UNIVERSITY OF MUMBAI

Bachelor of Engineering

in

Printing and Packaging Technology

Final Year with Effect from AY 2022-23

(REV- 2019 'C' Scheme) from Academic Year 2019 – 20

Under

FACULTY OF SCIENCE & TECHNOLOGY

(As per AICTE guidelines with effect
from the academic year 2019–2020)

Syllabus for Approval

Sr. No.	Heading	Particulars
1	Title of the Course	**Final Year B.E. in Printing and Packaging Technology**
2	Eligibility for Admission	**After Passing Third Year Engineering as per the Ordinance 0.6243**
3	Passing Marks	**40%**
4	Ordinances / Regulations (if any)	**Ordinance 0.6243**
5	No. of Years / Semesters	**8 semesters**
6	Level	~~P.G.~~ **/ U.G./** ~~Diploma / Certificate~~ (Strike out which is not applicable)
7	Pattern	~~Yearly~~ **/ Semester** (Strike out which is not applicable)
8	Status	~~New~~ **/ Revised** (Strike out which is not applicable)
9	To be implemented from Academic Year	**2022-2023**

Date

Dr S K Ukarande
Associate Dean
Faculty of Science and Technology
Member, Academic Council, RRC in Engineering
University of Mumbai

Dr Anuradha Muzumdar
Dean
Faculty of Science and Technology
University of Mumbai

Preamble

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited. In line with this Faculty of Science and Technology (in particular Engineering) of University of Mumbai has taken a lead in incorporating philosophy of outcome-based education in the process of curriculum development.

Faculty resolved that course objectives and course outcomes are to be clearly defined for each course, so that all faculty members in affiliated institutes understand the depth and approach of course to be taught, which will enhance learner's learning process. Choice based Credit and grading system enables a much-required shift in focus from teacher-centric to learner-centric education since the workload estimated is based on the investment of time in learning and not in teaching. It also focuses on continuous evaluation which will enhance the quality of education. Credit assignment for courses is based on 15 weeks teaching learning process, however content of courses is to be taught in 12-13 weeks and remaining 2-3 weeks to be utilized for revision, guest lectures, coverage of content beyond syllabus etc.

There was a concern that the earlier revised curriculum more focused on providing information and knowledge across various domains of the said program, which led to heavily loading of students in terms of direct contact hours. In this regard, faculty of science and technology resolved that to minimize the burden of contact hours, total credits of entire program will be of 170, wherein focus is not only on providing knowledge but also on building skills, attitude and self-learning. Therefore, in the present curriculum skill based laboratories and mini projects are made mandatory across all disciplines of engineering in second and third year of programs, which will definitely facilitate self-learning of students. The overall credits and approach of curriculum proposed in the present revision is in line with AICTE model curriculum.

The present curriculum will be implemented for Second Year of Engineering from the academic year 2020-21. Subsequently this will be carried forward for Third Year and Final Year Engineering in the academic years 2021-22, 2022-23, respectively.

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Incorporation and implementation of Online Contents from NPTEL/ Swayam Platform

The curriculum revision is mainly focused on knowledge component, skill based activities and project based activities. Self-learning opportunities are provided to learners. In the revision process this time in particular Revised syllabus of 'C' scheme wherever possible additional resource links of platforms such as NPTEL, Swayam are appropriately provided. In an earlier revision of curriculum in the year 2012 and 2016 in Revised scheme 'A' and 'B' respectively, efforts were made to use online contents more appropriately as additional learning materials to enhance learning of students.

In the current revision based on the recommendation of AICTE model curriculum overall credits are reduced to 171, to provide opportunity of self-learning to learner. Learners are now getting sufficient time for self-learning either through online courses or additional projects for enhancing their knowledge and skill sets.

The Principals / HoD's / Faculties of all the institute are required to motivate and encourage learners to use additional online resources available on platforms such as NPTEL/ Swayam. Learners can be advised to take up online courses, on successful completion they are required to submit certification for the same. This will definitely help learners to facilitate their enhanced learning based on their interest.

