

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT

**Course Curriculum
BINDING AND FINISHING PROCESS
(Course Code: 3335805)**

Diploma Programs in which this course is offered	Semester in which offered
Diploma in Printing Technology	3 rd Semester

1. RATIONALE

Binding and finishing processes are required in order to transform printed sheets into a usable product such as books, brochures, note books etc. Printing engineers are required to supervise the binding and finishing process and hence they should also develop skills in this area. Skill development in binding and finishing will also enable them in starting a small scale industry of bindery operation.

2. LIST OF COMPETENCIES (Programme Outcome according to NBA Terminology):

The course content should be taught and implemented with the aim to develop different types of skills in the students so that they are able to acquire following competency:

- **Plan and supervise the binding and finishing process for different types of print jobs.**

3. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks
L	T	P		Theory Marks		Practical Marks		
L	T	P	C	ESE	PA	ESE	PA	
3	0	4	7	70	30	40	60	200

Legends: L-Lecture; T – Tutorial/Teacher Guided Student Activity; P -Practical; C – Credit; ESE -End Semester Examination; PA - Progressive Assessment.

4. DETAILED COURSE CONTENTS

Unit	Major Learning Outcomes (Course Outcomes in Cognitive Domain according to NBA terminology)	Topics and Sub-topics
Unit – 1 Introduction to Binding & Finishing	1a. Describe Binding & Finishing operations.	1.1 Orientation to Binding and Finishing 1.2 List of operations : Pre-forwarding, Forwarding, Finishing 1.3 Tools and equipments used for binding & finishing process.
Unit-II Materials	2a. Identification and selection of raw materials for binding and finishing.	2.1 Paper – Different types and sizes, British standard and ISO paper sizes, Multiples and sub divisions 2.2 Advantages and limitations, measuring units – Ream, Quire, Gross, Packet 2.3 Boards – Different types, use, storage effect of humidity 2.4 Securing materials – Thread, Wire, tape, cord etc. 2.5 Covering materials – Binding cloth, Mull cloth, Rexin, Leather etc. 2.6 Adhesives – Glue, Paste, PVA, Hot melt and their properties
Unit– 3 Pre – forwarding and Forwarding Operations	3a. Describe different stages of bindery operations	3.1 Pre – forwarding operations – jogging, knocking, counting, folding, bundling, gathering, collating, sewing etc. 3.2 Forwarding operations – Removing sweels, fixing end papers, gluing, trimming, rounding, backing, edge decorating, cutting squaring of boards, setting joints, pasting down, pressing and jacketing etc.
Unit– 4 Cutting and Folding	4a. Describe various functions and operations of paper cutting machines.	4.1 Cutting machine and its types 4.2 Parts of cutting machine and their functions 4.3 Cutting knife and its maintenance 4.4 Safety devices, Trim disposal system 4.5 Straw board cutter
	4b. Compare functions and operations of various types of folding machines.	4.2.1 Various types of folding machines 4.2.2 Knife Folding, Buckle folding, Combination folding, Principles and working 4.2.3 Hand folding – methods, merits and demerits
Unit– 5 Adhesive for perfect binding, Stationary binding and loose leaf binding, Rebinding of Old Books	5a. Compare and select various types of gluing techniques.	5.1.1 Equipment – gatherer, Feeder, Spine cutter, Gluer, Cover feeder, Trimmer, safety 5.1.2 Burst binding, Notch binding, Two shot wet on wet binding
	5b. Compare different styles of bindings.	5.2.1 Stationary binding 5.2.2 Loose leaf binding - Spiral binding, Wire O binding, Inter screw binding, Metal ring binding, Thong binder, Metal back binder, Universal style
	5c. Execute book repair.	5.3.1 Rebinding of Old books

Unit	Major Learning Outcomes (Course Outcomes in Cognitive Domain according to NBA terminology)	Topics and Sub-topics
Unit- 6 Securing Methods and Covering Style	6a. Describe preparation of book block for different styles of book binding.	6.1.1 Wire stitching machine – parts, function 6.1.2 Thread securing methods 6.1.3 Book sewing machine – parts, function 6.1.4 Case binding, Case making – Manual and Machine 6.1.5 Covering – Quarter, Half, Full, Limp and Library binding 6.1.6 Boarding methods – pasting down, split drawn in work, cut flush, extra square, ASTI (All side turned in)
	6b. Explain applications of miscellaneous finishing operations.	Lamination, Blocking, Numbering, Perforation, Creasing, Die cutting, Edge decoration, Index cutting, Foil stamping, varnishing, drilling

