

# GUJARAT TECHNOLOGICAL UNIVERSITY

## MECHANICAL (INDUSTRIAL ENGINEERING) (46)

### ENTERPRISE RESOURCE PLANNING

**SUBJECT CODE:** 2734606

M.E. 3<sup>rd</sup> SEMESTER

**Type of course:** Major Elective - IV

**Prerequisite:** Nil

**Rationale:** The aim of this course is to make students aware about 'Enterprise Resource Planning - ERP', which is a process by which a company manages and integrates the important parts of its business. An ERP management information system integrates areas such as planning, purchasing, inventory, sales, marketing, finance, human resources, etc.

#### Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks						Total Marks
L	T	P		Theory Marks		Practical Marks				
			ESE (E)	PA (M)	ESE (V)		PA (I)			
					ESE	OEP	PA	RP		
3	2#	2	5	70	30	20	10	10	10	150

#### Content:

Sr. No.	Content	Total Hrs	Weightage %
1	<b>Introduction to ERP:</b> Common ERP myths, Evolution of ERP, Advantages, Characteristics, Process integration with ERP system, Implementation costs, Roadmap for successful ERP implementation.	4	9
2	<b>ERP Market and Vendors:</b> ERP market, ERP vendors, Service oriented architecture, ERP package features.	4	9
3	<b>Extended ERP services:</b> Defining Extended ERP, Supply chain Management (SCM) and ERP, ERP and Business Intelligence (BI), ERP and E-commerce.	4	9
4	<b>Business Process Re-engineering (BPR) and ERP:</b> Defining BPR, BPR Vs TQM, BPR and change management, approaches in BPR implementation, Methodologies for BPR implementation, BPR success/failure factors.	6	13
5	<b>Planning for ERP:</b> Planning for ERP implementation, understanding organizational requirement, Economic and strategic justification, Project scope, Determining resources, organizational commitment to change, budget for ERP, select right ERP package.	6	13
6	<b>Implementation of ERP:</b> Designs of ERP system, ERP implementation approach, ERP implementation life cycle, different phases of ERP implementation.	3	7
7	<b>Managing ERP projects:</b> Risk/Failure factors in ERP implementation, Example of ERP failure, Critical success factors, Complexities of ERP projects, Evaluating ERP projects.	4	9
8	<b>ERP: Going Live and post implementation:</b> Preparing to go live, Strategies for migration to new ERP system, Managing ERP after Go Live, Maintenance of ERP system.	4	9
9	<b>ERP, Internet and WWW – ERP II:</b> The internet explosion, ERP, Internet	4	9

	and WWW, ERP to ERP II, Best practices of ERP II.		
<b>10</b>	<b>Future directions and Trends in ERP:</b> New markets, New channels, Easier communication tools, Business models, Need based applications, Expenditures, Reduction in implementation time, Market snap shots, Shifting revenue models.	6	13
		<b>45</b>	<b>100</b>

**Reference Books:**

1. Enterprise Resource Planning, Ashim Raj Singla, Cengage Learning India Pvt. Ltd., New Delhi, 2008.
2. Enterprise Resource Planning, Alexis Leon, 2<sup>nd</sup> edition, Tata Mcgraw Hill Education Pvt. Ltd., New Delhi, 2008.
3. E-Business and ERP: Transforming the Enterprise, Grant Norris, James R. Hurley, Kenneth M. Hartley, John R. Dunleavy, John D. Balls, John Wiley and Sons, 2000.
4. Enterprise Resource Planning: Concepts and Practice, V.K. Garg.

**Course Outcome:**

**After learning the course the students should be able to:**

1. Understand the concepts and importance of ERP system.
2. Understand ERP market and vendors.
3. Understand the relationship of ERP and SCM.
4. They should be able to understand the concept ERP implementation.

**List of Tutorials:**

1. Study of ERP and its application and myths.
2. Study of ERP features.
3. BPR and ERP and SCM.
4. ERP implementation and challenges.
5. Case studies and research papers analysis on the topics from syllabus.

**Design based Problems (DP)/Open Ended Problem:**

Presentation of case studied based on ERP/SAP project implementations.

**Major Equipment:** NA

**List of Open Source Software/learning website:** NA

**Review Presentation (RP):** The concerned faculty member shall provide the list of peer reviewed Journals and Tier-I and Tier-II Conferences relating to the subject (or relating to the area of thesis for seminar) to the students in the beginning of the semester. The same list will be uploaded on GTU website during the first two weeks of the start of the semester. Every student or a group of students shall critically study 2 papers, integrate the details and make presentation in the last two weeks of the semester. The GTU marks entry portal will allow entry of marks only after uploading of the best 3 presentations. A unique id number will be generated only after uploading the presentations. Thereafter the entry of marks will be allowed. The best 3 presentations of each college will be uploaded on GTU website.