Kingdom of Saudi Arabia

Al Baha University

Faculty of Administrative & Financial Sciences

Business Administration

COURSE SPECIFICATION

Operations Research

16011705

2015

Course Specification

Institution:	Al-Baha University
College/Department:	Faculty of Administrative and Financial Sciences Management Information Systems Department

A. Course Identification and General Information

1. Course title and code:	Operations Research **16011705**
2. Credit hours:	**3**
3. Program(s) in which the course is offered:	Business Administration
4. Name of faculty member responsible for the course:	Dr. Elrayah Mohammed
5. Level/year at which this course is offered:	7^{th} level/4^{th} Year
6. Pre-requisites for this course (if any):	Quantitative Analysis
7. Co-requisites for this course (if any):	
8. Location if not on main campus:	

B. Objectives

1. Summary of the main learning outcomes for students enrolled in the course.

- **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.
- Understanding "linear programming , Transportation, Assignment, Decision theory, Queuing theory and Network (CPM/PERT) techniques. Then will be used to solve problems facing business managers in decision environments.

2. Briefly describe any plans for developing and improving the course that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field)

- A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, demonstrations, projects and presentations, speeches, debates, and panels, conferencing, and performance. Methodology will be selected to best meet student needs.
- Giving students some materials supplementing the textbook.

C. Course Description **(Note: General description in the form to be used for the Bulletin or Handbook should be attached)**

1. Topics to be Covered

Topic	No of Weeks	Contact hours
Introduction About O R	1	3
linear programming (Dual & Sensitivity Analysis)	3	9
Transportation Method	3	9
Network (CPM/PERT)	3	9
Assignment Method	1	3
Decision theory	2	6
Queuing theory	2	6

2. Course components (total contact hours per semester):			
Lecture: 45	**Tutorial:** Included	**Practical/Fieldwork/ Internship:**	**Other:**

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)

4-6 hours per semester.

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- **A brief summary of the knowledge or skill the course is intended to develop;**
- **A description of the teaching strategies to be used in the course to develop that knowledge or skill;**
- **The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.**

a. Knowledge

(i) Description of the knowledge to be acquired

Be able to understand the characteristics of different types of decision-making environments and the appropriate decision making approaches and tools to be used in each type.

(ii) Teaching strategies to be used to develop that knowledge

- Lectures.
- Supplemental notes to clarify some important topics.
- Homework assignments.
- Practical Hours with teacher assistant.
- Advising students to use computer softwares applicable to the course content.
- Office hours to clarify anything related to the course.

(iii) Methods of assessment of knowledge acquired

Allocation of Marks

Assessment Instruments Mark

- Midterm exam 30%
- Reports, Assignments, Quizzes, Home works 20%
- Final Exam 50%

Total 100%

b. Cognitive Skills

(i) Cognitive skills to be developed

Be able to build and solve linear programming , Transportation, Assignment, Decision theory, Queuing theory and Network (CPM/PERT) techniques.

(ii) Teaching strategies to be used to develop these cognitive skills

The basic instructional method will consist of interactive lecture, class discussion, and hands-on learning through class participation. Lectures will provide the framework for directing independent student learning activity and skills development. As such, students will be presented with relevant information, tasks and source material in lectures that will enable self-directed learning.

(iii) Methods of assessment of students cognitive skills

- In class discussions with students.
- Mid terms and final exams.
- In class and homework assignments.

c. Interpersonal Skills and Responsibility

(i) Description of the interpersonal skills and capacity to carry responsibility to be developed

- The ability to work independently to accomplish assigned tasks.
- The ability to communicate and to discuss related topics of the course with instructor inside and outside class.
- Be able to design new simple models, like: CPM, MSPT to improve decision – making and develop critical thinking and objective analysis of decision problems.

(ii) Teaching strategies to be used to develop these skills and abilities

- Individual assignments.

- Solving problems individually during class hours, and then discussing solutions.
- Questions directed to all students during class hours, and then discussing answers.

(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility

- Evaluating students' individual works by homework's and exams.
- Observing encouragement of students to give answers and to discussion inside class hours.

d. Communication, Information Technology and Numerical Skills

(i) Description of the skills to be developed in this domain

- Acquaintance of using internet to get information related to the course.
- The ability to perform graphical draw, in two dimensional plane, a system of equations and inequalities.
- Acquaintance of using computer software related to the course by using TORA, WinQSB

(ii) Teaching strategies to be used to develop these skills

- Lecturing by the course instructor and the teacher assistant.
- Handouts of supplemental materials in addition to the textbook.
- Homework's and in class assignment.

(iii) Methods of assessment of students numerical and communication skills

- Direct questions to student during class hours.
- Homework's and in class assignments.
- Mid terms and final exams.

e. Psychomotor Skills (if applicable)

(i) Description of the psychomotor skills to be developed and the level of performance required

Not applicable

(ii) Teaching strategies to be used to develop these skills

Not applicable

(iii) Methods of assessment of students psychomotor skills

Not applicable

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Homework's	Weekly	10%
2	Assignments	Weekly	10%
3	Midterm exam	7	30%
4	Final exam	17	50%

D. Student Support

1. Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

- Supervision of activities.
- Office hours 9 hrs/ week.

E. Learning Resources

1. Required Text(s)

- Taha, Hamdy, Operations Research, 9th edition, (USA: Pearson Education, inc., publishing as prenntce Hall), 2011.

2. Essential References

- Pronson, Ricard, Operations Research: Shaum's outlines, 2nd edition.
- Linear Programming and Network Flows, Bazaraa & Gravis Sherali.

3. Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

Any textbook that contains examples of the operation research models**.**

4. .Electronic Materials, Web Sites etc

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.html

5- Other learning material such as computer-based programs/CD, professional standards/regulations

- STORM software.
- TORA software.
- Excel software

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

1. **Accommodation (Lecture rooms, laboratories, etc.)**
   - Lecture room with at least 35 seats.
   - Projector.
2. **Computing resources**
   - Lecture room with at least 35 seats.
   - Projector.
3. **Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)**
   - Smart board.
   - White board.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

- Evaluations of performance and teaching effectiveness will be administered to the students at the end of the course. A questionnaire will be used in order to determine appropriateness of communication of course expectations (learning objectives), communication of course requirements (e.g., assessment), student perception of the quality of classroom teaching, adequacy of assessment feedback, and accessibility of learning resources and support.
- Course evaluation by student.
- Students- faculty meetings.

2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

- Discussions within the group of faculty teaching the course.

- Departmental internal review of the course.
- Outside review of the course.

3 Processes for Improvement of Teaching

- Providing computer labs containing up-to-date computers and softwares.
- Conducting and attending workshops given by experts on the teaching and learning methodologies.
- Periodical departmental and outside revisions of its methods of teaching.
- Monitoring of teaching activates by senior faculty members.

4 Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)

- Reviewing exam questions and a sample of corrected papers from a departmental committee and outside reviewers.

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- The course material and learning outcomes are periodically reviewed internally and externally.
- Comparing course content and teaching methodologies with similar courses offered at other departments.
- Studying the outcomes of the students' evaluation of the course and using these outcomes to improve teaching the course.

The required text covers a percentage of: 100% of the course, (chapters: 1 , 3&4, 5, 6, 15, 18)

Faculty In charge: Dr. Elrayah Mohammed

The head of the department: Dr. Mohammed Makni

The Vice Dean of Academic Affairs: Dr. Najeeb Al Mater

Dean: Dr. Mohammed Al Zehrani