COURSE SPECIFICATIONS
(CS)

Research skills

PHYS 490

June 2018

Course Specifications

Institution:	**King Saud University**	Date: **2017**

College/Department :**Faculty of Science- Department of Physics and Astronomy**

A. Course Identification and General Information

1. Course title and code: : **Research skills, PHYS 490**

2. Credit hours: : **2 (0+0+4)**
3. Program(s) in which the course is offered. **BSc in Physics**
4. Name of faculty member responsible for the course: One of the faculty member

5. Level/year at which this course is offered**7th level** / 4th year

6. Pre-requisites for this course (if any) None
7. Co-requisites for this course (if any) PHYS400

8. Location if not on main campus Main campus in Diriyah- College of Science, Department of Physics & Astronomy

9. Mode of Instruction (mark all that apply)

a. traditional classroom	√	What percentage?	50%	
b. blended (traditional and online)	√	What percentage?	50%	
c. e-learning		What percentage?		
d. correspondence		What percentage?		
f. other		What percentage?		

Comments:
Computers Lab + Advanced Labs

B Objectives

1. What is the main purpose for this course?
The course aims to provide the students with essential skills for scientific research.
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)
To increase the lessons concerning the citation software and the use of databases using the university platform.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:
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 equipmentwhich are available in the College of Science- methods of writing and reading scientific articles and reports - training on presentation and poster skills

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
The concept of research and its types	1	2
How to establish a research topic	1	2
Ethics in research and its software	1	2
How to use the databases to search for information with applications	2	4
Citation and the used software	2	4
How to read scientific article	1	2

The essential rules for writing an article, report and research proposal		2	4
How to make a presentation and a poster, with discussion		3	6
Laboratory rotation (advanced labs)		2	4

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	-			60		60
Credit	-			30		30

3. Additional private study/learning hours expected for students per week.
The student needs at least 2-4 h a week to apply what he learnt.

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Recognize and Define the difference between types of scientific research.	lectures	Discussion + quizzes + exams
1.2	Define Scientific Research	lectures	Discussion + quizzes + exams

2.0	**Cognitive Skills**		
2.1	• Write a research proposal.	Via lectures and practical lessons	Assignments
2.2	• Write scientific reports and prepare oral presentations and posters.	Via lectures and practical lessons	Assignments
3.0	**Interpersonal Skills & Responsibility**		
3.1	• Work as a team	Joint homework	Discussion
3.2	• Choose and use the appropriate project plan.	Joint homework	Discussion
4.0	**Communication, Information Technology, Numerical**		
4.1	• Evaluate and interpret experimental results.	• Via presentation in front of his/her classmates • Practical sessions	Discussion
4.2	• Operate research instruments and evaluate the results	Practical sessions	Discussion
5.0	**Psychomotor**		
5.1	Not applicable		

	5. Schedule of Assessment Tasks for Students During the Semester		
	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Activities in class	Each week	40%
2	Present presentation and poster	10	20%
3	The report	14	40%

D. Student Academic Counseling and Support

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

- Via the office hour
- Academic advices and consultations

E Learning Resources

1. List Required Textbooks
- Based on the research field

2. List Essential References Materials (Journals, Reports, etc.)
* Based on the research field

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

* Based on the research field

4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
* Based on the research field

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

* Based on the research field

F. Facilities Required

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

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)
* Classrooms and demonstration room

2. Computing resources (AV, data show, Smart Board, software, etc.)

* Smart board and some software specially for citation and data analysis

3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

* Demos for advanced instruments

G   Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
* Students are required to provide feedback on the course.

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

3 Processes for Improvement of Teaching
* This course must be connected somehow to the graduate project

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)

- Annual evaluation by quality committee in the department.

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

- To evaluate the syllabus of this course every five years.

Name of Instructor: _____

Signature:_____Date Report Completed:_____

Name of Field Experience Teaching Staff _____

Program Coordinator:_____

Signature: _____   Date Received:_____