



MGT 3210: Operations Management

2022 Spring Session	
Total Class Sessions: 25 Class Sessions Per Week: 5 Total Weeks: 5 Class Session Length (Minutes): 145 Credit Hours: 4	Instructor: Staff Classroom: TBA Office Hours: TBA Language: English

Course Description:

This course explores the fundamentals of operations management. It aims to help students develop problem-solving skills with analytical techniques. The course will mainly discuss the following topics: quantitative methods (linear programming, queuing models and simulation), quality management, product and service design, process selection and capacity planning, design of work systems, inventory management, aggregate planning, material requirements planning, scheduling, waiting line model, just-in-time systems, and supply chain management.

Course Materials:

1. **In-class Handouts**

Contents of handouts will be mainly selected from the optional textbook below. Students are not required to buy textbooks. The in-class handouts are the only mandatory course materials.

2. **Optional Texts:**

Operations Management,

Jay Heizer and Barry Render, 13th edition.

Course Format and Requirements:

Classes will start and end on time. Regular attendance is expected. Late entry or reentry to a class session is allowed only under exceptional circumstances. All phones, laptops and other electronic devices should be turned off.

Regular class presence is required. Attentive participation and informed discussions are critical to the learning process; they make classes more interesting and enjoyable for all the students. Students are encouraged to volunteer substantive comments and questions freely.

Attendance:

Attendance is important, mandatory, and critical to the success of the class. It's understandable that sometimes personal issues come up and making class is sometimes difficult. Attendance will be taken every class. A student can miss up to 4 (FOUR) classes without any penalty for attendance points. The fifth absence will result in a loss of all attendance score (10% of the final score). University excused absences will be considered up until 24 hours after the class period has ended. Leaving the lecture early without permission is automatically an unexcused absence.



Two late arrivals constitute an un-excused absence.

Course Assignments:

***NOTICE: No make-up exams are offered** unless you have a written excuse from your doctor or the University.

Quizzes:

Throughout the semester, students will have seven in-class quizzes. The formats include group work, mini-papers, multiple choices and True/False. Two lowest in-class writing grades of the semester will be dropped. In-class writing assignments cannot be made up.

Exams:

Midterm Exams

These exams will be based on concepts covered in class and problems in the homework assignments. The 3 midterm exams will be in-class, close-book and non-cumulative.

Final Exam

The final will be cumulative to allow you to demonstrate the breadth of knowledge you've acquired throughout the semester. The final exam will be close-book. The final exam is worth 35% of the total final score. Note that the final will not be taken during the normal class times. Exact time and location for final will be announced in the last week of sessions.

Course Assessment:

Attendance	10%
Top 5 Quizzes	10%
Midterm Exam 1	15%
Midterm Exam 2	15%
Midterm Exam 3	15%
Final Exam	35%
Total	100%

Grading Scale (percentage):

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
98- 100	93- 97	90- 92	88- 89	83- 87	80- 82	78- 79	73- 77	70- 72	68- 69	63- 67	60- 62	<60

Academic Integrity:

Students are encouraged to study together, and to discuss lecture topics with one another, but all other work should be completed independently.

Students are expected to adhere to the standards of academic honesty and integrity that are described in the Chengdu University of Technology's *Academic Conduct Code*. Any work suspected of violating the standards of the *Academic Conduct Code* will be reported to the Dean's Office. Penalties for violating the *Academic Conduct Code* may include dismissal from



the program. All students have an individual responsibility to know and understand the provisions of the *Academic Conduct Code*.

Special Needs or Assistance:

Please contact the Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material. Our goal is to help you learn, not to penalize you for issues which mask your learning.

Course Schedule:

Class 1:

Course overview;

Go through syllabus;

The role operations have in services and goods;

Variables associated to productivity and how it is measured;

Class 2:

Strategic options for a competitive advantage through operations

Key operations management decisions;

Critiquing key success factors and core competencies enabled through the execution of operations management decisions

Class 3:

Supply chain strategies

Use factor rating to evaluate key decisions

Enterprise applications of operations management decisions and strategies

Plan, schedule, and control projects across operations

Class 4:

Quiz 1

Apply Program Evaluation and Review Technique (PERT)

Develop a Gantt chart schedule

Slack time and project crashing needs for a project

Class 5:

Evaluate trade-offs, risks, and estimates to time and cost project objectives

Probability and confidence levels for project completion

Importance of forecasting

Class 6:



Types, steps, and approaches used across supply chains
Design and process strategies,
Product life cycle;

Class 7:
Midterm 1

Class 8:
Analyze how products and services are designed to create value for the customer by integrating diverse expectations, technology, and sustainability needs
Corporate social responsibility and sustainability practices

Class 9:
Quiz 2
Probability distributions and attributes versus variables
Statistical quality control and customer service levels
Cost of quality, quality certifications, continuous improvement, benchmarking, Taguchi loss function, service warranty/guarantee and recovery, and other quality management strategies.

Class 10:
Use quality tools to analyze variation and quality issues for prioritization and improvement needs
Process capability and control chart limits for statistical process control
Build spreadsheet models to analyze quality

Class 11:
Quiz 3
D processes using flowcharts, process maps, value stream maps, process charts, and service blueprinting
Process capacity, utilization, efficiency, and bottlenecks to improve product, service, and process decisions

Class 12:
Importance and factors that affect location decisions
Methods used to evaluate location alternatives and strategies
Layout types, services capes, software modeling and cellular design

Class 13:
Midterm 2

Class 14:



Work load balancing, and efficient flow strategies

Labor planning, scheduling, policies, job design, ergonomics, methods analysis, visual workplace, labor standards, and other human resource strategies

Risks, ethics, vendor selection, logistics, performance measurement, economics, and other supply chain strategies.

Class 15:

Quiz 4

Integrate supply chains across complex systems;

Develop transportation models to minimize shipping cost.

Types, functions, importance, and models used to manage inventory

Class 16:

Apply queuing theory to understand waiting line systems and performance

Sales & operations planning (S&OP), chase versus level strategies, and yield management strategies; Information technology through various operating decisions

Dependent vs. independent demand

Class 17:

Quiz 5

Master production schedule (MPS), bill of material (BOM)

Inventory management, purchase/work orders, lead-time, lot-sizing

Other operating system requirements

Material requirements planning (MRP)

Class 18:

Capacity planning,

Distribution requirement planning (DRP)

Warehouse management systems (WMS)

Class 19:

Midterm 3

Class 20:

Resource planning (ERP) systems

Analyze short-term scheduling importance, issues, assignment, sequencing, input-output control, and capacity decisions

Class 21:

Quiz 6



Emerging technology, modeling, and simulation systems used to enable operation decisions and enhance value chain performance

Advantages and disadvantages of modeling with simulation

Class 22:

Layout, human resource, supplier partnerships,

Performance metrics, inventory and setup reduction, Pull/Kanban systems, standard work

Other strategies for continuous improvement

Class 23:

Quiz 7

Importance of maintenance and reliability

Techniques used to enhance reliability

Class 24:

Formulating linear program problems with solution methods and sensitivity analysis

Defining and computing learning curves to understand the strategic implications on operation decisions.

Class 25:

Wrap-up

Review for FINAL

Final Exam (Cumulative): TBA