



Course Specifications

Course Title:	Operations Research
Course Code:	16011725
Program:	Business Administration
Department:	Business Administration
College:	Business Administration
Institution:	Albaha University

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A. Course Identification

1. Credit hours:
2. Course type
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered: 1st level / 4th year
4. Pre-requisites for this course (if any): Quantitative analysis
5. Co-requisites for this course (if any): None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	√	80 %
2	Blended		
3	E-learning	√	20 %
4	Correspondence		
5	Other		

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	Lecture	45
2	Laboratory/Studio	
3	Tutorial	
4	Others (specify)	
	Total	45
Other Learning Hours*		
1	Study	45
2	Assignments	45
3	Library	30
4	Projects/Research Essays/Theses	20
5	Others (specify)	
	Total	140

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

In this course, we will discuss many different topics in operation research for solving the administrative problems and supporting decision making by using linear programming, Transportation, Assignment, Queuing theory and Network (CPM/PERT) techniques.

2. Course Main Objective

This module aims to introduce students to use quantities methods and techniques for effective decisions-making; model formulation and applications that are used in solving business decision problems.

3. Course Learning Outcomes

CLOs		Aligned PLOs
K	Knowledge:	
1.1	Define models and principles of operation research.	K.1
1.2	Describe the tools of operation research models.	K.2
1.3	Recognize the scope of operation research models used in decision making.	K.3
S	Skills :	
2.1	Apply operation research tools for effective practices of the contemporary business undertakings.	S.1
2.2	Compare the different operation research models, methods and tools in decision making process.	S.2
2.3	Utilize appropriate information and numerical techniques in solving optimization problems in businesses.	S.4
C	Competence:	
3.1	Exhibit effective ability to work in groups & individually.	C.1
3.2	Develop capabilities of self-development.	C.3

C. Course Content

No	List of Topics	Contact Hours
1	Introduction About O R	3
2	linear programming	12
3	Transportation Method	6
4	Assignment Method	3
5	Network analysis	9
6	Queuing Theory	6
7	Applications on O.R. software	6
Total		45

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
K	Knowledge		
K.1	Define models and principles of operation research.	<ul style="list-style-type: none"> ▪ Lecture, ▪ Support readings, ▪ Group discussions, 	<ul style="list-style-type: none"> ▪ Quizzes ▪ Assignments ▪ Exam
K.2	Describe the tools of operation research models.	<ul style="list-style-type: none"> ▪ Lecture ▪ Practical training, ▪ Discussions 	<ul style="list-style-type: none"> ▪ Quizzes ▪ Assignment ▪ Presentation ▪ Exam
K.3	Recognize the scope of operation research models used in decision making.	<ul style="list-style-type: none"> ▪ Lecture ▪ Illustrations ▪ Discussions 	<ul style="list-style-type: none"> ▪ Quizzes ▪ Homework ▪ Assignment ▪ Exam
S	Skills		
2.1	Apply operation research tools for effective practices of the contemporary business undertakings.	<ul style="list-style-type: none"> ▪ Discussions. ▪ Self-learning ▪ Problem solving 	<ul style="list-style-type: none"> ▪ Quiz, ▪ Exams ▪ Presentations.
2.2	Compare the different operation research models, methods and tools in decision making process.	<ul style="list-style-type: none"> ▪ Discussions. ▪ Self-learning ▪ Problem solving 	<ul style="list-style-type: none"> ▪ Quiz, ▪ Exams ▪ Presentations
2.3	Utilize appropriate information and numerical techniques in solving optimization problems in businesses.	<ul style="list-style-type: none"> ▪ Discussions. ▪ Self-learning ▪ Problem solving 	<ul style="list-style-type: none"> ▪ Quiz, ▪ Exams ▪ Presentations
C	Competence		
3.1	Exhibit effective ability to work in groups & individually.	<ul style="list-style-type: none"> ▪ Cooperative (group) learning 	<ul style="list-style-type: none"> ▪ Presentation ▪ Group Assignment
3.2	Develop capabilities of self-development.	<ul style="list-style-type: none"> ▪ Self-learning 	<ul style="list-style-type: none"> ▪ Homework ▪ Assignment

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Discussion	Weekly	10%
3	Midterm exam	7	30%
5	Assignment	Weekly	10%
6	Final exam	17	50%

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week). Instructor will be available for student consultation and academic advice on weekdays during their office hours. Additional assistance by appointment only. (9 hours per week).

