

| U24PT4E01 | TITLE | CREDITS 2 (2Th) |
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| To be decided | Packaging Design & Development (Sem-IV OE) | |
| Course objectives: | 1. To learn & understand the stages of packaging design and development for any product. | |
| Course Outcomes: | Learners will be able to: 1. Explain the design & development stages involved in creating a new package. 2. Describe the importance of package testing during development. 3. Elaborate on the significance of considering packaging cost and sustainability. | |
| Unit I: Packaging Design | | Lectures 15 |
| <ul style="list-style-type: none"> • Packaging Design Basics: Design Thinking concepts, Graphics (influence of colour, typography, balance, etc.) & Structural (influence of ergonomics, convenience, material reduction, strength, etc.) • Packaging Technology – Introduction, Market Survey / Study. • Packaging Materials – Introduction to primary and ancillary packaging materials. Selection Criteria – Compatibility studies – Shelf-Life evaluation / Stability studies. • Industry Wise Packaging – Key Concepts (Consumer vs Industrial Product Packaging) • Manufacturing Process of Packaging Materials (Major manufacturing & conversion processes) • Caps and Closures; Labels & Printing Technology | | |
| Unit II: Packaging Development | | Lectures 15 |
| <ul style="list-style-type: none"> • Dies and Tooling – Requirement and Designing • Prototyping / Trials of end use form. • Packaging Testing – Parameters & Studies. • Breakage in Transit & Packaging Development – Transport Tests – Drop, Vibration, Impact Compression, Rolling. • Secondary Packaging Concepts & Materials • Packaging Sustainability and Costing • Case studies of packaging design & development for an FMCG / Food product. | | |

References:

- Soroka W., “Fundamentals of Packaging Technology”, 3rd Ed, IoPP, 2002.
- Paine F. A., “The Packaging User’s Handbook”, 1st Ed, Blackie Academic & Professional, 1991.
- Byett J. et al., “Packaging Technology”, 2nd Ed, The Institute of Packaging (SA), 2001.
- Selke, S. E. M., Culter, J. D. and Hernandez, R. J., “Plastics Packaging: Properties, processing, Applications and Regulation”, Carl Hanser Verlag, USA, 2004.
- Joseph F. H, Robert J. K, Hallie F, “Handbook of Package Engineering”, Third Edition, Technomic Publishing, 1998.
- Yam K. L., “The Wiley Encyclopedia of Packaging Technology”, Third Edition, Wiley, 2009.

The scheme of examination shall be divided into two parts:

Internal Examination 40% i.e. 20 Marks

Semester-end Examination 60% i.e. 30 Marks

(A) Internal Assessment 40 Marks:

| Description | Marks |
|--|--------------|
| Internal Test of 10 Marks | 10 |
| Q.1 MCQs or True / False - 5 Marks | |
| Q.2 Attempt one out of 2 question (5 Marks each) - 5 Marks | |
| Attendance & Class Behaviour | 10 |
| Total | 20 |

(B) Semester end examination 60 Marks:

| Duration - 1 Hour | Total Marks - 30 |
|--|-------------------------|
| Q.1. (A) OR (B) – 10 Marks each | 10 |
| Q.2. (A) OR (B) – 10 Marks each | 10 |
| Q.3. (A) OR (B) – 10 Marks each | 10 |
| Total | 30 |
| Note: Q.1, 2 may be divided into sub-questions if required Q.3 may include theory (short notes) or case study in one of the options. | |

Passing Criteria: Minimum 40% in Internal (8 out of 20) and 40% (12 out of 30) in end semester examination