

GUJARAT TECHNOLOGICAL UNIVERSITY (GTU)

Competency-focused Outcome-based Green Curriculum-2021 (COGC-2021)

Semester -IV

CourseTitle: Printer's Management

(Course Code: 4345804)

Diploma programmes in which this course is offered	Semester in which offered
Printing Technology	4 th Semester

1. RATIONALE

An engineer has to work in industry with human capital and machines. Therefore, managerial skills are essential for enhancing their employability and career growth. This course is therefore designed to provide the basic concepts in management principles, safety aspects and industrial acts.

2. COMPETENCY

The purpose of this course is to help the student to attain the following industry identified competency through various teaching learning experiences:

- **Use relevant managerial skills for ensuring efficient and effective management.**

3. COURSE OUTCOMES (COs)

The practical exercises, the underpinning knowledge and the relevant soft skills associated with the identified competency are to be developed in the student for the achievement of the following COs:

- a) Understand the importance of management and discuss its functions & Principles
- b) Use principles of planning and organizing for accomplishment of tasks.
- c) Identify role & duties of personnel manager and discuss various methods of material management.
- d) Suggest various factors affecting location of press and production.
- e) Discuss the law of demand & supply and various acts used in printing industry.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P/2)	Examination Scheme				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	CA	ESE	CA	ESE	
3	-	-	3	30*	70	00	00	100

(*): Out of 30 marks under the theory CA, 10 marks are for assessment of the micro-project to facilitate integration of COs and the remaining 20 marks is the average of 2 tests to be taken during the semester for the assessing the attainment of the cognitive domain UOs required for the attainment of the COs.

Legends: L-Lecture; T – Tutorial/Teacher Guided Theory Practice; P -Practical; C – Credit, CA - Continuous Assessment; ESE -End Semester Examination.

5. SUGGESTED PRACTICAL EXERCISES

The following practical outcomes (PrOs) are the sub-components of the COs. *Some of the PrOs marked '**' (in approx. Hrs column) are compulsory, as they are crucial for that particular CO at the 'Precision Level' of Dave's Taxonomy related to 'Psychomotor Domain'.*

S. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. required
	Not Applicable		
	Total		

Note

- i. More **Practical Exercises** can be designed and offered by the respective course teacher to develop the industry relevant skills/outcomes to match the COs. The above table is only a suggestive list.
- ii. The following are some **sample** 'Process' and 'Product' related skills (more may be added/deleted depending on the course) that occur in the above listed **Practical Exercises** of this course required which are embedded in the COs and ultimately the competency.

S. No.	Sample Performance Indicators for the PrOs	Weightage in %
	Not Applicable.	
	Total	

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

This major equipment with broad specifications for the PrOs is a guide to procure them by the administrators to usher in uniformity of practical's in all institutions across the state.

S. No.	Equipment Name with Broad Specifications	PrO.No.
	Not Applicable	

7. AFFECTIVE DOMAIN OUTCOMES

The following **sample** Affective Domain Outcomes (ADOs) are embedded in many of the above mentioned COs and PrOs. More could be added to fulfill the development of this competency.

- a) Work as a leader/a team member.
- b) Follow safety practices.
- c) Adopt Ethical Practices.
- d) Manage Time
- e) Practice environmental friendly methods and processes.

The ADOs are best developed through the laboratory/field based exercises. Moreover, the level of achievement of the ADOs according to Krathwohl's 'Affective Domain Taxonomy' should gradually increase as planned below:

- i. 'Valuing Level' in 1st year
- ii. 'Organization Level' in 2nd year.

iii. 'Characterization Level' in 3rd year.

8. UNDERPINNING THEORY

The major underpinning theory is given below based on the higher level UOs of *Revised Bloom's taxonomy* that are formulated for development of the COs and competency. If required, more such higher level UOs could be included by the course teacher to focus on attainment of COs and competency.

