
7. Line negative making of black and white copy
8. Print examination; errors and remedies of different defects
9. Contact printing
10. Half tone practice; screen distance calculation, stop determination (single and multiple exposure methods), half tone exposure and film processing
11. Block making; sheet cutting and preparation, coating and metal printing and other block making operations
12. Mounting and proofing of blocks

**REFERENCE BOOKS :-**

1. Desk Top design 2nd Edition - Brian Cookman
2. Desk Top Publishing Design Basics - Published by Alan Holmes
3. Printing Industry - Victor Strauss
4. Lithographer's Manual - Charles Shapiro
5. Reproduction photography for Lithography - Eric. Chambers, GATF
6. Graphic Reproduction Photography - J.W. Burden, Focal press, London
7. The Lithographer's Manual - GATF - 9th Edition
8. Hand book of Modern Halftone photography - perfect Graphic A Demarset, USA
9. Sensitometry for photographers, Focal Press, London.
10. Printing Technology - J. Michael Adams David, D.Faux, Lloyd. J.Rie - Delmar publishers.
11. J.R. SPSE Handbook of photographic Science and Engineering - Wood Thomas, John Wiley and sons.

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**CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL  
UNIVERSITY, BHILAI**

(A) SEMESTER : IV  
 (B) COURSE TITLE : GRAPHIC DESIGN  
 (C) CODE (Theory) : 257414(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination					Credit L+ (T+P)/2	
	L	T	P	Theory			Practical			Total Marks
				ESE	CT	TA	ESE	TA		
257414 (57)	4	1	-	100	20	20	-	-	140	5
257423 (57)	-	-	3	-	-	-	50	25	75	2

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	DEFINITION AND PRINCIPLES	15	20
2	2	ELEMENTS OF DESIGN	10	15
3	3	TYPOGRAPHY	10	10
4	4	LAYOUT	15	20
5	5	DUMMY	10	10
6	6	COLOUR	10	15
7	7	JOB DESIGNING	10	10

**(G) DETAILED COURSE CONTENTES :**

**Chapter 1 : DEFINITION AND PRINCIPLES :**

- 1.1 Definition of graphic design and its application.
- 1.2 Principles of design; balance, harmony, unity, contrast, rhythm, proportion, optical center and simplicity.

**Chapter 2 : ELEMENTS OF DESIGN :**

- 2.1 Terminology; point, line space, shape, mass, size and scale, colour, tone, shade, textures, patterns, etc.

**Chapter 3 : TYPOGRAPHY :**

- 3.1 Type fundamentals, main groups of type faces, type series, type family.
- 3.2 Selection of type faces; in relation to the subject or product, printing process, different printable surfaces (stock)
- 3.3 Legibility and Readability.

- Chapter 4 : LAYOUT :**
- 4.1 Definition.
  - 4.2 Difference between layout and Design.
  - 4.3 Elements of layout.
  - 4.4 Materials, equipments and techniques applicable in preparation of layout.
  - 4.5 Stages of layout.
  - 4.6 Types of layout and Formets.
  - 4.7 House style, trade mark, trade name, mono, logo, emblem.
- Chapter 5 : DUMMY :**
- 5.1 Dummy preparation.
  - 5.2 Importance of dummy.
  - 5.3 Application and advantages.
- Chapter 6 : COLOUR :**
- 6.1 Terminology; Warm and cold colours, hue, brightness, depth, shade, tint, etc.
  - 6.2 Colour wheel : description, location of different colours their name and relation to each other
  - 6.3 Colour Principles; primary, secondary and tertiary colours, complimentary colour, Additive and substrative mixing of colours.
  - 6.4 Colour mood: nature of different colours, choice and effective use of colours, choice and effective.
  - 6.5 Selection of colours for two, three or four colours jobs,
- Chapter 7 : JOB DESIGNING :**
- 7.1 Office stationary.
  - 7.2 Commercial work.
  - 7.3 Social and others.
  - 7.4 Package design.

**COURSE TITLE : GRAPHIC DESIGN LAB**

**PRACTICAL CODE : 257423(57)**

**TOTAL HOURS : 48**

**LIST OF PRACTICALS :**

1. Introduction to Design room; tools, equipments and materials.
2. Acquaintance with the English and Hindi characters on unit basis.
3. Introduction to different strokes an finishing strokes.
4. Designing English Characters both Capital and Small.
5. Italic Character designing.
6. Designing; visiting cards, personal and commercial letterheads, invitation cards.
7. Lay outing of Office Stationary, Commercial jobs.
8. Multicolor work in designing Book cover, book jackets, labels and others.
9. Preparing finished layout and layout for reproduction.
10. Design for advertising, handbills and posters.
11. Dummy preparations for different jobs.

**REFERENCE BOOKS :-**

1. Fundamental of layout - F.H.Wills.
2. Copy Preparation - Cabibi
3. Advertising Art and Idea - Dr. G.M. Rege.
4. Designer Printing Companion - H.T. Negro.
5. Design Print and Communication - N.N. Sarkar.
6. Designer Prepress Companion - F.J. Rommano and Ors
7. Designer Postpress Companion - M.G. Keif

# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

(A) SEMESTER : IV  
 (B) COURSE TITLE : IMAGE CARRIERS FOR OFFSET.  
 (C) CODE (Theory) : 257415(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257415 (57)	4	1	-	100	20	20	-	-	140	5
257424 (57)	-	-	3	-	-	-	50	25	75	2

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	INTRODUCTION	5	5
2	2	GRAINS	10	15
3	3	COLLOIDS AND COATINGS	10	10
4	4	KINDS OF OFFSET PLATES	15	20
5	5	PRINTING DOWN	5	5
6	6	QUALITY CONTROL	5	10
7	7	IMPOSITION	10	10
8	8	STORAGE AND PRESERVATION	5	10
9	9	MODERN PLATE MAKING METHODS	15	15

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1 : INTRODUCTION :**

- 1.1 Principle of lithography.
- 1.2 Historic development of lithography; stone preparation, litho writing, transfer papers.

**Chapter 2: GRAINS :**

- 2.1 Importance of grains in offset plates.
- 2.2 Kinds of grains and their specific qualities suitable for variety of jobs.
- 2.3 Graining methods; mechanical, chemical and electrochemical.

**Chapter 3 : COLLOIDS AND COATINGS :**

- 3.1 Natural colloids used in plate coating, gum, egg, glue, their preparation, sensitization and preservation.
- 3.2 Synthetic coating; wipe on, water deep etch, presensitised coating, their ingredients and qualities.
- 3.3 Whirler; horizontal and vertical, their design, working, effect of R.P.M. on plate coating.

**Chapter 4 : KINDS OF OFFSET PLATES :**

- 4.1 Albumen plates (surface plate) preparation and job suitability.
- 4.2 Wipe on plates, plate preparation and quality of image.
- 4.3 Deep etch plates; gum deep etch and water deep etch, their preparation and quality.
- 4.4 P.S. plates ; preparation and its quality.
- 4.5 Introduction to polyester master; their preparation, use and limitation.

**Chapter 5 : PRINTING DOWN :**

- 5.1 Exposure ; selection of light source in printing down (plate exposure), sun light, gas filled lamps, arc metal helides.
- 5.2 Types of printing down frames their structure and operations.
- 5.3 Justification of length of exposure in relation to intensity of light, distance from plate, dimension of plate, coating thickness, and plate sensitivity, room temperature and humidity, sensitivity of coating.

**Chapter 6: QUALITY CONTROL :**

- 6.1 Star target.
- 6.2 Integrating light meter.
- 6.3 Gray scale.
- 6.4 Dot gain and loss.
- 6.5 Register punch; its design and operation, and colour control bar, space, different margins.

**Chapter 7 : IMPOSITION :**

- 7.1 Pasting table, its design and use.
- 7.2 Tools; ruler scalper, brushes, air brushes, set squares, rotor pens, etc, their design and use.
- 7.3 Materials; cleaning materials, opaque solution, writing ink, transparent and opaque tapes, goldenrod paper (opaque paper) film laying sheets (plastic, cellophanes, astralon etc.) graph sheets.
- 7.4 Job planning, work and turn, work and tumble, section wise layouts, determination of white space.
- 7.5 Pasting of negatives & positives, register marks, finishing marks, blue key, red key.