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	Taha, Hamdy, Operations Research, 9th edition, (USA: Pearson Education, inc., publishing as prentice Hall), 2011.
Essential References Materials	Pronson, Ricard, Operations Research: Shaum's outlines, 2nd edition. • Linear Programming and Network Flows, Bazaraa & Gravis Sherali.
Electronic Materials	Any textbook that contains examples of the operation research models Websites on the internet that are relevant to the topics of the course Examples: http://fisher.osu.edu/~croxton_4/tutorial/ http://people.hofstra.edu/Stefan_Waner/realworld/LPGrapher/lpg.htm
Other Learning Materials	WIN-QSB • STORM software. • TORA software. • Excel software

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	<p><u>Class rooms are well equipped with:</u></p> <ul style="list-style-type: none"> -Air conditioned with at least 20 adequate seats. -Interactive/smart Board. -Up-to-date projector. <p><u>An Auditorium is well equipped with:</u></p> <ul style="list-style-type: none"> -Air conditioned with at least 100 adequate seats. -Interactive/smart Board /Up-to-date projector.
Technology Resources (AV, data show, Smart Board, software, etc.)	<ul style="list-style-type: none"> -Personal computer with necessary up-to-date software. -Interactive Board. -Laptop
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	<ol style="list-style-type: none"> 1. Wall Boards (are essentially needed.). 2. Internet inside the classroom (missed.). 3. Library: Up to date scientific books, in the library. Wi-Fi and internet connections are available inside the teaching staff rooms, and the seminar room.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Strategies for Obtaining Student Feedback on Effectiveness of Teaching	<ul style="list-style-type: none"> - Instructor - HOD 	<ul style="list-style-type: none"> - Course Evaluation Surveys - Students-Faculty Meetings - Students Assessment of Faculty Members Survey
Other Strategies for Evaluation of Teaching by the Instructor or by the Department	<ul style="list-style-type: none"> - Instructor - HOD 	<ul style="list-style-type: none"> - Discussions between staff members teaching the course - Internal review of the course at a departmental level - External reviewers


Evaluation Areas/Issues	Evaluators	Evaluation Methods
Processes for Improvement of Teaching	<ul style="list-style-type: none"> - Instructor - HOD 	<ul style="list-style-type: none"> - Course evaluation reports - Student assessment of faculty reports - Faculty's on-going training through self/department/faculty and/or University initiated workshops and development programs
Processes for Verifying Standards of Student Achievement Conducting and attending workshops given by experts on the teaching and learning methodologies.	<ul style="list-style-type: none"> - Instructor - HOD 	Marking of assignments and exam submissions are revised by independent teaching staff from within the department and/or other departments within the college
Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.	<ul style="list-style-type: none"> - Instructor - HOD 	<ul style="list-style-type: none"> - A course report is developed and reviewed periodically at the end of the semester. The report includes exam results, assignments results and surveys feedback from students, which will reflect course and teaching effectiveness. - In addition, an internal review at the end of the semester, conducted by teaching staff will help generate ideas and plans for the development of the course, teaching strategies and learning outcomes. - This is further reinforced through ongoing review of developments in the field conducted by the course instructor in addition to training and workshops provided to the course instructor.

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Program Coordinator	Dr. Abdella Kormie Dinga 
Program Chair	Dr. Saleh Abdullah Alghamdi
Council / Committee	Business Administration Department Board Meeting
Reference No.	2 nd Board Meeting 1441-1442
Date	24/12/2020