Unit	Unit Outcomes (UOs) (4 to 6 UOs at different levels)	Topics and Sub-topics
Unit – I Introduction of Management concepts and managerial skills	1a. Differentiate the concept and principles of management for the given situation. 1b. Explain functions of management for given situation. 1c. Suggest suitable managerial skills for given situation with justification	1.1 Meaning of management and its importance. 1.2 Function of management 1.3 Principles of management 1.4 Introduction of management skills 1.4.1 Planning 1.4.2 Organizing 1.4.3 Directing 1.4.4 Co - ordination 1.4.5 Motivating 1.4.6 Controlling etc.
Unit – II Structure of Organization	2a. Suggest suitable type of organization for the given example. 2b. Suggest the steps in organizing in the given situation. 2c. Explain hierarchical arrangement of organization. 2d. Delegate authority in an organization.	2.1 Introduction of organization 2.2 Types of Organization. 2.3 Formal organization: line organization, functional organization and line & staff organization 2.4 Organization chart 2.5 Types of ownership: single ownership, partnership, private limited company and public limited company 2.6 Hierarchical arrangement of organization 2.7 Delegation of authority to each department like production, marketing, sales, administration etc.
Unit– III Personnel Management	3a. Describe role and duty of personnel manager 3b. Describe the human needs to satisfy the job needs for the specified situation. 3c. State the general safety norms required to be taken in the given case.	3.1 Role and duty of personnel manager 3.2 Methods for increasing productivity 3.3 Work study: need of work study and application of work study 3.4 Method study: need of method study and application of method study 3.5 Job evolution 3.6 General safety norms for Printing industry, preventive measures.

Unit– IV Material Management	4a. Describe purchasing and its function 4b. Select amongst methods of Purchasing 4c. Compute economic order quantity 4d. Describe function of store keeper 4e. Sustainable Material management	4.1 Purchasing and its function 4.2 Methods of purchasing 4.3 Stock and inventory control 4.4 Store management 4.5 Duties of store keeper 4.6 Economic order quantity 4.7 Function of store keeper 4.8 Perform ABC Analysis 4.9 Use materials in the most productive way with an emphasis on using less
Unit– V Printing Press	5.1 List factors for consideration in selecting location of press 5.2 Design press layout	5.1 Factors affecting locations 5.2 Factors affecting plant 5.3 Ideal layout of press 5.4 Factors affecting production
Unit– VI Demand and Supply	6.1 Describe laws of demand and supply 6.2 Explain law of Diminishing Utility	6.1 Law of demand 6.2 Law of supply 6.3 Relationship between demand and supply 6.4 Introduction to price, market and utility 6.5 Law of Diminishing Utility
Unit– VII Legislative Acts	7a. Explain the purpose of the act 7b. Explain the main provisions of the various acts and important definition.	7.1 Industrial acts - factory acts 7.2 Compensation acts 7.3 Employees' state insurance acts 7.4 Payment of wages acts 7.5 Printers' acts and copyrights 7.6 Delivery of book acts 7.7 Press council acts

9. SUGGESTED SPECIFICATION TABLE FOR QUESTIONPAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction of management concepts and managerial skills	07	04	04	04	12
II	Structure of organization	07	04	02	06	12
III	Personnel management	06	02	06	04	12
IV	Material management	07	04	04	04	12
V	Printing press	05	02	02	03	07
VI	Demand and supply	05	03	02	02	07
VII	Legislative acts	05	03	03	02	08
Total		42	22	23	25	70

Legends: R=Remember, U=Understand, A=Apply and above (Revised Bloom's taxonomy)

Note: This specification table provides general guidelines to assist student for their learning and to teachers to teach and question paper designers/setters to formulate test

items/questions assess the attainment of the UOs. The actual distribution of marks at different taxonomy levels (of R, U and A) in the question paper may vary slightly from above table.

10. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related **co-curricular** activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- a. Write assignments based on the theory taught in classrooms. Assignments consist of ten questions having long answers including charts, symbols, drawing, observations etc.
- b. Prepare/Download information about various industrial acts.
- c. Visit to any Manufacturing industry and prepare a report consisting of:
 - i. Organization structure of the organization/ Dept.
 - ii. Safety measures taken in organization.
 - iii. Mechanism to handle the disputes.
 - iv. Any specific observation you have noticed.
- d. Give seminar on relevant topic.
- e. Undertake micro-projects.

11. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a) Massive open online courses (**MOOCs**) may be used to teach various topics/sub topics.
- b) Guide student(s) in undertaking micro-projects.
- c) '**L**' in **section No. 4** means different types of teaching methods that are to be employed by teachers to develop the outcomes.
- d) About **20% of the topics/sub-topics** which are relatively simpler or descriptive in nature is to be given to the students for **self-learning**, but to be assessed using different assessment methods.
- e) With respect to **section No.10**, teachers need to ensure to create opportunities and provisions for **co-curricular activities**.
- f) Demonstrate students thoroughly before they start doing the practice.
- g) Encourage students to refer different websites to have deeper understanding of the subject.
- h) Observe continuously and monitor the performance of students in Lab.
- i) Demonstrate students thoroughly before they start doing the practice.
- j) Encourage students to refer different websites to have deeper understanding of the subject.

12. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her in the beginning of the semester. In the first four semesters, the micro-project are group-based (group of 3 to 5). However, **in the fifth and sixth semesters**, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs. Each student will have to maintain dated work diary consisting of individual contribution in the project work and give a seminar presentation of it before submission. The duration of the micro project should be about **14-16 (fourteen to sixteen) student engagement hours** during the course. The students ought to submit micro-project by the end of the semester to develop the industry-oriented COs.

A suggestive list of micro-projects is given here. This has to match the competency and the COs. Similar micro-projects could be added by the concerned course teacher:

- a. Study of management principles applied to a small-scale industry.
- b. Study of management principles applied to a medium scale industry.
- c. Study of management principles applied to a large-scale industry.
- d. Prepare case studies of safety measures followed in different types of organization.
- e. Study of measures to be taken for ensuring cyber security.
- f. Prepare case study of prices increase or decrease of various raw materials thorough out year.
- g. Collect data on Sustainable material management (SMM).
- h. Collect data on Life-cycle thinking (LCT) and Life-cycle Assessments (LCA).

13. SUGGESTED LEARNING RESOURCES

S. No.	Title of Book	Author	Publication with place, year and ISBN
1	Industrial Engineering and management	Dr. O. P. Khanna	Dhanpath ray and sons, New Delhi
2	Principles of management	Chaudhry omvir Singh prakash	New Age international publishers, 2012, New Delhi ISBN: 978-81-224-3039-4
3	Industrial Engineering and management	Banga and Sharma	Khanna Publication, New Delhi
4	Business organization and Management	S. A. Shekahr	Himalaya Publication

14. SOFTWARE/LEARNING WEBSITES

- a. <https://www.versesolutions.com/>
- b. <https://www.books.google.co.in/books?isbn=817758412X>
- c. <https://www.www.educba.com> › Courses › Business › Management

15. PO-COMPETENCY-CO MAPPING

Semester IV	Printer's Management (Course Code: 4345804)
	POs

Competency & Course Outcomes	PO 1 Basic & Discipline specific knowledge	PO 2 Problem Analysis	PO 3 Design/development of solutions	PO 4 Engineering Tools, Experimentation & Testing	PO 5 Engineering practices for society, sustainability & environment	PO 6 Project Management	PO 7 Life-long learning	PSO 1 Design and develop the product and process for the need of the industries and society.	PSO 2 Analyze and improve productivity, quality and cost effectiveness for the various pre-press, press and post press process involved in printing to meet the industries requirement.	PSO 3 (If needed)
<u>Competency</u>	Use relevant managerial skills for ensuring efficient and effective management.									
<u>Course Outcomes</u>										
CO a) Understand the importance of management and discuss its functions & Principles.	2	1	1	-	-	1	1	-	-	
CO b) Compare various types of organization and structure of organization.	2	2	1	-	2	-	-	-	-	
CO c) Identify role & duties of personnel manager and discuss various methods of material management.	2	-	-	3	-	1	1	-	-	
CO d) Suggest various	1	2	-	-	-	1	1	2	2	

factors affecting location of press and production										
CO e) Discuss the law of demand & supply and various acts used in printing industry.	2	-	1	-	-	2	1	-	-	

Legend: '3' for high, '2' for medium, '1' for low and '-' for no correlation of each CO with PO.

16. COURSE CURRICULUM DEVELOPMENT COMMITTEE

GTU Resource Persons

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