**Chapter 8: STORAGE AND PRESERVATION :**

- 8.1 Storage and preservation of plates, made and used plates.
- 8.2 Storage and preservation of paste ups for successive jobs.

**Chapter 9 : MODERN PLATE MAKING METHODS :**

- 9.1 Automatic plate processor, its design, working and its advantages.
- 9.2 Electrostatic, chemical transfer, photo direct, direct image, projection plate making, dry offset, laser exposed plate.
- 9.3 Step and repeat machine its design and working.

**COURSE TITLE : IMAGE CARRIERS FOR OFFSET LAB**

**PRACTICAL CODE : 257424(57)**

**TOTAL HOURS : 48**

**LIST OF PRACTICALS :**

1. Introduction to plate making room; tools, materials, equipments and machines
2. Introduction to Graining machine section; materials used in graining.
3. Graining operation for different kind of jobs.
4. Mechanical preparation for different jobs both positive and negative working.
5. Plate preparation by Albumen method.
6. Wipe on process.
7. Gum deep etch and water deep etch plate preparation.
8. Pre sensitized plates and their preparation.
9. Plate preservation and storage.
10. Introduction to automatic plate processor its parts and their functions.

**REFERENCE BOOKS :-**

1. Lithographers manual - GATF
2. Manual for film planning and plate making - Gate house and Roper - film planning.
3. Offset lithographic plate making - R. Reed (GATF)
4. Stripping of Assembly of film images - GFATF
5. Hand book of printing process - Deborahl. Sterenson.
6. Lithography Image Carrier - C.S. Mishra.

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# CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

(A) SEMESTER : V  
 (B) COURSE TITLE : FINISHING PROCESS.  
 (C) CODE (Theory) : 257511(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination					Credit L+ (T+P)/2	
	L	T	P	Theory			Practical			Total Marks
				ESE	CT	TA	ESE	TA		
257511 (57)	3	1	-	100	20	20	-	-	140	4
257521 (57)	-	-	3	-	-	-	50	25	75	2

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	RULING	5	10
2	2	MISCELLENEOUS OPERATIONS	18	30
3	3	LAMINATION	5	10
4	4	LEDGER BINDING	8	10
5	5	EDGE DECORATION	8	10
6	6	REBINDING	8	10
7	7	AUTOMATION IN THE BINDING	12	20

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1 : RULING :**

- 1.1 Introduction.
- 1.2 Styles of ruling
- 1.3 Ruling machines, their introduction and operation.

**Chapter 2 : MISCELLENEOUS OPERATIONS :**

- 2.1 Folding; regular and irregular folding.
- 2.2 Punching.
- 2.3 Perforating.
- 2.4 Eyeletting.
- 2.5 Indexing.
- 2.6 Round cornering
- 2.7 Label punching.
- 2.8 Creasing, etc.
- 2.9 Spiral Binding.

**Chapter 3 : LAMINATION :**

- 3.1 Introduction.
- 3.2 Materials required.
- 3.3 Machine, its features and operation.

**Chapter 4 : LEDGER BINDING :**

- 4.1 Sewing.
- 4.2 Spring back.
- 4.3 Covering.
- 4.4 Binding and lacing.
- 4.5 Indexing.
- 4.6 Metal fittings.
- 4.7 Finishing.

**Chapter 5 : EDGE DECORATION ;**

- 5.1 Introduction and kinds.
- 5.2 Materials, tools and equipments used for edge decoration.
- 5.3 Sequence of operations.

**Chapter 6 : REBINDING :**

Materials and operation involved in rebinding.

**Chapter 7 : AUTOMATION IN THE BINDING :**

- 7.1 Folding Machine.
- 7.2 Gathering Machine.
- 7.3 Wire Stitching machine.
- 7.4 Sewing Machine.
- 7.5 Three Knife trimmer.
- 7.6 Modern Gullotines.
- 7.7 Back Glueing machine.
- 7.8 Rounding and Backing.
- 7.9 Case Making and Casing in Machine.

**COURSE TITLE : FINISHING PROCESS LAB**

**PRACTICAL CODE : 257521(57)**

**TOTAL HOURS : 48**

**LIST OF PRACTICALS :**

1. Introduction to ruling machine, its parts and their functions.
2. Preparation of ruling machine for different ruling styles.
3. Ruling operation.
4. Miscellaneous Operations; punching, perforating, eyeletting, indexing, round cornering, punching, creasing and spiral binding.
5. Lamination, Introduction to machine and its parts.
6. Lamination materials; their introduction and use.
7. Lamination machine operation.
8. Ledger binding; Sewing, spring back, covering, lacing and other finishing operations.
9. Edge Decoration.
10. Binding of old books.

**REFERENCE BOOKS :-**

1. Finishing processes in Printing - Martin
2. Binding and Finishing - B.D. Mediratta.

# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

- (A) SEMESTER : V  
 (B) COURSE TITLE : PRESS WORK - II  
 (C) CODE (Theory) : 57512(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination					Credit L+ (T+P)/2	
	L	T	P	Theory			Practical			Total Marks
				ESE	CT	TA	ESE	TA		
257512 (57)	4	1	-	100	20	20	-	-	140	5
257522 (57)	-	-	4	-	-	-	50	25	75	2

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	SHEET FED PERFACTOR	5	10
2	2	MULTI COLOUR PRESSES	25	20
3	3	DRY OFF-SET	5	10
4	4	STOCK	5	10
5	5	QUALITI CONTROL	10	20
6	6	PRESS ROOM CALCULATIONS	10	10
7	7	MODERN DEVEOLPMENTS IN OFF-SET PRESSES	20	20

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1: SHEET FED PERFACTOR :**

- 1.1 Defining sheet fed perfactor; feature of sheet fed perfactors.
- 1.2 General features of sheet fed convertible machine.

**Chapter 2 : MULTI COLOUR PRESSES :**

- 2.1 General features of two, four and more unit multi colour machines.
- 2.2 Make ready on multi colour Offset Machine.
- 2.3 Colour sequence in multi colour presses their justification.
- 2.4 Troubles with multi colour presses, their identification and rectification.
- 2.5 Regular and periodical maintenance in multi colour presses.

**Chapter 3 : DRY OFF-SET :**

General features and limitation of dry offset machines.

**Chapter 4 : STOCK :**

Kinds of paper, cards, boards and other printable materials and their suitability for offset printing.

**Chapter 5 : QUALITY CONTROL :**

5.1 Registration control through mechanical efficiency of machine.

5.2 Electronic registration control system.

5.3 Alcohollic damping, PH control of fountain solution, water hardness control.

5.4 Anti- static devices.

5.5 Humidifiers.

5.6 Anti-set-off devices.

**Chapter 6 : PRESS ROOM CALCULATIONS :**

6.1 Ink mileage and coverage.

6.2 Wastage calculations for different jobs on different machines.

6.3 Plate and blanket packing and stock thickness calculations.

**Chapter 7 : MODERN DEVELOPMENTS IN OFF-SET PRESSES :**

7.1 Numbering, perforating and oil stamping.

7.2 Computer application in machine functions.

**COURSE TITLE : PRESS WORK - II LAB**

**PRACTICAL CODE : 257522(57)**

**TOTAL HOURS : 64**

**LIST OF PRACTICALS :**

1. Preparatory operation;; Measurement of stock caliper, blanket caliper, blanket hardness, water hardness and PH, ink tact measurement, blanket punching, plate and blanket packing calculations.
2. Make ready operations for combination work for different stocks.
3. Printing on glazed and unglazed surfaces.
4. Multicolour printing using different coloursequence and judgement of best sequence with single colour machine.
5. Trouble finding and shooting.
6. Machine maintenance; setting of inking rollers, dampening rollers, pressure adjustments, sheet straightening on feed board.
7. Use of register punch.
8. Measurement of optical density in prints by reflection densitometers both black & white and colours.
9. Paper conditioning.

