TRINE
UNIVERSITY

COURSE SYLLABUS

COURSE TITLE: Operations Analytics **TERM & YEAR:**

COURSE & SECTION NUMBER: BAN 5003 **TIME & PLACE:**

NUMBER OF CREDIT HOURS: 3

COURSE DESCRIPTION: This course is an introduction to the principles and techniques of operations analytics. Operations and supply management is defined as the design, operation, and improvement of the systems that create and deliver the organization's primary products and services. In this course, students will learn models and techniques that work with large data sources. This course will demonstrate the application of operations models that are currently being used in industry incorporating big data. Topics considered include process analysis, workforce issues, materials management, quality and productivity, technology, and strategic planning, together with relevant analytical techniques.

PREREQUISITES: None

REQUIRED TEXT: No Textbook

OTHER MATERIALS: Open Education Resources (OER) embedded in the course

LEARNING OUTCOMES: Upon completion of this course, the student should be able to:

1. Create demand forecasts using relevant and current industry operational data.
2. Construct process improvement models that optimize operational yield.
3. Analyze operational management situations and demonstrate an ability to make ethical management decisions.
4. Use case studies to solve and make recommendations to supply chain, logistical, and operational problems.
5. Demonstrate effective analytical and communication skills.

COURSE REQUIREMENTS:

Students will be required to:

1. Participate and share ideas in weekly discussions
2. Complete written assignments
3. Complete Case Studies
4. Read weekly learning materials
5. Watch weekly videos

ATTENDANCE/PARTICIPATION:

All students are expected to log in to their courses regularly throughout the week to receive instruction, materials, and updates from the instructor. It is your responsibility to check in and submit your assignments, complete your discussion board postings, and finish quizzes and exams by the due dates.

If you do not participate in the course, you will be counted absent. Simply logging in is not enough; you must submit/complete an assignment, post to a discussion board, or other similar assignment tasks to avoid being counted absent. Instructors are required to submit attendance the Monday following each week of class.

GRADING/EVALUATION

Grade	Percentage	Quality Points	Meaning of Grade
A	93-100	4.0	Excellent
B+	87-92	3.5	Very Good
B	81-86	3.0	Good
C+	75-80	2.5	Above Average
C	70-74	2.0	Average (lowest passing grade)
F	00-69	0.0	Failure
S	Satisfactory	Not figured into GPA	
U	Unsatisfactory	Not figured into GPA	
I	Incomplete	Not figured into GPA	
IP	In Progress (grade deferred)	Not figured into GPA	
W	Withdrawal	Withdrawal before completion of 80% of semester	
WP	Withdrawal	Withdrawal after completion of 80% of semester issued only under special circumstances and with approval of the department chair/director	

The assignment points are as follows:

Discussion Board posts with responses (9 at 20 points each)	180 points
Assignments	
Case Analysis Paper – DMV	75 points
Demand Forecast Paper	25 points
Case Analysis Paper – Supply Chain	75 points
SOP Paper	25 points
Research Paper – Optimizing Operational Yield	50 points
Case Analysis Paper – Malawi Public Sector	75 points
Case Analysis Paper – Steelcase	75 points
Materials Management Paper	25 points
Case Analysis Paper – Operational Problems Engaging Patients	75 points
Operational Excellence Paper	25 points
Case Analysis Paper – The Impact of Operational Diversity	75 points
Operational Analytics Paper	25 points
Final: Comprehensive Case Analysis Paper	200 Points
Total Class Points	**1005**

OTHER POLICIES:
Please see the Instructor and Student Interaction Expectations within the Course Information section of the Moodle course for additional information.

ACADEMIC MISCONDUCT
The University prohibits all forms of academic misconduct. Academic misconduct refers to dishonesty in examinations (cheating), presenting the ideas or the writing of someone else as one's own (plagiarism) or knowingly furnishing false information to the University by forgery, alteration, or misuse of University documents, records, or identification. Academic dishonesty includes, but is not limited to, the following examples: permitting another student to plagiarize or cheat from one's own work, submitting an academic exercise (written work, printing, design, computer program) that has been prepared totally or in part by another, acquiring improper knowledge of the contents of an exam, using unauthorized material during an exam, submitting the same paper in two different courses without knowledge and consent of professors, or submitting a forged grade change slip or computer tampering. The faculty member has the authority to grant a failing grade in cases of academic misconduct as well as referring the case to Student Life.

