



Course Specification (Bachelor)

Course Title: research skills
Course Code: PHYS 490
Program: Bachelor
Department: Physics and Astronomy
College: College of Science
Institution: King Saud University
Version: 2
Last Revision Date: September, 13th, 2023







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A. General information about the course:

1. Course Identification

1. Credit hours: (0+0+2)						
2. Course type						
Α.	University	College	Depar	tment	Track	□Others
В.	Required			Electi	ve	
3. Level/year at which this course is offered: (7 th level / 4 th year)						
4. Course general Description:						

This course covers types of scientific research, ethics in research, how to establish a research topic, how to use scientific resources, e.g. databases and scientific journals – citation methods – training on some scientific programs and equipment which are available in department – methods of writing and reading scientific articles and reports – training on presentation and poster skills

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

None

6. Pre-requirements for this course (if any): Phys 400 (computational physics)

7. Course Main Objective(s):

The course aims to provide the students with essential skills for scientific research.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	0	0
2	E-learning	0	0





No	Mode of Instruction	Contact Hours	Percentage
3	Hybrid Traditional classroom E-learning 	0	0
4	Distance learning	30	100%

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1	Lectures	30
2	Laboratory/Studio	0
3	Field	0
4	Tutorial	0
5	Others (specify)	0
Total		30

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 unders	standing		
1.1	Recognize the difference between types of scientific research.	К1	Lecture	discussion
1.2	Define Scientific Research	К2	Lecture	discussion





Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
2.0	Skills			
2.1	Write a research proposal.	S1	Lecture	homework
2.2	Write scientific reports and prepare oral presentations and posters.	S2	Lecture	Exams, presentation and homework
2.3	Apply computer programs to solve physical problems	\$3	Lecture	homework
2.4	Analysis scientific data	S4	Lecture	homework
3.0	Values, autonomy, and	l responsibility		
3.1	Work as a team and acknowledge others' work.	V1		homework

C. Course Content

No	List of Topics	Chapter#	Section#	Contact Hours
1	The concept of research and its types, ethics in research	None	None	4
2	How to establish a research topic and hot wo use databases	None	None	3
3	Reading scientific paper and types of journals	None	None	5
4	The writing a research plan	None	None	4



5	Tips in academic writing and introduction to Latex	None	None	4
6	How to give an oral presentation and posters	None	None	4
7	scientific software (e.g Origin or python and linux) with data anlysis	None	None	6
	Total			30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1	Homework	Weekly	60%
4	Final exam	week 14	40%

*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	Based on the research field
Supportive References	None
Electronic Materials	Based on the research field





Other Learning Materials Based on the research field

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Students own computer or ipad
Technology equipment (projector, smart board, software)	None
Other equipment (depending on the nature of the specialty)	None

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students/per reviewer	direct/ indirect
Effectiveness of Students assessment	Faculty	direct
Quality of learning resources	Students	indirect
The extent to which CLOs have been achieved	Faculty	indirect
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify) Assessment Methods (Direct, Indirect)





G. Specification Approval

COUNCIL /COMMITTEE	Physics Department's council
REFERENCE NO.	6 th (1 st term/1446)
DATE	22/05/1446