**REFERENCE BOOKS :-**

1. Sheetfed offset operating. - GATF 1988 Litho Printing - Ian Faux. Blueprint publishing Ltd.
2. A manual of Lithographic press operations - A. S. Porter, Lithographic Training services. Modern Lithography - Ian Faux, SITA Limited. Manchester.
3. Machine Printing - Durrant
4. Litho offset press operation - Latham (GATF)
5. Printing Inks and Paper - C.S. Mishra.
6. Technology of Offset Printing - C.S. Mishra

# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

(A) SEMESTER : V  
 (B) COURSE TITLE : PROCESS CAMERA WORK - II  
 (C) CODE (Theory) : 257513(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257513 (57)	4	1	-	100	20	20	-	-	140	5
257523 (57)	-	-	3	-	-	-	50	25	75	2

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	ADVANCE HALF TONE PRACTICE	15	15
2	2	COLOUR ORIGINALS DIFFERENT COLOUR ORIGINALS AND THEIR QUALITIES	10	10
3	3	COLOUR THEORY	15	20
4	4	COLOUR SEPARATION	20	20
5	5	COLOUR CORRECTION	15	20
6	6	MISCELLENEOUS PRACTICES	5	15

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1 : ADVANCE HALF TONE PRACTICE :**

- 1.1 High key, low key, flat, old copies, their reproduction and classification.
- 1.2 Half tone reproduction by contact method.
- 1.3 Development control.
- 1.4 Justification of over exposure, under exposure, over and under development.

**Chapter 2 : Colour ORIGINALS : Different Colour Originals and their qualities.**

**Chapter 3 : COLOUR THEORY :**

- 3.1 Additive and substrative colour mixing.
- 3.2 Colour filters and complimentary colours, colour filters and printer relationship.
- 3.3 Filter ratio and filter factors.
- 3.4 Black printer.

**Chapter 4 : COLOUR SEPARATION :**

- 4.1 An out line of direct and Indirect colour separation methods.
- 4.2 Use of gray scale and colour patches in colour reproduction.
- 4.3 Development control in colour photography.
- 4.4 Evaluation of colour separation negatives.

**Chapter 5 : COLOUR CORRECTION :**

- 5.1 Definition of colour correction and estimation of defects in printers.
- 5.2 An out line of different colour correcting methods.
- 5.3 An out line of colour separation by electronic method.

**Chapter 6 : MISCELLENEOUS PRACTICES :**

- 6.1 Tintlying.
- 6.2 Planning and make up of colour reproduction.
- 6.3 Colour blowups.
- 6.4 Combination practice line and half tone.
- 6.5 Automatic processor.
- 6.6 Colour proving by colour prints.

**COURSE TITLE : PROCESS CAMERA WORK - II LAB**

**PRACTICAL CODE : 257523(57)**

**TOTAL HOURS : 48**

**LIST OF PRACTICALS :-**

1. Evaluation of different colour originals.
2. Advance halftone practice. Contact printing, masking and combination halftone practice.
3. Evaluation of negatives and positives for under exposure, over expusure, under and over development.
4. After treatments of positive and negatives.
5. Tint laying and use of contact screens.
6. Introduction to colour filters, filter factor and filter ratio calculations, screen angles setting.
7. Handling of panchromatic films.
8. Colour separation practice;; direct and indirect methods.
9. Colour correction by retouching and photographic method.
10. Miscelleneous camera practices. Duotone; direct positive, etc.

**REFERENCE BOOKS :-**

1. Desk Top Design 2nd Edition - Brian Cookman.
2. Desk Top Pulishing Design Basics Published by Alan Holmes
3. Printing Industry - Victor Strauss
4. Lithographer's Manual - Charles Shapiro
5. Reproduction photography for Lithography - Eric, Champers, GATF
6. Graphic Reproduction photography - J.W. Burden, Focal press. London.
7. The Lithographer's Manual - GATF - 9th Edition
8. Hand book of Modern halftone Photography - Perfect Graphic A Demarset, USA
9. Sensitometry for photographers Focal Press, London.
10. Printing Technology - J.Michael Adams David, D.Faux. Lloyd, J.Rie- Delmar Publisher's
11. J.R. SPSE Handbook of photographic Science and Engineering - Wood Thomas, John Wiley and sons.

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# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

(A) SEMESTER : V  
 (B) COURSE TITLE : COMPUTERIZED COMPOSITION  
 (C) CODE (Theory) : 257514(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257513 (57)	3	1	-	100	20	20	-	-	140	4
257524 (57)	-	-	4	-	-	-	50	25	75	2

(F) DISTRIBUTION OF MARKS AND HOURS :

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	INTRODUCTION	10	20
2	2	TEXT SETTING ROUTINE	20	30
3	3	IMAGE SETTING CONFIGURATION	24	30
4	4	PRODUCTION ROUTINE	10	20

(G) DETAILED COURSE CONTENTS :

**Chapter 1 : INTRODUCTION :**

- 1.1 Input and output devices, basic classification of software viz. application and system software, their types and functions, purpose and function of operating system, Elementary idea of disc operating system (DOS)

**Chapter 2 : TEXT SETTING ROUTINE :**

- 2.1 Hand setting. Mechanical type setting and computerized type setting systems - merits and limitations.
- 2.2 Role and functions of digital computer in type setting.
- 2.3 Desk Top publishing (DTP) system : advantages and limitations.
- 2.4 DTP configuration : hardware, Software and other accessories.
- 2.5 Invoking DTP : Menu, edit screen, text entry, editing document, insertion of words/lines, saving document, printing document, corrections and make-up for book, magazine, newspaper and general Jobs.
- 2.6 Automatic justification, hyphenation and spell check.

**Chapter 3 : IMAGE SETTING CONFIGURATION :**

- 3.1 Input devices - work station, scanners, OCR
- 3.2 Softwares for image setting - Type setting and page making, illustration processing, colour separation and correction.
- 3.3 Output devices - Imagesetters.
- 3.4 Storage systems.

**Chapter 4 : PRODUCTION ROUTINE :**

- 4.1 Steps in text processing.
- 4.2 Front end operation and page make - up techniques.
- 4.3 Editing/corrections, proofing.
- 4.4 Processing of film.
- 4.5 Output, quality control.
- 4.6 Scanning operations for illustration processing.

**COURSE TITLE : COMPUTERIZED COMPOSITION LAB**

**PRACTICAL CODE : 257524(57)**

**TOTAL HOURS : 64**

**LIST OF PRACTICALS :-**

- 1. Study of DTP Configuration
- 2. Practice on DTP Key Board
- 3. Setting Text matter :
  - Measures
  - Margins
  - Interlinear
  - Font Selection on DTP Systems
- 4. Corrections - Corrections on Screen
- 5. Care and handling of Laser Printer, Laser out-put
- 6. Practice on Electronic Typewriter Keyboard.
- 7. Page makeup.

**REFERENCE BOOKS :-**

- 1. MS Office - Y cmou
- 2. Fundamentals of Computers - Rajaraman.
- 3. Rapidex computer course
- 4. Electronic composition - A. holmes
- 5. ABC of windows - Allen and Neibur

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# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

- (A) SEMESTER : V  
 (B) COURSE TITLE : PRINTERS COSTING AND ESTIMATING  
 (C) CODE (Theory) : 257515(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257515 (57)	3	1	-	100	20	20	-	-	140	4

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	COSTING	20	25
2	2	DEPARTMENTALIZATION	10	15
3	3	LABOUR COST	8	15
4	4	ESTIMATING	18	25
5	5	RECORD KEEPING AND OFFICE ROUTINE	4	10
6	6	COSTING OFF	4	10

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1 : COSTING :**

- 1.1 Elements of cost.
- 1.2 Object of costing.
- 1.3 Principles of a scientific costing system.
- 1.4 Preparation of statement of expenses.

**Chapter 2 : DEPARTMENTALIZATION :**

- 2.1 Classification of departments.
- 2.2 Allocation of Expenses to various departments.
- 2.3 Apportionment and re-apportionment to cost centers.

**Chapter 3 : LABOUR COST :**

- 3.1 Hourly rate; Meaning and its calculation.
- 3.2 Overtime ; its calculation.
- 3.3 Preparation of cost sheet (Cost Account)
- 3.4 Salient features of Federation Costing system.

