

**Description** This course is designed to provide the student with a thorough understanding of both the role that Enterprise Resource Planning Systems (ERPs) play in an organization and the challenging task of managing the Information Systems (IS) function. During the semester, homework will be assigned that give the student the opportunity to work through many real-life business situations using the SAP S/4HANA system and explore the interaction among the different business processes. SAP is the world's leading provider of Enterprise software designed to integrate every aspect of a company's operation. The hands-on exercises, coupled with the in-class discussions of ERPs, will prepare the student with the knowledge sought by businesses looking to use technology to maintain their competitive edge in the marketplace.

**Objectives** At the completion of the course, students will be able to

- Describe how ERP systems use relational databases to store, manipulate, retrieve and present business data
- Describe the role of an ERP in carrying out business processes in a company
- Explain how 'best business practices' are incorporated in an ERP
- Execute an entire business process chain in the following areas
  - Accounting
  - Sales
  - Procurement
  - Materials Management
  - Production
- Strategize pricing, production, distribution and sales in a competitive commodity market
- Analyze sales data in an ERP to dynamically respond to changing market conditions to maximize profits
- Expedite procurement planning and control using tools provided in an ERP (e.g. MRP)
- Report on the reasons for the success (or failure) of their production and sales strategy

**Instructor** Nitin Kalé, Professor  
Information Technology Program and  
Daniel J. Epstein Department of Industrial and Systems Engineering  
kale@usc.edu | RRB 224

**Office Hours** TBD

**Course TAs** TBD

**Lecture** MW 8 am – 9:50 am, THH 118

**Simulation Game** An ERPSimulation Game will be played during lecture towards the last 5-6 weeks of the semester. Participation in the game is **mandatory** for all students. **All students must bring their laptops to class.**

**Required Books**

- ERP Simulation Game: *Participant's Manual* (ebook) will be available for purchase online (cost \$50 CAD payable online by credit card, details to be announced mid semester)

**Software** SAP is the leading vendor of Enterprise Resource Planning Systems in the world. ITP/USC has had an Academic Alliance with SAP University Alliances Program for the past 25 years. Several ITP courses utilize the SAP system as a tool and platform. Students will receive software (SAP GUI for both Windows and MAC) to connect to the **SAP S/4HANA** server so that they can work from their own computers.

**Website** <https://blackboard.usc.edu>

**Grading** The weight of graded material during the semester is listed below. **No extra credit assignments will be offered.**

Homework	25%
ERPSim Game	
Peer evaluation (Individual)	5%
Game performance (Team)	5%
Intro Game analysis (Individual)	5%
Extended Game analysis (Team)	10%
Exam I	25%
Exam II	25%
Total	100%

## Policies

Students are expected to attend and participate in lecture discussions, in-class exercises and team meetings.

Students are responsible for completing individual assignments and their fair share of team assignments by stated deadlines. Assignments turned in late will have 25% of the total points deducted from the graded score for each late day.

No make-up exams (except for documented medical or family emergencies) will be offered. If they will not be able to attend an exam due to an athletic game or other valid reason, then they must coordinate with the instructor before the exam is given. They may arrange to take the exam before they leave, with an approved university personnel during the time they are gone, or within the week the exam is given. If students do not take an exam, then they will receive a 0 for the exam.

If students need accommodations authorized by DSP (Disability Services and Programs), notify the instructor at least two weeks before the exam. This will allow time for arrangements to be made.

Depending on University guidelines, Zoom synchronous sessions will be recorded and provided to all students asynchronously.

## Sharing of course materials outside of the learning environment

*SCampus Section 11.12(B)*

*Distribution or use of notes or recordings based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study is a violation of the USC Student Conduct Code. This includes, but is not limited to, providing materials for distribution by services publishing class notes. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the Internet or via any other media. (See Section C.1 Class Notes Policy).*

## Statement on Academic Conduct and Support Systems

### Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” [policy.usc.edu/scampus-part-b](http://policy.usc.edu/scampus-part-b). Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, [policy.usc.edu/scientific-misconduct](http://policy.usc.edu/scientific-misconduct).

### Support Systems:

*Counseling and Mental Health - (213) 740-9355 – 24/7 on call*  
[studenthealth.usc.edu/counseling](http://studenthealth.usc.edu/counseling)

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

*National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call*  
[suicidepreventionlifeline.org](http://suicidepreventionlifeline.org)

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

*Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press “0” after hours – 24/7 on call*  
[studenthealth.usc.edu/sexual-assault](http://studenthealth.usc.edu/sexual-assault)

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

*Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298*

[equity.usc.edu](http://equity.usc.edu), [titleix.usc.edu](http://titleix.usc.edu)

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

*Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298*

[usc-advocate.symplicity.com/care\\_report](http://usc-advocate.symplicity.com/care_report)

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity | Title IX for appropriate investigation, supportive measures, and response.

*The Office of Disability Services and Programs - (213) 740-0776*

[dsp.usc.edu](http://dsp.usc.edu)

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

*USC Campus Support and Intervention - (213) 821-4710*

[campussupport.usc.edu](http://campussupport.usc.edu)

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

*Diversity at USC - (213) 740-2101*

[diversity.usc.edu](http://diversity.usc.edu)

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

*USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call*

[dps.usc.edu](http://dps.usc.edu), [emergency.usc.edu](http://emergency.usc.edu)

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

*USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call*

[dps.usc.edu](http://dps.usc.edu)

Non-emergency assistance or information.

