ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Practical Physics 2

Course Specifications (CS)

Course Specifications

Institution: University of Dammam Date: 15/10/2014
College/Department: College of Science / Physics Department

A. Course Identification and General Information

1. Course title and code: 408N
2. Credit hours: 2
3. Program(s) in which the course is offered: Physics program for Bachelor degree
4. Name of faculty member responsible for the course:
   A specific team from the Physics Department
5. Level/year at which this course is offered: Level 7 (4th year – First Semester)
6. Pre-requisites for this course (if any): Practical Physics 1
7. Co-requisites for this course (if any): None
8. Location if not on main campus: Physics department/College of Science
9. Mode of Instruction (mark all that apply)

a. Traditional classroom	Yes	What percentage?	
80 b. Blended (traditional and online)	Yes	What percentage?	
20 c. E-learning	No		
d. Correspondence			
No			
f. Other			
No			

B Objectives

1. What is the main purpose for this course?

The objective of this course is to develop the students' research skills and integrate this skill with practical output. This experimental course depends on the past taken courses in nuclear and solid state physics; thus it integrates the theoretical aspects with the practical work.

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)

1. PowerPoint presentations.
2. Team work.
3. Self-learning using approved references.
4. Documentary videos on the internet.
5. Blackboard

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

Course Description:

In the practical physics 2 course we will depend on the gained skills from nuclear physics as well as solid state physics starting from understanding theoretical basics passing through analyzing theoretical perspectives and integrating interrelated issues

There will be also some new concepts which may not be familiar to students will be developed gradually.

1. Topics to be Covered

	1. Topics to be Covered			
	List of Topics	No. of Weeks	Contact	
	Nuclear Experiments:			
1a	• Operating voltage of Geiger Muller counter and dead time determinations	1	4	
2a	• Statistical analysis of nuclear random disintegration	1	4	
3a	• Gamma spectral analysis	1	4	
4a	• Electron spin resonance • Inverse square law	1	4	

5a	• Hall effect	1	4	
6a	• Light depended resistor (LDR)	1	4	
7a	• Magnetic susceptibly	1	4	
8a	• Rutherford scattering	1	4	

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

	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	-	-	40			40
Credit	-	-	20			20

3. Additional private study/learning hours expected for students per week.

3 hr /week

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	Course Teaching	Course Assessment
1.0	**Knowledge**		
1.1	• Recognize the components and operation of different detectors	• PowerPoint presentation • Self-learning • Open discussion	• Oral questions • Practical sheet • Final examination
1.2	• Recognize and evaluate the statistics concern the stochastic process of radioactive decay	• PowerPoint presentation • Self-learning • Open discussion	• Oral questions • Practical sheet • Final examination

1.3	Evaluate the	Po	• Oral
1	Discu	O	• Pr • Fin
1	Ver	•	• O • Pr

	O	• Fin
Det den gap	•	• O • Pr • Fi
Eva on	•	• O • Pr • Fi
Eva	•	• O • Pr

		• O	• Fi	the scattering angle
Interpersonal Skills Responsibility				
	• Det res and vali	•	• O • Pr • Fi n	
2.0 Cognitive				
2.1	• Me asu re the	• P o w e r •	• O ra l	
2.2	• Co mp are bet wee	• S • el f- le er	• O ra l	
2.3	• Me asu re	• S • el f-	• O ra	
2	• An me asu	• P pr es	• M	

		3.0	• Self-learning	examination
3.1	• Self Confidence.		• Research strategies	• Thesis
3.2	• Responsibility as member of a teamwork.			• Oral presentation
3.3	• Accept criticism			
3.4	• Time management skills.			
4.0	**Communication, Information Technology, Numerical**			

4.1	• Using keywords to facilitate navigation through internet	• Research strategies • Team work • Online discussion	• Thesis • Oral presentation
4.2	• Communicate with others		
4.3	• Integrate Knowledge within teamwork (Brain storming)		
5.0	**Psychomotor**		
5.1			

5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top)

Course LOs #	**Program Learning Outcomes (Use Program LO Code #s provided in the Program**																	
	1.1	**1.2**	**1.3**	**2.1**	**2.2**	**2.3**	**3.1**	**3.2**	**3.3**	**3.4**	**4.1**	**4.2**	**4.3**	**4.4**				
1																		
2																		
3																		
4																		
5																		

6. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination,	Week Due	Proportion of Total
1	First part examination	Fifth week	40 %
6	Research work and presentation	During semester	10 %
7	Second part examination	End of semester	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)

- Academic working days: Sunday through Thursday.
- Online Consultancy: Open time through Blackboard and email.

E Learning Resources

1. List Required Textbooks
- LD Didactic GmbH . Leyboldstrasse 1 . D-50354 Huerth / Germany

2. List Essential References Materials (Journals, Reports, etc.)

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)
- University of Dammam electronic library
- Central library for girls

4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
- http://www.tap.iop.org/atoms/rutherford/index.html
- http://www.mhhe.com/physsci/chemistry/essentialchemistry/flash/ruther14.swf
- http://web.mit.edu/8.13/www/JLExperiments/JLExp15.pdf
- file:///C:/Users/Welcome/Downloads/1P8_0420.pdf
- http://www.brighton-webs.co.uk/electronics/light_dependent_resistor.aspx
- http://physicsnet.co.uk/a-level-physics-as-a2/current-electricity/current-voltage-characteristics/

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

1- PowerPoint
2- Adobe Reader
3- Adobe Flash

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.)

- 2 Laboratory room suitable for 25 students (each)

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

- Data show
- Real player
- Adobe reader
- Adobe flash
- MS office

3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)
- Geiger Muller counter
- Scintillation detector

- Electron spin resonance measuring device

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching 1- Results of examination and their statistical analysis. 2- Open discussion during laboratory time. 3- Questionnaire provided during the semester, evaluating course
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department 1- Self-evaluation. 2- Peer review through course descriptions provided on internet.
3 Processes for Improvement of Teaching 1- Improvements based on statistical analysis. 2- Attending workshops provided for academic improvements.
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) 1- Examination reviewing with staff at the same department. 2- Check marking by teaching staff within the same department
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. 1- Review and make a comparative study with equivalent courses provided internationally that fulfill the course and the program objectives and aims. 2- Reviewing results of reports and evaluations with outside reviewers.