**Chapter 4 : ESTIMATING :**

- 4.1 Estimating Department ; its role and importance.
- 4.2 Estimate form.
- 4.3 Estimator ; role, qualification and work. The tool of an estimator - output table.

**Chapter 5 : Record Keeping and office Routine :**

- 5.1 Order Department ; its function.
- 5.2 Works Instruction Ticket.
- 5.3 Works daily docket.
- 5.4 Daily return of materials issued.
- 5.5 Daily Delivery sheet.
- 5.6 Budgetary Control ; Classification of expenditures, base of allocation, assessment of capital values, forecasting the life of assets.
- 5.7 Depreciation; meaning, methods of depreciation.
- 5.8 Relative Profitability.

**Chapter 6 : COSTING OFF :**

- 6.1 Prepress calculations for costing ; hand composing, lino, mono DTP, Camera Work, Scanning, Mechanical preparation and image carriers.
- 6.2 Press work calculations ; stock to be printed, ink and its mileage, wastage calculation according to job, numbers of colour, type of printing and printing processes adopted.
- 6.3 Post Press Calculation (Finishing) ; Style of Binding or converting, method of binding their calculation.

**REFERENCE BOOKS :-**

- 1. Printer Costing and Estimation - Anupam prakashan Allahabad
- 2. Costing and Estimation - B.D.Mendiratta
- 3. Printer's Costing - Ruggles
- 4. Estimating method and cost analysis for printers - Venktaraman and Balaraman.

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# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

- (A) SEMESTER : VI  
 (B) COURSE TITLE : BUSINESS MANAGEMENT AND ACCOUNTANCY  
 (C) CODE (Theory) : 257611(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257611 (57)	3	1	-	100	20	20	-	-	140	4

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	BUSINESS	8	10
2	2	MANAGEMENT	16	20
3	3	FINANCIAL MANAGEMENT	8	15
4	4	PERSONNEL MANAGEMENT	8	15
5	5	ACCOUNTANCY	20	30
6	6	LABOUR WELFARE	4	10

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1 : BUSINESS :**

- 1.1 Meaning and definition of Business.
- 1.2 Types of Business units; whole-sale, retail, partnership & company.
- 1.3 Office Procedure; Correspondence, Order, Forms, Indexing, Filing.  
etc.
- 1.4 Project Analysis; Field Study, Market Survey, Project report.

**Chapter 2 : MANAGEMENT :**

- 2.1 Meaning and definition of Management.
- 2.2 Elements of management; planning, organization, co-ordination, control, motivation, leadership, direction, etc.
- 2.3 Management structure of a Printing Industry.
- 2.4 Social and welfare responsibilities of Management.
- 2.5 General problems of the Indian Printing Industry and their solutions.
- 2.6 Management & Workers relations.
- 2.7 Trade Unionism.
- 2.8 Scientific Management.

**Chapter 3 : FINANCIAL MANAGEMENT :**

- 3.1 Financial Availability ; banks, LIC, IDBI and other Financial Institutions. Their Role in Promoting Business.
- 3.2 Types of loans ; short, medium and long term and their usage.
- 3.3 Capital structure; Fixed and Floating capital and its role in day to day working of a business.

**Chapter 4 : PERSONNEL MANAGEMENT :**

- 4.1 Job specification, selection (test & interview) induction, training and placement.
- 4.2 handling grievances, ensuring uniformity of decision.
- 4.3 Correcting the workers, employee counseling, absentees, labour turnover.

**Chapter 5 : ACCOUNTANCY :**

- 5.1 Principles of Accountancy.
- 5.2 Book Keeping Terms.
- 5.3 Classification of Accounts ; Journal, Ledger, Trial balance, Trading & Profit and Loss Account, balance Sheet.

**Chapter 6 : LABOUR WELFARE :**

- 6.1 Health Provisions for worker in a factory.
- 6.2 Safety Measures for worker while working in factory.
- 6.3 Welfare Steps of management for a worker.

**REFERENCE BOOKS :-**

- |    |                                      |   |  |
|----|--------------------------------------|---|--|
| 1. | Industrial organization & management | - | Bang & Sharma                            |
| 2. | Entrepreneurship development         | - | Bose                                     |
| 3. | Printer's laws                       | - | Saifuddin                                |
| 4. | Printing Production Management       | - | Gray G. Field.                           |
| 5. | Book keeping & accountancy           | - | Chopde, Chaudhari - Sheth<br>Publication |
| 6. | Advance accountancy & costing        | - | Shukla                                   |

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# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

(A) SEMESTER : VI  
 (B) COURSE TITLE : PRINT MEDIA ADVERTISING  
 (C) CODE (Theory) : 257612(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257612 (57)	3	1	-	100	20	20	-	-	140	4
257621 (57)	-	-	3	-	-	-	50	25	75	2

(F) DISTRIBUTION OF MARKS AND HOURS :

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	INTRODUCTION	8	10
2	2	MODE OF ADVERTISING	16	30
3	3	ADVERTISING AGENCY	8	10
4	4	ADVERTISING PROCEDURE	13	20
5	5	GRAPHIC ART	8	10
6	6	ANALYSIS	5	10
7	7	MARKET SURVEY	6	10

(G) DETAILED COURSE CONTENTS :

**Chapter 1 : INTRODUCTION :**

- 1.1 Definitions and work of advertising.
- 1.2 Role of advertising.
- 1.3 Advertising function ; in commercial, social and economic fields.
- 1.4 Impact of advertising on society.

**Chapter 2 : MODE OF ADVERTISING :**

- 2.1 Kinds of advertising.
- 2.2 Media of advertising.
- 2.3 Local, national and international advertising.

**Chapter 3 : ADVERTISING AGENCY :**

- 3.1 Advertising campaigning.
- 3.2 Structure, function and work of advertising agency.
- 3.3 Categories of ad agencies

**Chapter 4 : ADVERTISING PROCEDURE :**

- 4.1 Planning.
- 4.2 Market research and survey.
- 4.3 Analysis of demand and supply.
- 4.4 Generation of advertisement ; layouting, copy writing and designing.
- 4.5 Copy preparation for different media.

**Chapter 5 : GRAPHIC ART :**

- 5.1 Advertising principles; design visualizing, stages of layout formats.
- 5.2 Production of art by print media.
- 5.3 Selection of media.
- 5.4 Buying and selling of space.
- 5.5 Cost calculation;; media estimates, rate structure, unit of measurement.

**Chapter 6 : ANALYSIS :**

- 6.1 Analysis of advertising and campaign planning
- 6.2 Study and test of advertisement.
- 6.3 Media research.

**Chapter 7 : MARKET SURVEY :**

- 7.1 Area wise market survey for specific products.
- 7.2 Stages in market research process.
- 7.3 Preparation of proposals for method selection.
- 7.4 Readership survey and public opinion.
- 7.5 Data gathering, tabulation of data and data analysis for project report.

**COURSE TITLE : PRINT MEDIA ADVERTISING LAB**

**PRACTICAL CODE : 257621(57)**

**TOTAL HOURS : 48**

**LIST OF PRACTICALS :-**

1. Designing of advertisements for handbills, wall posters, and hoardings.
2. Designing for local newspapers.
3. Designing for national advertisement campaign in newspaper.
4. Ads, designing for magazines.
5. Ads. Designing for packaging and fabrics.
6. Ads. For commercial use;; medicines, machineries, etc.

**REFERENCE BOOKS :-**

1. Fundamentals of layout - F.H Wills
2. Copy Preparation - Cabibi.
3. Advertising Art and Ideas - Dr. G.M. Rege.
4. Advertising Art and Production - J.Nath.
5. Typography of Devanagari - B.S.Naik.

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# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

- (A) SEMESTER : VI  
 (B) COURSE TITLE : PROJECT  
 (C) CODE : 257624(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257624 (57)	-	-	6	-	-	-	60	25	85	3

The students of the sixth semester will be given the assignments called Project. The project will be over in two phases - Written project, Industrial Exposure.