# Enterprise Information Systems

## ITP 320x (4 Units)

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### Course Outline

#### Week 1 - Introduction

- Course Overview

#### Week 1 – ERP Basics

- Discussion of database applications
- Understanding the difference between Business function and business process
- Overview of Enterprise Resource Planning (ERP)
- Client/Server Technology, 2 Tier, 3 Tier, n Tier
- Examples of ERP – SAP
  - Getting Started with SAP
  - Introduction to Global Bike Inc. (GBI) – Case company

**Homework 1: ERP Environment** – Explore the client/server architecture of SAP. Learn how to use the user interface.

#### Week 2 - Accounting

- Financial Accounting
  - Understanding Generally Accepted Accounting Principles GAAP
  - A quick overview of Accounting basics – Double entry accounting, debit and credit, T-accounts, Chart of Accounts, Balance sheet, Profit and Loss Statement,
  - Posting financial transactions

**Homework 2: Accounting** – Post financial transactions and then see their effect on Balance Sheet and Profit/Loss Statement. Post an expense and then allocate those cost to cost centers.

#### Week 2 - Accounting contd.

- Managerial Accounting
  - Controlling – Cost centers and cost elements
  - Allocating Costs – Assessments and distributions

#### Week 3 - Business processes Management – Sales Process

- Sales and fulfillment process
- Master Data and its role in ERP systems
- Creating customer master data, material master data and pricing conditions

**Homework 3: Sales Cycle** – Create customer, material master data. Execute the Sales process in SAP.

#### Week 3 - Business processes Management – Sales Process contd.

- Executing a Sales Cycle
- Difference between transactional data and master data
- Reporting and analysis of sales data

#### Week 4 – Procurement Process

- Forecasting raw material requirements using sales information, production requirements, sales forecast

- Difference between purchase requisitions and purchase orders
- How to source materials
- Vendors and pricing conditions
- Type of goods movement. Receiving goods into inventory

**Homework 4: Purchasing Cycle** – Create vendor, material master data for purchasing.. Execute the Purchasing process in SAP.

**Week 4** – Procurement Process contd.

- Executing the Purchasing Cycle

**Week 5** - Materials Management

- Creating a production plan (from forecasting etc.)
- What is MPS? Master Production Schedule
- What is MRP? How does MRP calculate material requirements – Materials Requirement Planning

**Homework 5: Materials Planning** – Create master data to support the production cycle. Generate historical consumption data which will be used to forecast future demand. Create a sales forecast. Create a production schedule using the sales forecast and safety stock.

**Week 5** - Materials Management contd.

- Independent and dependent materials requirements

**Homework 6: Production Cycle** –Execute the production cycle to produce finished goods. Compute actual costs.

**Week 6** – Production Process: Planning and Execution

- Master data needed for production
  - Bill of Materials
  - Work Centers
  - Routings
- Creating Production orders
- Releasing and confirming production orders

**Week 6** – Production Process: Planning and Execution contd.

- Executing a Production process
- Monitoring Inventory and Goods movement

**Week 7** - ERP Simulation Game

- Goals of the ERP Simulation Game
- Game description

**Week 7** - Exam I

**Week 8** - ERP Simulation Game contd.

- How the market works, dynamic commodity demand and supply
- Teams and roles

**Week 8** - ERPSim – Round 1

- Introductory game

**Week 9 - ERPSim – Rounds 2, 3**

- Introductory game
- Analyzing data from the game
- Analyzing Profit and Loss statement for the company

**Week 9 - ERPSim – Rounds 4, 5**

- Introductory game
- Analyzing data from the game
- Analyzing Profit and Loss statement for the company

**Week 10 - ERPSim – Rounds 6, 7**

- Introductory game
- Analyzing data from the game
- Analyzing Profit and Loss statement for the company

**Week 10 - ERPSim contd.**

- Description of variables and constraints in the extended game
- Role of team members in the game
- Planning and forecasting for procurement, production and distribution
- Strategies for maximizing profits
- Interest and warehouse costs

**Week 11 - ERPSim – Rounds 1, 2**

- Extended ERPSim contest
- Playing the simulation game in real time as the market fluctuates

**Week 11 - ERPSim – Rounds 3, 4**

- Extended ERPSim contest
- Playing the simulation game in real time as the market fluctuates

**Week 12 - ERPSim – Rounds 5, 6**

- Extended ERPSim contest
- Playing the simulation game in real time as the market fluctuates

**Week 12 – ERPSim - Rounds 7, 8**

- Extended ERPSim contest
- Playing the simulation game in real time as the market fluctuates
- Analysis of the entire game/market

**Week 13 – ERPSim - Rounds 9, 10**

- Extended ERPSim contest
- Playing the simulation game in real time as the market fluctuates
- Analysis of the entire game/market

**Week 13 – ERPSim - Rounds 11, 12**

- Extended ERPSim contest
- Playing the simulation game in real time as the market fluctuates
- Analysis of the entire game/market

**Week 14 – Extended Game Analysis**

- Analysis of extended game

**Week 14 – Class discussion**

- **Other ERP topics** (courses at ITP)
  - ERP Configuration
  - Data warehousing
  - In-memory data management
- Enterprise Minor

**Week 15 – Exam II**

**Week 16 - ERPSim Peer Eval due**