

**Kingdom of Saudi Arabia**

**The National Commission for Academic Accreditation & Assessment**

**Course Specifications  
(CS)  
Course  
Specifications**

Institution: **Al Dammam**

Date: 20-10-2014

College/Department : **College of Science, Departement of Mathematics**

A. Course Identification and General Information

1. Course title and code: <b>Classical Mechanics 1 – Phys 301N</b>
2. Credit hours: <b>3 hours</b>
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) <b>A course is an important component of several programs</b>
4. Name of faculty member responsible for the course <b>A specific team from the Physics Department</b>
5. Level/year at which this course is offered: : <b>Second Semester – 1435-1436</b>
6. Pre-requisites for this course (if any): <b>Phys-301</b>
7. Co-requisites for this course (if any)
8. Location if not on main campus

9. Mode of Instruction (mark all that apply)

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

Comments:

B Objectives

1. What is the main purpose for this course? **Solving Mathematical physics problems**

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)

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

Course Description:

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact hours
1-Vector analysis (differentiation and integration)	3	9
2-Dynamics of particles.	2	6
3-Plane constrained motion of particles	2	6
4-Motion of bodies with variable masses	2	6
5-Rotating coordinate system	2	6
6-Moments and products of inertia	2	6
7-Motion of Rigid Body.	2	6

2. Course components (total contact hours and credits per semester): <b>42 hours</b>						
	Lecture	Tutorial	Laboratory or Studio	Practical	Other	Total

Contact Hours	45	--	--	--	---	45
Credit						

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

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

T  
e  
a  
c  
h  
i  
n  
g  
S  
t  
r  
a  
t  
e  
g  
y

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	<b>Knowledge</b> (i) Description of the knowledge to be acquired (ii) Teaching strategies to be used to develop that knowledge (iii) Methods of assessment of knowledge acquired		

<b>2.0</b>	<b>Cognitive Skills</b> (i) Description of cognitive skills to be developed (ii) Teaching strategies to be used to develop these cognitive skills (iii) Methods of assessment of students cognitive skills
<b>3.0</b>	<b>Interpersonal Skills &amp; Responsibility</b> (i) Description of the interpersonal skills and capacity to carry responsibility to be developed (ii) Teaching strategies to be used to develop these skills and abilities (iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility
<b>4.0</b>	<b>Communication, Information Technology, Numerical</b> (i) Description of the skills to be developed in this domain. (ii) Teaching strategies to be used to develop these skills (iii) Methods of assessment of students numerical and communication skills
<b>5.0</b>	<b>Psychomotor</b> (i) Description of the psychomotor skills to be developed and the level of performance required (ii) Teaching strategies to be used to develop these skills (iii) Methods of assessment of students psychomotor skills

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
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	.Reaction of student	By year	15 degree
2	First Exam.	4	12 degree
3	Second exam	8	12 degree
4	Third Exam	12	12 degree

#### 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)

#### E Learning Resources

##### 1. List Required Textbooks

1-Classical Mechanics by: Fowls.

2-Classical Dynamics of Particles and systems by : Jerry B. Marian 1<sup>st</sup> ed.

3-Theoretical Mechanics, E. N. Marre, S. Wiely.

4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

[www.gigapedia.com](http://www.gigapedia.com)

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

**Mathematica  
package**

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. Computing resources (AV, data show, Smart Board, software, etc.)
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department
3 Processes for Improvement of Teaching
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)
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.