PLAGIARISM
You are expected to submit your own work and to identify any portion of work that has been borrowed from others in any form. An ignorant act of plagiarism on final versions and minor projects, such as attributing or citing inadequately, will be considered a failure to master an essential course skill and will result in an F for that assignment. A deliberate act of plagiarism, such as having someone else do your work, or submitting someone else's work as your own (e.g., from the Internet, fraternity file, etc., including homework and in-class exercises), will at least result in an F for that assignment and could result in an F for the course.

ELECTRONIC DEVICES:
Use of electronic devices including smart watches and cell phones is prohibited during exams or quizzes unless directly allowed by the instructor.

TRINEONLINE

Course Mapping

BAN 5003: Operations Analytics

Course Description: This course is an introduction to the principles and techniques of operations analytics. Operations and supply management is defined as the design, operation, and improvement of the systems that create and deliver the organization's primary products and services. In this course, students will learn models and techniques that work with large data sources. This course will demonstrate the application of operations models that are currently being used in industry incorporating big data. Topics considered include process analysis, workforce issues, materials management, quality and productivity, technology, and strategic planning, together with relevant analytical techniques.

Learning Outcomes:

1. Create demand forecasts using relevant and current industry operational data.
2. Construct process improvement models that optimize operational yield.

Week and Title	Weekly Learning Outcome Alignment	Learning Activities and Materials (LO alignment)	Assessments (LO alignment)
Week One: Introduction to Operations Analytics	Analyze operational management situations and demonstrate an ability to make ethical management decisions. (LO3) Use case studies to solve and make recommendations to supply chain, logistical, and operational problems. (LO4)	Read: • Getting started with Operations Analytics (LO4) • Operational Analytics, HTC global services (LO3) • Why Business Analysts Are Essential to Your Operations Team (LO5)	Participate: • Discussion board post (LO3) • Peer Responses (LO3) Assignment: • Case analysis – DMV (LO4, LO5)

3. Analyze operational management situations and demonstrate an ability to make ethical management decisions.
4. Use case studies to solve and make recommendations to supply chain, logistical, and operational problems.
5. Demonstrate effective analytical and communication skills.

	Demonstrate effective analytical and communication skills. (LO5)	Watch: Everyone is an Analyst: Opportunities in Operational Analytics (LO3)	
Week Two: Modeling and data techniques for operations	Create demand forecasts using relevant and current industry operational data. (LO1) Construct process improvement models that optimize operational yield. (LO2) Analyze operational management situations and demonstrate an ability to make ethical management decisions. (LO3) Demonstrate effective analytical and communication skills. (LO5)	Read: • Market Response models (LO2, LO3) Watch: • Best Practices for Demand Forecasting and Inventory Planning – A Practical Demonstration (LO1, (LO5)	Participate: • Discussion board post (LO1, LO3) • Peer Responses (LO1, LO3) Assignment: • Demand Forecast paper (LO1, LO2, LO5)

Week Three: Operation systems and models	Create demand forecasts using relevant and current industry operational data. (LO1) Analyze operational management situations and demonstrate an ability to make ethical management decisions. (LO3) Use case studies to solve and make recommendations to supply chain, logistical, and operational problems. (LO4) Demonstrate effective analytical and communication skills. (LO5)	Read: • The Implementation and Use of Benchmarking in Local Government: A Case Study of the Translation of a Management Accounting Innovation (LO1, LO4) Watch: • What is a Management Operating System? (LO4) • Writing Effective Standard Operating Procedures (LO3, LO5)	Participate: • Discussion board post (LO1, LO3) • Peer Responses (LO1, LO3) Assignment: • Case analysis on supply chain (LO4) • SOP paper (LO5)
Week Four: Technology and strategic planning	Create demand forecasts using relevant and current industry operational data. LO1)	Read: • Research in Operations Management and Information Systems Interface (LO3)	Participate: • Discussion board post (LO1, LO3) • Peer Responses (LO1, LO3)