- WRITTEN PROJECT** - The students will be given separate topics related to the production of different print products. The students will estimate and calculate the cost of product. The source of raw material, quantity, mode of printing and time spent in production of product. The above project will be evaluated by the guide. The project will be type written will bound. The project will be evaluated for external and internal marking.
- INDUSTRIAL EXPOSURE** - The student will be placed in industry for two weeks or will go for educational tour within the state or out of state. The tour guide will evaluate the students for their gain of knowledge. A prescribed proforma will be given to each student to fill in their gains and the marks will be allotted accordingly.

## **PROFORMA FOR INTERNAL ASSIGNMENT**

### **1. NAME AND DETAILS OF ASSIGNED JOBS :-**

1. NAME OF JOB AND SIZE :-
2. NO.OF PAGES :-
3. QUANTITY :-
4. MODE OF PRINTIONG (Single colour/Multi Colour/Process of Printing)
5. PAPER OR STOCK USED :-
6. DATE OF RECEIPT :-
7. DATE OF DELIVERY :-

### **2. WORK INVOLVED**

Details of Pre-press Operations

Hand Composition/D.T.P.

1. No. of pages composed and Name and Size of Font.
2. Scanning and Planning
3. Designing.
4. Imposition or mechanical Details (Pasting)
5. No. of Plates and Mode of Platemaking.

Press Room Operations

1. Machine/Machines Used.
2. Total hours of Work.
3. Special task if any
4. Wastage on part of production.

### **3. FINISHING OPERATIONS INVOLVED**

#### **4. COSTING**

##### **A. DIRECT**

1. Cost of Raw materials
2. Labour and other direct heads payable at present market rate.

##### **B INDIRECT**

1. Supervision Charges (20% of total labour charges)
2. Depreciation and other chargables (10% of total costing)

##### **C COST OF PRODUCT**

### **5. JOB EVALUATION**

- A Conclusion of student regarding assigned job.
- B Team Leader's remark

**SIGNATURE OF STUDENT    SIGNATURE OF TEAM LEADER    SIGNATURE OF H.OD.**

**DATE OF SUBMISSION :-**-----

## PRORORMA FOR EXTERNAL ASSIGNMENT

**EDUCATIONAL TOUR/INDUSTRIAL EXPOSURE** PLACE -----

1. Duration of Tour/Work in Press or Allied Agencies.
2. Details of Tour/Industrial Exposure.
  1. No. of Presses Visited during Educational Tour/during your industrial Training.
  2. Nature of Work you have observed/You were involved at.
  3. Classes/Class of industry or industries you have visited/worked with.
  4. Set up/Set ups of industry/agency you have visited/worked with (Departmentalization).
3. IMAPACT OF INDUSTRIAL EXPOSURE.
  1. How do you feel about your career after the exposure? Give your opinion..
  2. Drawbacks you have observed on part of working conditions, quality of product, set ups and others.
  3. Your own stand about the exposure :- (underline)  
A. Good, B. Excellent, C. Outstanding, D. Not Enough.

In case of your stand (C) or (D) give reasons :-

Signature of Press/Agency (Competent Authority Where Industrial Training/Tour Conducted.)

Remarks of Tour Guide/Project Leader

Signature of :-      Student      Project Leader      H.O.D.

DATE OF SUBMISSION :- -----

# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

(A) SEMESTER : VI  
 (B) COURSE TITLE : ADVANCE REPRODUCTION SYSTEM  
 (C) CODE (Theory) : 257613(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257613 (57)	3	1	-	100	20	20	-	-	140	4
257622 (57)	-	-	3	-	-	-	50	25	75	2

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	BASICS OF COLOUR REPRODUCTION	8	15
2	2	INTRODUCTION SCANNERS	8	20
3	3	SCANNER PROGRAMMING OBJECTIVES	8	15
4	4	INPUT AND OUTPUT	8	15
5	5	SCANNER OPERATING	8	8
6	6	IMAGING SYSTEMS-TECHNOLOGY AND OPERATION	8	8
7	7	IMAGE RECORDING AND DATA STORAGE	8	8
8	8	SCANNER AND SYSTEM MANAGEMENT	3	5
9	9	COLOUR MANAGEMENT	5	6

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1: BASICS OF COLOUR REPRODUCTION :**

- 1.1 Colour definition - Hue, Saturation Brightness.
- 1.2 Filter & Filter factor
- 1.3 Colour separation and screen angles
- 1.4 Ink defects (errors trichromatism)
- 1.5 Colour reproduction-objectives
- 1.6 Colour correction - Reasons- Brief overview of optical methods

**Chapter 2 : INTRODUCTION SCANNERS :**

- 2.1 Various generations of scanners
- 2.2 Working of drum type and flat bed scanners
- 2.3 Study of different function provided on scanners-tone and colour correction, Gray balance, colour contrast, dot gain, Generation of black printer-chromatic, achromatic - UCR,GCR,UCA,UCM
- 2.4 Function of Photo Multiplier Tube & Charged Couple Device

**Chapter 3 : SCANNER PROGRAMMING OBJECTIVES :**

- 3.1 Restrictions of photomechanical reproduction Substrate characteristics, ink characteristics, printing process, screen patterns, proportionality, and Additivity failure, image carrier induced distortion.
- 3.2 Restrictions of the original-colour and tonal factors, image structure factors.
- 3.3 Other problems in color reproduction - response of scanner to the color, viewing conditions.
- 3.4 Colour Charts.
- 3.5 Duotone, hexachrome.

**Chapter 4 : INPUT AND OUTPUT:**

- 4.1 Mechanical principles
- 4.2 Rotary drums Vs flat bed scanners
- 4.3 Out put methods
- 4.4 Digital recording on film - laser, LED.
- 4.5 Type of Image setters - Internal, external, capstan
- 4.6 Post Script - P.D.L., RIP -Levels
- 4.7 PDF

**Chapter 5 : SCANNER OPERATING:**

- 5.1 Evaluating originals-picture information, physical information.
- 5.2 Selection of dpi with respect to enlargement, resolution, dpi, lpi.- Grey levels, Halftone dot formation by Dithering.
- 5.3 Copy preparation of scanning, cleaning the original, setting and registering the aids, mounting originals, oil mounting.

**Chapter 6 : IMAGING SYSTEMS-TECHNOLOGY AND OPERATION:**

- 6.1 Application packages for Prepress Assembly
- 6.2 System capabilities, image assembly and retouching, tone and colour adjustment.
- 6.3 Technology
  - a. Software- Application for page make up and image manipulation, specialized software-Imposition, trapping, work flow.
- 6.4 Imaging system operation-job description, classifying work, pre-planning and work procedures.

**Chapter 7 : IMAGE RECORDING AND DATA STORAGE:**

- 7.1 Files, Determining file size, File format
- 7.2 Data compression, transmission and film recording
- 7.3 Recording and storage-equipment and media used for data storage.

**Chapter 8 : SCANNER AND SYSTEM MANAGEMENT:**

- 8.1 Plant layout
- 8.2 Reliability and maintenance-environmental conditions, maintenance, production planning and control

**Chapter 9 : COLOUR MANAGEMENT:**

- 9.1 a. Introduction to colour management
- b. Spectrophotometer
- 9.2 Digital proofing

**COURSE TITLE : Advance Reproduction System Lab**

**PRACTICAL CODE : 257622(57)**

**TOTAL HOURS : 48**

**LIST OF PRACTICALS :-**

1. Introduction of Graphic art quality control equipments
2. Knowledge of keyboard on DTP
3. Introduction of software available
4. Image generation on monitor ; identification of different function,
5. Scaling
6. Combination of different images, recall of pre scanned images.
7. Editing and correction of images.
8. Knowledge of scanner and acquaintance to its function
9. Scanner operations
10. Introduction to automatic film processor
11. Operational practice on automatic film processor
12. Evaluation of printouts; tracing sheets, bromides and polyester film

**REFERENCE BOOKS :-**

1. Colour scanning & imaging systems - field - GATF
2. Graphic reproduction photography - J.W.Burden
3. Photomechanics & Printing - Gorden & Monsen
4. Colour & its reproduction - Field - GATF
5. Manual for photographic reproduction - R.E.Jacobson
6. Print communications and Electronic media challenge - Alan kotok

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# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

- (A) SEMESTER : VI  
 (B) COURSE TITLE : PACKAGING AND CONVERTING  
 (C) CODE (Theory) : 257614(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257614 (57)	3	1	-	100	20	20	-	-	140	4
257623 (57)	-	-	3	-	-	-	50	25	75	2

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	INTRODUCTION	6	10
2	2	RIGID PACKAGING	16	30
3	3	PLASTIC	8	10
4	4	METHODS	12	20
5	5	SPECIALIZED PACKAGING FOR FOOD PRODUCTS.	8	15
6	6	METAL CONTAINER	4	5
7	7	Recycling of Packaging & Waste Management	10	10

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1 : INTRODUCTION:**

- 1.1 About packaging
- 1.2 Various printing processes used for packaging - Pad, Screen, Flexography, Gravure, offset, Hot stamping.
- 1.3 Requirement of good package
- 1.4 Selection criteria for packaging material.

