



Course Specifications

Course Title:	Graduation project
Course Code:	2034201-3
Program:	Bachelor in Physics
Department:	Physics Department
College:	College of Science
Institution:	Taif University

Table of Contents

A. Course Identification	3
6. Mode of Instruction (mark all that apply)	3
B. Course Objectives and Learning Outcomes	3
1. Course Description	3
2. Course Main Objective.....	3
3. Course Learning Outcomes	4
C. Course Content	4
D. Teaching and Assessment	5
1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods	5
2. Assessment Tasks for Students	5
E. Student Academic Counseling and Support	6
F. Learning Resources and Facilities	6
1. Learning Resources	6
2. Facilities Required.....	6
G. Course Quality Evaluation	6
H. Specification Approval Data	7

A. Course Identification

1. Credit hours: 3
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: 12 th Level / 4 th year
4. Pre-requisites for this course (if any): Research Skills in Physics 2034101-2
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	6	100%
2	Blended		
3	E-learning		
4	Distance learning		
5	Other		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	
2	Laboratory/Studio	60
3	Tutorial	
4	Others (specify)	
	Total	60

B. Course Objectives and Learning Outcomes

<p>1. Course Description</p> <p>The Graduation project may take a number of different forms. It might involve carrying out a small experimental investigation, involving the use of laboratory facilities, tabulate results, data analysis and underpinned by a review of previous work in the same theme. The project could be a computational programming work, consisting of a small numerical simulation of special physics phenomena. In this case the attention should focus on the computational technique and its effectiveness of describing the phenomena. The project could even consist on a detailed literature review in a particular subject which requires the use of library, databases and publications resources, but it would need to be critical and theoretical in its approach, and involve much more research than a long essay.</p>
<p>2. Course Main Objective</p> <p>This course aims to:</p> <ul style="list-style-type: none"> • Develop the students' research work experience supervised by a faculty member. • Develop the necessary skills of students to be an active physics science researcher. • Encourage students to develop bright ideas and proposals to serve the society in handling problems, especially in technology.

- Provide the possibility to expand students' knowledge in a specific area.
- Prepare students for effective writing and presentation skills.
- Help the students to practice different analytical techniques in physics, using modern instrumentation existing in research Labs.
- Train the students with opportunities of self-confidence to present and defend their work in front of experts and general audience.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	Identify the key issues and attempting different methods in dealing with general problems and scientific data	K5
1.2	Present information in a clear, concise and logical manner	K5
2	Skills :	
2.1	Apply appropriate analytical and approximation methods	S1
2.2	Analyze experimental data and relate the experimental results with theoretical expectations.	S3
2.3	Develop the skills of information and data extraction using textbooks and other available literature, searching databases.	S4
2.4	Use effectively the information sources and communications technologies, including library, E-library, internet, and databases.	S4
3	Values:	
3.1	Develop ability to think scientifically, critically and creatively individually or collaboratively.	V1
3.2	Act responsibly and be able to present written and/or oral reports on research topics.	V3

C. Course Content

No	List of Topics	Contact Hours
1	Introduction of graduation projects and scientific research.	6
2	- The process of development of research idea and topic. - Bibliographic and use of library, databases and publications resources. - Scientific ethics and citations of research resources. - How to write and organize a scientific proposal and report. -Suggestion some topics.	6
3	Choosing a topic and determining a project, describe it ,discuss the motivation and aims	6
4	Getting started to get necessary theoretical and experimental background appropriate for the project	6
5	Preparing and designing the essential requirements (experiment, software, programs, activities, literature review...) and manage the project progress.	6
6	Working on the project – collecting, comparing and tabulating the results and its analysis.	12
7	Writing the results and discuss it.	6
8	Writing and reviewing the report.	6

9	Introducing and submitting the final form of the report.	6
Total		60

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 and Understanding		
1.1	Identify the key issues and attempting different methods in dealing with general problems;	- Lectures - Group discussion	-Supervisor evaluation -Written final exam -Examining Jury
1.2	Present information in a clear, concise and logical manner	- Lectures - Group discussion - Homework reports	-Supervisor evaluation -Written final exam -Examining Jury
2.0	Skills		
2.1	Apply appropriate analytical and approximation methods	- Lectures - Group discussion - Homework reports	-Supervisor evaluation -Written final exam -Examining Jury
2.2	Analyze experimental data and relate the experimental results with theoretical expectations.	- Lectures - Laboratory practice. - Group discussion	-Supervisor evaluation -Examining Jury
2.3	Develop the skills of information and data extraction using textbooks and other available literature, searching databases.	- Lectures - Group discussion - Homework reports	-Supervisor evaluation -Written final exam -Examining Jury
2.4	Use effectively the information sources and communications technologies, including library, E-library, internet, and databases.	- Lectures - Laboratory practice. - Group discussion	-Supervisor evaluation -Examining Jury
3.0	Values		
3.1	Develop ability to think scientifically, critically and creatively individually or collaboratively.	- Lectures - Laboratory practice. - Group discussion	-Supervisor evaluation -Examining Jury
3.2	Act responsibly and be able to present written and/or oral reports on research topics.	- Lectures - Laboratory practice. - Group discussion	-Supervisor evaluation -Examining Jury

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Supervisors evaluations	10-11th	40%
2	Written final exam	11th	20%
3	Examining Jury	12th	40%

*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 :

Six office hours per week are offered by the instructor to aid the students and support them.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	Depends on the project
Essential References Materials	Depends on the project
Electronic Materials	Depends on the project
Other Learning Materials	Depends on the project

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	- Classrooms - Physics department laboratories. - Demonstration rooms (equipped with data show facility)
Technology Resources (AV, data show, Smart Board, software, etc.)	- PC or Laptop. - Data show. - Microsoft office software. - Origin, MATLAB and Mathematica programs.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Depends on the project

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Student Feedback on Effectiveness of Teaching	Students	Indirect
Student Feedback on Effectiveness of Teaching	Students	Indirect
Evaluation of Teaching	Pear reviewer Program coordinator Departmental council Faculty council	Indirect
Improvement of Teaching	Program coordinator	Direct

Evaluation Areas/Issues	Evaluators	Evaluation Methods
	Relevant committee	
Quality of learning resources	Students Instructor Faculty	Indirect
Extent of achievement of course learning outcomes,	Program coordinator Instructor	Direct
Course effectiveness and planning for improvement	Program coordinator Instructor	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	
Reference No.	
Date	