



Course Specification

— (Bachelor)

Course Title: **Research Project**

Course Code: **2024201-3**

Program: **Bachelor in Mathematics**

Department: **Mathematics and Statistics Department**

College: **Faculty of Sciences**

Institution: **Taif University**

Version: **1**

Last Revision Date: **20/05/2023**



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A. General information about the course:

1. Course Identification

1. Credit hours: 3(3,0,0)

2. Course type

A. University College Department Track Others

B. Required Elective

3. Level/year at which this course is offered: **Level 12 / Fourth Year**

4. Course general 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.

5. Pre-requirements for this course (if any):

None

6. Co-requirements for this course (if any):

None

7. Course Main Objective(s):

The student will be taught as follows:

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

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.



2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	3Hr /Week	100%
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> Traditional classroom E-learning 		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	45
2.	Laboratory/Studio	NA
3.	Field	NA
4.	Tutorial	NA
5.	Others (specify)	NA
Total		45

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Recognize the common concepts to make a survey about the point of research project	K2	<ul style="list-style-type: none"> Lectures Group discussions 	<ul style="list-style-type: none"> Discussions Reports
1.2	Describe the structures, components and steps of project.	K2	<ul style="list-style-type: none"> Lectures Group discussions 	<ul style="list-style-type: none"> Discussions Reports
2.0	Skills			
2.1	Summarize appropriate mathematical and statistical theories, models and tools in solving various problems.	S1	<ul style="list-style-type: none"> Lectures Interactive classes 	<ul style="list-style-type: none"> Discussions Reports
2.2	Use various electronic resources for data analysis,	S3	<ul style="list-style-type: none"> Lectures 	<ul style="list-style-type: none"> Discussions



Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	scientific thinking and problem solving		<ul style="list-style-type: none"> Group discussions 	<ul style="list-style-type: none"> Reports
2.3	Explain the characteristics of his methodology for solving his problem.	S5	<ul style="list-style-type: none"> Lectures Self-learning through the website 	<ul style="list-style-type: none"> Discussions Reports
3.0	Values, autonomy, and responsibility			
3.1	<u>Work</u> effectively within groups and independently.	V1	<ul style="list-style-type: none"> Projects. 	<ul style="list-style-type: none"> Through the oral presentation of the projects
3.2	Articulate ethical behavior associated with institutional Guidelines in classroom and in Lab	V2	<ul style="list-style-type: none"> Lectures 	<ul style="list-style-type: none"> Discussions Reports
3.3	Demonstrate act responsibility and ethically in conducting their work	V3	<ul style="list-style-type: none"> Lectures 	<ul style="list-style-type: none"> Discussions Reports

C. Course Content

No	List of Topics	Contact Hours
1.	Research design introduction	3
2.	Prepare a research project proposal	3
3.	Previous research What research has already been done in this area?	3
4.	What deficiencies or gaps need addressing?	3
5.	What other research in related areas has been done that could inform research on the proposed problem?	3
6.	Theoretical framework and hypotheses (First Part)	3
7.	Theoretical framework and hypotheses (Second Part)	3
8.	Computational techniques and tools in research (First Part)	3
9.	Computational techniques and tools in research (Second Part)	3
10.	Computational techniques and tools in research (Third Part)	3
11.	Analyze the results	6
12.	write a research report	6
13.	Presentation and evaluation of the project	3
Total		45



D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	<u>Activities</u>	Continuous Evaluation	70 %
2.	<u>Proposal</u>	By the end of the semester.	20 %
3.	<u>Final Discussion (examination committee)</u>	15 th	10%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	<ol style="list-style-type: none"> Martha Davis, Kaaron J. Davis, Marion M. Dunagan "Scientific Papers and Presentations", (3rd ed.) 2012 Elsevier Inc. J. Creswell Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, Publisher: SAGE Publications, Inc; Fourth Edition (March 14, 2013)
Supportive References	https://www.mathworks.com/support/learn-with-matlab-tutorials.html https://www.mathcad.com/en/blogs/programming-with-ptc-mathcad-prime
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.

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms, which can accommodate up to 50 students and equipped with e-podiums, and internet access.
Technology equipment (Projector, smart board, software)	Laptop, smart board, and projector.
Other equipment (Depending on the nature of the specialty)	Wi-Fi internet connections



F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect
Effectiveness of students assessment	Faculty, Program Leader	Direct
Quality of learning resources	Peer Reviewer, Students	Direct, Indirect
The extent to which CLOs have been achieved	Peer Reviewer, Students	Direct. Indirect
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Department Council
REFERENCE NO.	4
DATE	October 2023