**Chapter 2 : RIGID PACKAGING:**

- 2.1 Paper and paper based packaging materials
- 2.2 Paper board, kinds of boards, solid board, food approved board, corrugated board, multiply, types of flute, pitch, thickness.
- 2.3 Layout of various carton styles - Universal, Reverse tuck end.
- 2.4 Make ready for carton punching, layout designing.
- 2.5 Die making - Unit die, jigged die.
- 2.6 Punching scoring, box bulking, flat stitching machine

**Chapter 3 : PLASTIC:**

- 3.1 Advantages and limitations of plastic packaging.
- 3.2 Various applications of plastic packaging.
- 3.3 Plastic materials with their properties and applications Cellophane, Polyethylene, Polystyrene, Polypropylene, Polyvinyl chloride, Nylon, Polyester.

**Chapter 4 : METHODS:**

- 4.1 Blown film extrusion with diagram
- 4.2 Co-extrusion
- 4.3 Stretch blow moulded bottles Properties and limitations of PET bottle.
- 4.4 Closures and closure liner - Thermoplastic - Polyethylene, Polypropylene, Thermoset - Phenolic and Urea
- 4.5 Blister packing with die.
- 4.6 Concept of shrink and stretch wrapping
- 4.7 Dry bond and wet bond adhesive lamination

**Chapter 5 : SPECIALIZED PACKAGING FOR FOOD PRODUCTS :**

- 5.1 Aseptic processing and requirement of films for aseptic packaging
- 5.2 Bag in box
- 5.3 Tetra pak
- 5.4 Sterilization system - Dry heat

**Chapter 6 : METAL CONTAINER:**

- 6.1 Tin plate cans, lacquer for metal plates, drums
- 6.2 Aluminum foil, tubes

**Chapter 7 : RE-CYCLING OF PACKAGING & WASTE MANAGEMENT :**

- 7.1 Packaging and life cycle
- 7.2 Environmental aspects (pollution, aroma)
- 7.3 Recovery/recycling, waste disposal
- 7.4 Bans and restriction

**COURSE TITLE : Packaging and Converting Lab**

**PRACTICAL CODE : 257623(57)**

**TOTAL HOURS : 48**

**LIST OF PRACTICALS :-**

- 1. Carton designing.
- 2. Collection of different packages & their study
- 3. Make ready for half punching and through cutting
- 4. Foil stamping, lamination
- 5. Quality control
  - Optical - Gloss, haze, see through
  - Machinability - Dimensional stability, slip, curl, running quality
  - Mechanical - Burst, impact, tensile, elongation, tear
  - Package test - compatibility, product loss, taste and odor, leakage
  - Stress crack resistance, drop test, vibration test, stack load test, storage test

**Visits :**

For corrugation machine, carton manufacturing, Q.C. labs, film manufacturing. Cutting and sealing machine, form fill seal machine, lamination, varnishing unit, embossing, gold blocking, foil stamping.

**REFERENCE BOOKS :-**

1. Plastics in Packaging - A.S.Athalye
2. Guarding of folding box gluers - Brintish Printing Industries Federation.
3. Guarding of cardboard box making machine - British Printing Industries Federation.
4. Guarding of sheet fed cutting and creasing machine - British Printing Industries Federation.
5. Handbook of package Engineering - Joseph E.Hanlon.
6. A Handbook of food packaging - Frank A.Paine and Heather Y. paine, LeonardHill Publishers, Glasgow G 642 NZ.
7. Packaging Encyclopedia - Cahners Publishing Company.
8. Package Printing - Nelson R, Eldred.
9. Producing Corrugated Packaging - Profitability - Elliot S. Rohde

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# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

(A) SEMESTER : II  
 (B) COURSE TITLE : BASIC ENGINEERING  
 (C) CODE (Theory) : 257211 (24/37)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257211 (24/37)	3	1	-	100	20	20	-	-	140	4
257221 (24/37)	-	-	2	-	-	-	50	20	70	1

(F) DISTRIBUTION OF MARKS AND HOURS :

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	ELECTRICAL PRINCIPLES	4	6
2	2	SIMPLE D.C. CIRCUIT ANALYSIS	8	10
3	3	SINGE PHASE A.C. CIRCUITS	6	10
4	4	ELECTROMAGNETISM	4	8
5	5	SINGLE PHASE TRANSFORMER	6	10
6	6	THREE PHASE A.C. CIRCUITS	5	6

**MECHANICAL SECTION :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	PRIME MOVERS	4	6
2	2	MECHANICAL DRIVES	6	12
3	3	FRICTION	5	7
4	4	LUBRICATION	5	8
5	5	HYDRAULICS	5	8
6	6	PNEUMATICS	6	9

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1 : ELECTRICAL PRINCIPLES :**

- 1.1 Understanding the basic terms used in electrical engineering such as voltage, current, resistance, resistivity, conductance, conductivity, work, power and energy etc.
- 1.2 Relation between voltage, current and resistance; Ohm's law.
- 1.3 Study of good conductors, bad conductors, ;insulators, leakage current and insulation resistance.
- 1.4 Study of effect of temperature and moisture on resistance of conductor ;and insulator.

**Chapter 2 : SIMPLE D.C. CIRCUIT ANALYSIS :**

- 2.1 Meaning of the analysis of electrical circuit.
- 2.2 Nature of voltage and current in circuit (graphical representation)
- 2.3 Study of Kirchoff's current and voltage law, D.C. series and parallel circuits and their simplifications.
- 2.4 Study of star-delta and delta-star transformations and their application in the simplification of D.C. circuits.

**Chapter 3 : SINGE PHASE A.C. CIRCUITS :**

- 3.1 Understanding the generation of alternating voltage, Study of the representation of A.C. voltage and current as a sine wave.
- 3.2 Meaning of average value, effective value of an A.C. current, form factor and peak factor of an A.C. quantity.
- 3.3 Rules for addition and subtraction of A.C. quantities. Introduction to the concept of phasor diagram.
- 3.4 Analysis of an A. C. circuit-A.C. current flowing through pure resistance, Inductance and capacitance, Concept of power factor and true power in an A.C. circuit.
- 3.5 Calculation of power factor and true power in simple A.C. circuits involving series R-C and R-L circuits. Concept of capacitive and inductive reactance.

**Chapter 4 : ELECTROMAGNETISM :**

- 4.1 Introduction to the magnet, its types, methods of preparation. Classification magnetic materials.
- 4.2 Understanding the basic terms used in magnetism like m.m.f., magnetic flux, flux density, reluctance, etc.
- 4.3 Study of right hand rule, cork screw rule, Fleming's right hand rule, Lenz's law.
- 4.4 Faraday's laws of electromagnetic induction. Self-inductance and mutual inductance. B-H curve, magnetic hysteresis and hysteresis loop.

**Chapter 5 : SINGLE PHASE TRANSFORMER :**

- 5.1 Working, principle of single-phase transformer, Construction details viz. shell type and core type.
- 5.2 Formulae of e.m.f., voltage and current ration, Construction and working of step up and step down transformer.
- 5.3 Effect of load on transformer and transformer regulation, various losses in transformer, efficiency of transformer, rating of transformer.
- 5.4 Autotransformer and its applications.