	Construct process improvement models that optimize operational yield. (LO2) Analyze operational management situations and demonstrate an ability to make ethical management decisions. (LO3) Use case studies to solve and make recommendations to supply chain, logistical, and operational problems. (LO4)	• Strategic Planning in the Malawi Public Sector: Potential Tool for Progress or Regression? (LO1, LO2, LO4) • The Difference Between Operations and Strategy (LO3, LO4) • Overview of the Strategic Planning Process (LO1) Watch:	Assignment: • Research paper optimizing operational yield (LO1, LO2, LO3) • Case analysis Malawi public sector (LO4)

Week Five: Process analysis, materials management, and supply chain	Create demand forecasts using relevant and current industry operational data. LO1) Construct process improvement models that optimize operational yield. (LO2) Analyze operational management situations and demonstrate an ability to make ethical management decisions. (LO3) Use case studies to solve and make recommendations to supply chain, logistical, and operational problems. (LO4)	Read: • Supply Chain Integrity: A Key to Sustainable Supply Chain Management (LO3) • End-To-End Supply Chain Strategies: A Parametric Study of the Apparel Industry (LO4) Watch: • Demand Forecasting in • What is Supply Chain Management? (LO4) • Steelcase Supply Chain - case study (LO4) • Materials Management / Process and Supply Chain Analytics (LO2, LO3) Supply Chain (LO1)	Participate: • Discussion board post (LO1, LO3) • Peer Responses (LO1, LO3) Assignment: • Case Analysis Steelcase (LO3, LO4) • Materials management paper (LO2)
Week Six: Workforce issues: quality and productivity	Create demand forecasts using relevant and current industry operational data. LO1)	Read: • Engaging patients to improve quality of care: a systematic review (LO1, LO4)	Participate: • Discussion board post (LO1, LO3) • Peer Responses (LO1, LO3)

	Analyze operational management situations and demonstrate an ability to make ethical management decisions. (LO3) Use case studies to solve and make recommendations to supply chain, logistical, and operational problems. (LO4) Demonstrate effective analytical and communication skills. (LO5)	• An examination of the relationships between leadership style, quality, and employee satisfaction in R&D versus administrative environments (LO3, LO4) • Training and performance of a diverse workforce (LO3, LO4) Watch: • How to Achieve Operational Excellence in Manufacturing (LO4. LO5) • Quality and Performance in Management (LO4)	Assignment: • Case analysis operational problems engaging patients (LO4) • Operational excellence paper (LO1, LO3, LO5)
Week Seven: Ethics in operations decision making and operational problems	Create demand forecasts using relevant and current industry operational data. (LO1) Analyze operational management situations and demonstrate an ability to make ethical management decisions. (LO3) Use case studies to solve and make recommendations to supply chain, logistical, and operational problems. (LO4) Demonstrate effective analytical and communication skills. (LO5)	Read: • Assessing Managers' Ethical Decision-making: An Objective Measure of Managerial Moral Judgment (LO3) • The Impact of Operational Diversity on Corporate Philanthropy: An Empirical Study of U.S. Companies (LO3) • Marie Wallace: The ethics of collecting data (LO1, LO5) • Operational Analytics in Practice (LO4, LO5)	Participate: • Discussion board post (LO1, LO3) • Peer Responses (LO1, LO3) Assignment: • Case analysis the impact of operational diversity (LO4) • Operational analytics paper (LO3, LO5)

		Watch:	
Week Eight: Demonstration of your operations analytic skills	Create demand forecasts using relevant and current industry operational data. (LO1) Construct process improvement models that optimize operational yield. (LO2)	Read: Case Study (LO1, LO2, LO3, LO4, LO5) Watch: How to analyze a case study (LO1, LO2, LO3, LO4, LO5)	Participate: • Discussion board post (LO1, LO3) • Peer Responses (LO1, LO3) Assignment:

	Analyze operational management situations and demonstrate an ability to make ethical management decisions. (LO3) Use case studies to solve and make recommendations to supply chain, logistical, and operational problems. (LO4) Demonstrate effective analytical and communication skills. (LO5)		Final case analysis (LO1, LO2, LO3, LO4, LO5)