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Semester VIII

Course Code	Course Name	Teaching Scheme (Contact Hours)		Credits Assigned	
		Theory	Pract.	Pract.	Total
PPP801	Industrial Training & Project*	--	5x8=40	20	20
Total		**--**	**40**	**20**	**20**

Course Code	Course Name	Examination Scheme					
		Theory			Term Work	Prac/ oral	Total
		Internal Assessment	End Sem Exam	Exam. Duration (in Hrs)			
		Midterm					
PPP801	Industrial Training & Project*	50	--	--	100	50	200
Total		**50**	**--**	--	**100**	**50**	**200**

* Industrial Training and Project work shall be of 24 weeks duration.
(Learners load: 8 hours a day and 5 days a week translates into 40 contact hours per week)

Industrial Training & Project:
Students can form groups with not more than 4 (Four)
Faculty Load: In Semester VIII – 1 hour per week per two project groups.

Department Optional Courses

Course Code	Course Name	Credits
PPP801	**Industrial Training & Project**	**20**

Objectives

1. To impart practical exposure to industry.
2. To develop corporate/business ethics and learn organization culture.
3. To enhance entrepreneurial aptitude
4. To understand the workings of an organization, project management, among others.

Outcomes: At the end of the course, learners will be able to;

1. Exhibit the corporate culture/ethics in their workspace/career.
2. Identify the size and scale of operations in Industry.
3. Accomplish allotted tasks within deadlines.
4. Demonstrate an understanding of various constraints in industry.
5. Learn problem solving techniques and also work as a team.
6. Apply the knowledge learnt in their own career.

Guidelines for Evaluation/Assessment

The total duration for each presentation shall be maximum 30 minutes, inclusive of 20 minutes for presentation and 10 minutes for discussion.

50 marks to be awarded during **Mid-term review** based on the points furnished below and as per the discretion of the internal project guide & external examiner:

1. Contents of the presentation.
2. Presentation skills.
3. Interest taken, personal involvement and contribution.
4. Headway/progress made in the project execution.

Evaluation/Assessment of the Term Work Marks

1. Introduction, Acknowledgements, references, Company background/activities. Synopsis/Abstract of the Project/General presentation, neatness and accuracy of the data furnished.	10
2. Internship/Training details.	10
3. Technical contents of the report with data / observations, graphs, drawings, etc. and Quality of work carried out and details furnished based on personal Observations/involvement.	30
4. Results/ Conclusion.	10
5. Industry Evaluation.	40
	Total – 100

Oral examination / Presentation:

Final End-semester Oral presentation to be conducted by internal and external examiners for **50 marks.**

Industrial Training Guidelines

1. In Professional Internship (in-plant/industrial training) students will be allotted/placed in company/industry/plant or a factory related to printing & packaging technology for duration of 24 weeks.
2. Professional Internship (PI) can also include working under a Research Scholar to assist in research, joining as a trainee in private institutes/laboratories/organizations/small firms for the said period.
3. The student shall spend the PI period for observational training and solving assignments/projects given by the organization. Students are expected to analyze the problems systematically and offer suggestion / concluding remarks.
4. Students are required to observe and learn the organization mission/vision/objective, the executive hierarchy, functioning, production, management and laws/regulation/compliance with Indian and International standards.
5. Students are required to maintain a diary to record daily activities at the organization w.r.t. processes/systems learnt, or work done.
6. Industrial training shall also include fortnightly reports submission and discussions by students with respective guides.

Project Guidelines

1. The student shall submit a report on project, suggested by industry where he/she is undergoing professional/In-plant training.
2. Project may be of the following types, but not limited to:
    - Manufacturing / Fabrication of a prototype including selection, concept design, material selection, manufacturing the components, assembly of components, testing and performance evaluation.
    - Improvement of existing machine / equipment / process.
    - Design and Fabrication of parts, tools, special purpose equipment, gauges, measuring instruments, etc.
    - Computer aided design, analysis of components such as stress analysis, etc.
    - Problems related to productivity improvements.
    - Problems related to value engineering.
    - Problems related to material handling system.
    - Product design and development
    - Detailed cost estimation of product.
    - Analysis, evaluation and experimental verification of any engineering problem encountered.
    - Quality system and management, Total quality management.
    - Quality improvements In-process Inspection Online
    - Waste management system, Safety, etc.
    - Market analysis in conjunction with production, planning and control.
    - Any other relevant topic, as approved by the internal guide.
3. The student shall submit a detailed report based on the project work.
4. The topic/area should be finalized in stipulated time period.
5. Each student is to have an internal guide from the Institute and one external guide from the corresponding organization.
6. Mid semester evaluation of the project is to be done after about 9-10 weeks by internal guide
7. End-semester evaluation and viva voce will be conducted by a committee consisting of an internal examiner and external examiner approved by University of Mumbai.

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