5. SUGGESTED SPECIFICATION TABLE WITH HOURS & MARKS (Theory)

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total
1.	Introduction to Binding & Finishing	08	03	04	03	10
2.	Materials	08	04	02	06	12
3.	Pre – forwarding and Forwarding Operations	10	02	06	04	12
4.	Cutting and Folding	10	06	04	04	14
5.	Adhesive for perfect binding, Stationary binding and loose leaf binding, Rebinding of Old Books	10	04	04	04	12
6.	Securing Methods and Covering Style	10	02	04	04	10
Total		56	21	24	25	70

Legends: R = Remember; U = Understand; A = Apply and above levels (Bloom's revised taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

6. SUGGESTED LIST OF PRACTICAL/EXERCISES:

The practical/exercises should be properly designed and implemented with an attempt to develop different types of practical skills (**Course Outcomes in psychomotor and affective domain**) so that students are able to acquire the competencies (Programme Outcomes). Following is the list of practical exercises for guidance.

Note: Here only Course Outcomes in psychomotor domain are listed as practical/exercises. However, if these practical/exercises are completed appropriately, they would also lead to

development of **Programme Outcomes/Course Outcomes in affective domain** as given in a common list at the beginning of curriculum document for this programme. Faculty should refer to that common list and should ensure that students also acquire those Programme Outcomes/Course Outcomes related to affective domain.

Sr. No.	Unit No.	Practical/Exercises (Course Outcomes in Psychomotor Domain according to NBA Terminology)	Approx. Hrs. Required
1	I.	Demonstrate use of Binder's tools, machines.	08
2	II.	Identify different materials used in binding process.	08
3	III.	Demonstrate use of cutting machine and cutting of board.	08
4	IV.	Do following operations: (a) Knocking, jogging, counting and folding of paper. (b) Thread sewing of book in various. styles. (c) Loose leaf binding having perforation and numbering. (d) Working of various types of Wire stitching machines. (e) Preparation of various styles of End paper.	16
5	V.	Do adhesive binding and ruling of exercise notebook.	08
6	VI.	Do following Operations: Varnishing, Laminating, Hot foil stamping, numbering, perforating, Die cutting.	08
Total Hours (Approx)			56

7. SUGGESTED LIST OF PROPOSED STUDENT ACTIVITIES

1. Students will be required to participate in industry visits.
2. Engage students in market survey and collect specifications, brands, prices of different binding/fixing machines and materials
3. Download different types of creasing, folding and binding machines from internet.

8. SPECIAL INSTRUCTIONAL STRATEGIES (If Any)

- i. Appropriate printing and binding industries should be identified and visits should be planned.
- ii. Industry visit report formats and market survey formats should be developed for distributing to students.
- iii. Local suppliers of finishing and binding machinery and materials may be contacted for product display and exhibition in the institute
- iv. Business plan could be made for starting a small scale bindery business.

9. SUGGESTED LEARNING RESOURCES

A. List of Books:

Sr. No.	Author	Title of Books	Publication
1	Handbook of Print Media	Kipphan, Helmut	Springer
2	Odhams Books London	Practical Printing and Binding	ABC Publication, London
3	Book Binding by hand	Lawrance Tom	Fabre & Fabre Co.,
4	Basic Book Binding	A. W. Lodis	Dover Publication, New york
5	Materials in Printing Processes	L. C. Young	Focal Press, London
6	Book Binding for students	M. P. Kini	Regional Institute of Printing, Chennai
7	Finishing Processes in Printing	A. G. Matin	Focal Press, London
8	Binding and Finishing	A. D.Mendiratta	Printek Publications, New Delhi
9	Book Binding	Arther V. Johnson	Cox & Wyma, USA
10	A Hand book of Printing and Packaging Technology	Bishwanath Chakravarty	Galgotia Publication, Pvt. Ltd.

B. List of Major Equipment/ Instrument

Tabletop folder, Paper cutting machine, Two head saddle sticher, Table top perfect binder, Laminating machine, Mechanical binding: Spiral, Comb, Twin loop binding machines.

C. List of Software/Learning Websites

10. COURSE CURRICULUM DEVELOPMENT COMMITTEE

- **Faculty Members from Polytechnics**
- **Prof. B. A. Patel**, HOD Printing Technology, R C technical Institute Ahmedabad
- **Prof. B L Patel** Lecturer in Printing Technology, R C technical Institute Ahmedabad
- **Co-ordinator and Faculty Members from NITTTR Bhopal**
- **Dr. Nishith Dubey**, Professor, Department of Vocational and Entrepreneurship Education
- **Dr. Haji Naik Dharavath**, Associate Professor, Department of Vocational and Entrepreneurship Education