**Chapter 6 : THREE PHASE A.C. CIRCUITS :**

- 6.1 Understanding of generation of thee-phase A.C. voltage and current. Sinusoidal representation of three-phase A.C. quantities and their phase sequence.
- 6.2 Load connection methods in three-phase A.C. circuits- star and delta and their applications. Concept of line, phase voltage and current.
- 6.3 True power measurement in three-phase star and delta circuits.

**MECHANICAL SECTION :**

**Chapter 1 : PRIME MOVERS:**

- 1.1 Definition of prime mover, Different sources of power-Fuel, water, nuclear energy, wind solar energy, geothermal energy and tidal energy.
- 1.2 Introduction to different types of prime movers-thermal, hydraulic, electric and pneumatic.
- 1.3 Working of I.C. engines advantages and disadvantages.

**Chapter 2 : MECHANICAL DRIVES :**

- 2.1 Power transmission and need of mechanical drives.
- 2.2 Methods of drives-group drive or common drive and individual drive their advantages and disadvantages.
- 2.3 Different types of mechanical drives used for power transmission like couplings, belts, ropes, chains, clutches and gears.
- 2.4 Study of the different characteristics of gear drives- circular pitch, addendum, dedendum, pith circle, velocity ratio.

**Chapter 3 : FRICTION :**

- 3.1 Definition of friction. Types of friction-static, kinetic, rolling.
- 3.2 Coefficient of friction, angle of repose. Laws of static & kinetic friction.

**Chapter 4 : LUBRICATION :**

- 4.1 Definition and function of lubricant. Different types of lubrication-fluid film, boundary, extreme-pressure.
- 4.2 Classification of lubricants - liquid, semi-solid, solid.
- 4.3 Lubricating systems- gravity-feed, force feed.  
Semiautomatic lubricating devices-bottle, or needle oiler, capped grease cup for gravity feed, bottom-feed wick oiler, slight gravity-feed oiler, siphon-type oiler, pad oiler.

**Chapter 5 : HYDRAULICS :**

- 5.1 Definition of hydraulics, underlying principle-Pascal's law.
- 5.2 Understanding the basic terms used in hydraulics such as work, horse power, mechanical advantage.
- 5.3 General hydraulic system and its components- fluid, reservoir, filters, strainer, pippin's, valves, cylinder, piston and motor.
- 5.4 Hydraulics in printing, advantages and disadvantages of hydraulic system.

**Chapter 6 : PNEUMATICS :**

- 6.1 Definition of pneumatics, underlying principles- Boyle's law, Charles's law, combined gas law, absolute pressure, gauge pressure.
- 6.2 Definition of compressor, types of compressor-single acting, double acting, rotary.
- 6.3 Compressed air system- centralized and decentralized.
- 6.4 General compressor system and its components- filters, relief and safety valves, regulators, direction, flow and pressure control valves.

**COURSE TITLE : BASIC ENGINEERING Lab**

**PRACTICAL CODE : 257221(24/37)**

**TOTAL HOURS : 32**

**LIST OF PRACTICALS :-**

1. To Study Ohm's law.
2. To study the characteristics of voltage and current in series and parallel circuits.
3. To determine the coefficient of static friction.
4. To determine the angle of repose.
5. Demonstration of different lubricating systems used on various printing machines.
6. Study of single acting compressor and demonstration of different pneumatic systems used on various printing machines.
7. Study of energy meter - single phase.
8. Study of different types of gears.
9. Calculation of velocity ratio in worm and worm wheel.
10. Study of different types of shaft & coupling.
11. Study of Vernier Calliper and Micrometer Screw Guage.
12. Study of different types of accessories used for domestic wiring.
13. Study of one lamp from one point and two point (staircase wiring).
14. Study of the construction and working of fluorescent tube, neon lamp, sodium vapor lamp and mercury vapor lamp.
15. Study of single Phase A.C. & D.C. motor.
16. Measurements using Multimeter.

**REFERENCE BOOKS :-**

<b>No.</b>	<b>Title of Book</b>	<b>Author</b>	<b>Publisher's Name</b>
1	Elements of Mechanical and Electrical Technology	M.N. Kondhawekar and C.H.Karmarkar	Pune Vidyarthi Griha Publication, Pune -30
2	Elements of Mechanical and Electrical Technology	Mali, Ghan, Kale and Thatte	
3	Mechanical and Electrical Technology	Mandke and Deshmukh	
4	Elements of Electrical Technology	B.H. Deshmukh	
5	Electrical Machines (for Diploma)	G.C. Garg	
6	Elements of Elecrtical Engineering	Moris Louis Khanna Publication	

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# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

- (A) SEMESTER : III  
 (B) COURSE TITLE : BASIC ELECTRONICS  
 (C) CODE (Theory) : 257315 (28)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257315 (28)	3	1	-	100	20	20	-	-	140	4
257324 (28)	-	-	3	-	-	-	50	25	75	2

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY	MARKS
1	1	ELECTRON EMISSION	4	5
2	2	SEMICONDUCTOR DEVICES	8	20
3	3	POWER SUPPLY	8	10
4	4	RESONATING & FILTER CIRCUITS	6	5
5	5	AMPLIFIERS	8	15
6	6	OSCILLATORS	8	10
7	7	NON SINUSOIDAL GENERATORS	6	10
8	8	MODULATION AND DEMODULATION	5	10
9	9	INTEGRATED CIRCUITS	6	5
10	10	DIGITAL TECHNIQUES	5	10

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1 : ELECTRON EMISSION :**

Motion of charge in Electric field Electron volt. Work function, expression for thermionic emission, Methods of electron emission applications of emission.

**Chapter 2 : SEMICONDUCTOR DEVICES :**

**DIODES :-**

Formation of PN junction, growth junction, conduction in PN Junction. effect of temperature, Construction Characteristics and application of different types of diodes i.e. Junction diode zenor diode, Tunnel diode, photo diode and Varactor.

**TRANSISTOR :-**

Bipolar junction transistors : PNP and NPN currents in transistor, Transistor characteristics in different configurations : CB, CET CC Load line and dynamic transfer curves  $\alpha$  &  $h$  parameters and applications.

**SPECIAL SEMICONDUCTOR DEVICES :**

Construction, characteristics and applications of FET, & MOSFET, UJT, SCR, Diac & Triac.

**Chapter 3 : POWER SUPPLY :**

Single phase H.W.,F.W. and bridge type Rectifiers Filter, Calculation of output voltage average & RMS value ripple Factor and rectification efficiency. Diode P.IV. voltage doubler rectifier.

**Chapter 4 : RESONATING & FILTER CIRCUITS :**

Review of resonance Filters in communication and measuring circuits, Low pass, High pass, Band pass and Band elimination filters.

**Chapter 5 : AMPLIFIERS :**

Transistors as Amplifier, CB, CE, CC configurations. Methods of biasing Voltage gain current gain, Power gain, Input and Output impedances, Classification of Amplifier on the basis of applications, Frequency, coupling and conduction. Circuit diagram frequency response band width and applications of R.C. coupled, Transformer coupled and Tuned amplifiers. D.C. differential amplifier, characteristics, advantages and applications. FET amplifier biasing and advantages, peculiar connections : Darlington, cascade, and push pull. Block diagram of feed back amplifier, effect of feed back amplifier on gain, derivation of gain, Types of feed back, on the basis of positive or negative current or voltage and shunt or series.

Operation Amplifier : Types : Inverting, non-inverting Voltage gain, input output impedances. Use of OP- amps as comparator, Scaler, multipliere summer, integrator, differentiator.

**Chapter 6 : OSCILLATORS :**

Types : Feed back oscillator, Barkhau sen criterion oscillators such as Hartley, Colpitts Tuned collector, Factors affecting stability and generated frequency with expression. Crystal oscillator advantages and applications.

R.C.OSCILLATORS : phase shift and wein bridge. Working principle, and expression of generated frequency. Beat frequency Oscillators : block diagram.

