اعتماد
NCAAA
T4
2020

Course Specifications

Course Title:	**Research Project**
Course Code:	**2024201-3**
Program:	**Bachelor in Mathematics.**
Department:	**Department of Mathematics and Statistics**
College:	**Faculty of Science**
Institution:	**Taif University**

Table of Contents

A. Course Identification

1. Credit hours: 3	

2. Course type

a.	University ☐	College ☐	Department ☑			Others ☐	
b.		Required ☑		Elective ☐			

3. Level/year at which this course is offered: 12th Level, 4th year

4. Pre-requisites for this course (if any)**:**

None

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**	**3Hr /Week**	**100 %**
2	**Blended**		
3	**E-learning**		
4	**Correspondence**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	**30**
2	**Laboratory/Studio**	
3	**Tutorial**	
4	**Others** (specify)	
	Total	**30**

B. Course Objectives and Learning Outcomes

1. Course Description

The course is based on an individual research work including literature studies according to the study plan. An individual study plan will be commonly written by the supervisor and the student which serves as a project description. At the end of the practical work, the students will write a research report. A research article will be written and evaluated by staff members in concern. A poster based on the research results will be designed, presented and discussed. The article could be included on the list of regional conferences on the level of Saudi Universities.

2. Course Main Objective

The student will be taught as follows:

1- Enable researchers in writing various research reports, thesis, dissertation, research papers, articles, essays;

2- To equip researchers with research methodology essential for pursuing research

degrees (Doctor of Philosophy (Ph.D.), Masters in Philosophy) and research in undergraduate and postgraduate courses. Summarize the results in a research report and present the results of the project.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge:**	
1.1	<u>Recognize</u> the common concepts to make a survey about the point of research project.	K2
1.2	Describe the structures, components and steps of project.	K2
2	**Skills:**	
2.1	Summarize appropriate mathematical and statistical theories, models and tools in solving various problems.	S1
2.2	Use various electronic resources for data analysis, scientific thinking and problem solving	S3
2.3	Explain the characteristics of his methodology for solving his problem.	S5
3	**Values:**	
3.1	Work effectively within groups and independently.	V1
3.2	Show the responsibility for their own learning and continuing personal and professional development.	V2
3.3	Articulate ethical behaviour associated with institutional Guidelines in classroom, and in Lab.	**V3**

C. Course Content

No	List of Topics	Contact Hours
1	Research design introduction	3
2	Prepare a research project proposal	3
3	Previous research 1-What research has already been done in this area? What deficiencies or gaps need addressing?	3
4	2- What other research in related areas has been done that could inform research on the proposed problem?	3
5	Theoretical framework and hypotheses	3
6	Computational techniques and tools in research (First Part)	3
7	Computational techniques and tools in research (Second Part)	3
8	Analyze the results	3
9	write a research report	3
10	Presentation and evaluation of the project	3
Total		30

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

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge:**		

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.1	<u>Recognize</u> the common concepts to make a survey about the point of research project.	• Lectures • Group discussions	• Quizzes • Assignments
1.2	Describe the structures, components and steps of project.	• Lectures • Group discussions	• Exams • Assignments
2.0	**Skills:**		
2.1	Summarize appropriate mathematical and statistical theories, models and tools in solving various problems.	• Interactive classes • Group discussions	• Quizzes • Assignments
2.2	Use various electronic resources for data analysis, scientific thinking and problem solving	• Lectures • Group discussions	• Exams • Quizzes
2.3	Explain the characteristics of his methodology for solving his problem.	• Lectures • Self-learning through the website	• Exams • Quizzes • Assignments
3.0	**Values**		
3.1	Articulate ethical behavior associated with institutional Guidelines in classroom and in Lab	• Lectures	Assignments

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	**Reports**	**Continues**	**20 %**
2	**Activities**	**Continues**	**70 %**
3	**Final Discussion (examination committee)**	**11th**	**10%**
4			

*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:

6 hours per week (as defined in the teaching schedule of the faculty member) for academic advice and consultations.
Teaching staff is also available using Blackboard web site and Taif University "Edugate" System.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	1. **Martha Davis, Kaaron J. Davis, Marion M. Dunagan "Scientific Papers and Presentations", (3rd ed.) 2012 Elsevier Inc.** 2. **J. Creswell Research Design: Qualitative, Quantitative, and Mixed Methods Approaches,**

	Publisher: SAGE Publications, Inc; Fourth Edition (March 14, 2013)
Essential References Materials	https://www.mathworks.com/support/learn-with-matlab-tutorials.html
Electronic Materials	https://www.mathworks.com/matlabcentral/answers/166592-best-book-for-beginners?requestedDomain=www.mathworks.com
Other Learning Materials	**S. J. Chapman, MATLAB® Programming for Engineers, Fourth Edition, THOMSON, 2008.**

3. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	**Lecture halls, containing white boards, and electronic monitors - The seats fit the number of students - Laboratories equipped with suitable numbers of computers**
Technology Resources (AV, data show, Smart Board, software, etc.)	**Difference Mathematical Softwares**
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	**Wi-Fi internet connections**

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Students	Indirect
Quality of learning resources	Peer Reviewer Students	Direct Indirect
Extent of achieving the course learning outcomes	Peer Reviewer Students	Direct Indirect

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

Council / Committee	Department of Mathematics and Statistics
Reference No.	11
Date	12-7-1443 H

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