

CONCURRENT ENGINEERING

Course Code	22 MEMD2T6C	Year	I	Semester	II
Course Category	Programme Elective	Branch	ME	Course Type	Theory
Credits	4	L-T-P	4-0-0	Prerequisites	Nil
Continuous Internal Evaluation:	40	Semester End Evaluation:	60	Total Marks:	100

Course outcomes: At the end of the course, the student will be able to:

CO	Statement	BTL	Units
CO1	Understand various factors and techniques required to optimize the product development process. Understand the need for adopting CE methodology to organizations.	L2	1
CO2	Get acquainted with the importance of such factors as the right corporate culture, multidisciplinary teams and their empowerment for successful implementation of CE.	L3	2
CO3	Undertake an evaluation of the company's present communication infrastructure and recommend suitable changes to support the CE environment.	L3	3
CO4	Become familiar with a range of computer based tools for modelling engineering processes and information.	L3	4

Contribution of Course outcomes towards achievement of programme outcomes & Strength of correlations (High:3, Medium: 2, Low:1)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO 1	2	2	1	2	2	1	1						2	1
CO 2	2	2	1	2	2	1	1						2	1
CO 3	2	2	1	2	2	1	1						2	1
CO 4	2	2	1	2	2	1	1						2	1

Syllabus		
Unit	Contents	Mapped CO
1	Integrated Product Development: Idealized model for Integrated Product Development, Integration between project and management, Integration with other development activities, understanding the IPD model, Validity of the IPD model. Introduction: Extensive definition of CE - CE design methodologies - Organizing for CE –CE tool box collaborative product development.	CO1, CO2
2	Design Stage: Life-cycle design of products - opportunity for manufacturing enterprises - modality of Concurrent Engineering Design, Automated analysis idealization control - Concurrent engineering in optimal structural design.	CO2
3	Conceptual design mechanism – Qualitative physical approach, An intelligent design for manufacturing system Modeling and reasoning for computer based assembly planning.	CO3
4	Design for economics - evaluation of design for manufacturing cost, Concurrent mechanical design - decomposition in concurrent design - negotiation in concurrent engineering design studies.	CO4

Learning Resources
<p>Text Book(s):</p> <ol style="list-style-type: none"> 1. Anderson MM and Hein, L. Berlin, "Integrated Product Development", Springer Verlag, 1987 2. Cleetus, J, "Design for Concurrent Engineering", Concurrent Engg. Research Centre, Morgantown, WV, 1992
<p>References:</p> <ol style="list-style-type: none"> 1. Andrew Kusaik, "Concurrent Engineering: Automation Tools and Technology", John Wiley and Sons Inc., 1992 2. Prasad, "Concurrent Engineering Fundamentals: Integrated Product Development", Prentice Hall, 1996 3. Sammy G Sinha, "Successful Implementation of Concurrent Product and Process", John Wiley and Sons Inc., 1999