**Chapter 7 : NON SINUSOIDAL GENERATORS :**

A stable, Mono stable and Bistable Multivibrator circuits, principle of working and output wave forms. Schmitt trigger & UJT. Oscillators, circuits, output wave forms and applications.

**Chapter 8 : MODULATION AND DEMODULATION :**

Types : A.M./F.M. Amplitude modulation : Expression wave form, degree of modulation, Frequency components, their power, band width SSB and suppressed carrier. Frequency modulation :Expression, wave form, modulation index and band width. Methods of A.M. and F.M. detection : Linear Diode detector for A.M. and Quadrature detection for F.M.

**Chapter 9 : INTEGRATED CIRCUITS :**

Concept of ICS classification, types and their advantages. Application of common ICS such as 741, 555,723, 810 and digital ICS.

**Chapter 10. DIGITAL TECHNIQUES :**

Binary numbers, addition, subtraction, multiplication and division. Logic gates and their symbols, Truth table and application.

**COURSE TITLE : BASIC ELECTRONICS Lab**

**PRACTICAL CODE : 257324(28)**

**TOTAL HOURS : 48**

**LIST OF PRACTICALS :-**

1. Study of electronic circuit components/parameters i.e. Types, rating colour codes of Resistors, Capacitors and chokes and coils.
2. Identification of terminals, knowing the specification rating and application of B.J.T.,UJT.,FET., diodes. SCR, Triac etc. referring the semiconductor data manual.
3. Study of common measuring and testing equipments i.e. Multimeters T.V.M. CRO, Function generator etc.
4. Characteristics of diodes transistors, SCRS.
5. To assemble H.W. and F.W. rectifiers, study of wave forms with and without filter circuits. To measure the values of output with C.R.O. and comparison with calculated values.
6. Study of resonant circuits and plotting of related curves. Calculation of half power frequencies, BW and gain..
7. To assemble an amplifier & to plot frequency response Characteristics with (1) R.C. coupling and (2) transformer coupling.
8. To assemble an oscillator circuit and to trace and to measure frequency generated.
9. Study of A.M. modulation. To observe wave form of -  
1. Carrier Signal, 2. Modulating signal and 3. Modulated signal and to measure modulation index with the help of CRO.

**REFERENCE BOOKS :-**

<b>S.No.</b>	<b>Title</b>	<b>Ed./Year</b>	<b>Author/Publisher</b>
1	Electronic Circuits & Systems.	1st, 1998	Bapat, Tata McGraw Hill; New Delhi
2	Basic Electronics & Linear circuits	2nd,1988	Bhargava & Gupta, Tata McGraw Hill; New Delhi
3	Electronic Circuits & Application	8th,1994	Grob, McGraw Hill International Ltd
4	Principles of Electronics	4th,2000	Mehta, V.K.,S.Chand & Co.Ltd
5	Electronic Devices and Circuits - An Introduction	22nd,2000	Mottershead, Allen, Prentice Hall India, New Delhi
6	Laboratory Manual and Teacher Guide in Basic Electronics	1st, 2001	TTTI, Bhopal and DTE, Goa

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# CHHATTISHGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

(A) SEMESTER : IV  
 (B) COURSE TITLE : MARKETING MANAGEMENT  
 (C) CODE (Theory) : 257411(57)  
 (D) BRANCH/DISCIPLINE : PRINTING TECHNOLOGY  
 (E) TEACHING AND EXAMINATION SCHEME :

Course code	Periods/Week (In Hours)			Scheme of Examination						Credit L+ (T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
257411 (28)	3	-	-	100	20	20	-	-	140	3

**(F) DISTRIBUTION OF MARKS AND HOURS :**

S. No.	CHAPTER No.	CHAPTER NAME	HOURS/PERIODS THEORY
1	1	MARKETING AND ITS APPLICATION	3
2	2	MARKETING SYSTEM AND ENVIRONMENT	5
3	3	MARKETING PLANNING AND ORGANISATION	10
4	4	UNDERSTANDING CONSUMER	4
5	5	PRODUCT MANAGEMENT	5
6	6	MARKETING STRATEGIES	5
7	7	MARKETING FUNCTIONS	12
8	8	MARKET MEASUREMENT DISTRIBUTION & CONTROL STRATEGY	4

**(G) DETAILED COURSE CONTENTS :**

**Chapter 1 : MARKETING AND ITS APPLICATION :**

- Introduction to Marketing.
- Role of marketing in today's organization.
- Concept of marketing : Needs, wants and demands, components and Basic characteristics of objectives of marketing, significance and Benefits of marketing, Essentials of modern Marketing.

**Chapter 2 : MARKETING SYSTEM AND ENVIRONMENT :**

- Marketing system : Business marketing Institutions, producers and manufacturers, Intermediaries, competitors, Facilitating Institutions and Public.
- Marketing Environment : Demographic Environment, Economic Environment political environment Physical environment, Technological environment and socio and Cultural environment, competitive Environment.

**Chapter 3 : MARKETING PLANNING AND ORGANISATION :**

- Nature and content of a Marketing plan : Executive summary, current marketing situation, opportunity and Issue analysis objectives, Marketing strategy, Action programs projected profit and loss statement, control, planning a marketing Mix. Elements of a marketing Mix.
- Market Segmentation : General approach, pattern, procedure Bases for segmenting consumer and industrial markets, requirements for effective segmentation.
- Marketing Organisation : Structure, types, Relations with other departments, Departments of marketing unit, Function of the marketing.
- Marketing Research and its applications : Scope, process, significance and objectives of marketing research ,characteristics of a good marketing research, procedures in marketing.

**Chapter 4 : UNDERSTANDING CONSUMERS :**

- Major factors influencing consumer behaviors :- Cultural, Social, personal and Psychological Factors, Buying Decision process Types of Buying behavior, India consumer markets.

**Chapter 5 : PRODUCT MANAGEMENT :**

- What is a product, product classification schemes, Product mix and product line decisions, service product decisions nature characteristics and classification of services, Extent and importance of marketing in the service sector product life cycle.
- Development of new products : Planning, product life cycles, idea generation and screening, concept development and testing, business analysis, product development and market testing, Branding and packaging.

**Chapter 6 : MARKETING STRATEGIES :**

- Marketing strategies in different stages of product life cycle : Introduction stage, growth stage, Maturity stage, Decline stage Market-leader, Market- Challenger and Market follower strategies.
- Pri-cing policies and practices : Setting the price, Modifying the price, initiating and responding to price changes.

## Chapter 7 : MARKETING FUNCTIONS :

Introduction, classification, Marketing.

- Marketing communication : Process, objectives.
- Advertising : Definition and objectives, Types of advertising, pre-requisites of advertising Deciding on the advertising budget : Soles response and Decay model, Adaptive control model and competitive share model deciding on the message : Message generation, message evaluation and selection message execution.  
Deciding on the media : Deciding on the reach, frequency and impact.

Selection of major media types, selecting specific media vehicles, Deciding an media timing, Evaluation of effectiveness of advertising communication effect research. Sales effect research.

- Sales Promotion : objectives, Tools of sales promotion, Development, presentation, Implementation and control of sales promotion programme, Evaluation of sales promotion programme.  
Publicity : Objectives, Selection of publicity message and vehicle, Implementation and evaluation of publicity programmes.

## Chapter 8 : MARKET MEASUREMENT, DISTRIBUTION & CONTROL STRATEGY :

- Demand Forecasting :- objectives, Estimate of current and Future demand, Distribution strategies, objectives, significance, types. Marketing channels : Definition and types of channels, Factors affecting the choice of channels.

## REFERENCE BOOKS :-

S.No.	Title	Author/Publisher
1	Principle & Practice of Marketing Management	B.M.Badada & Porwal Ramesh Book Depot, Jaipur
2	Marketing Management	S.C.Jain, Sahitya Bhawan Agra
3	Marketing Management	P.C.Jaij & Dr. Renuka Jain
4	Marketing Management	Dr. Verma & Agrawal
5	Principle & Practice of Marketing Management	Prof. B.M. Bhadada & Prof. B.L. Porwal Ramesh Book Depot, Jaipur
6	Marketing Management	Dr. S.C. Jain Sahitya Bhawan Agra

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