Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

For guidance on the completion of this template refer to the NCAAA handbooks.

Institution: Umm Al-Qura University	Date of CR: 20/4/1439
College/ Department: College of Applied Science – Department of Physics	

A Course Identification and General Information

1. Course title: Classical Mechanics (2)			Code # 403321-3		Section # 1, 2, 3, 4	
2. Name of course instructor Dr. Doaa Abdallah Mahmoud				Location: Alzaher		
3. Year and semester to which this report applies. 1438-1439 (1st semester)						
4. Number of students starting the course?			Students completing the course?			
5. Course components (actual total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	45				14	59
Credit	3					3

B- Course Delivery

1. Coverage of Planned Program			
Topics Covered	Planned Contact Hours	Actual Contact Hours	Reason for Variations if there is a difference of more than 25% of the hours planned
Dynamics of Systems of Many Particles - Center of Mass and Linear Momentum. - Angular Momentum of a System.	12	12	

- Kinetic energy of a system of particles. - Motion of two interacting bodies. The reduced mass. - Collisions. - Oblique collisions and Scattering. Comparison of A laboratory and center-of-mass coordinates. - Impulse in collisions. - Motion of a body with variable mass. Rocket motion.			
Mechanics of Rigid Bodies, Planar Motion - Center of mass of a rigid body. - Some theorems of static equilibrium of rigid body. - Rotation of a rigid body about a fixed axis (Moment of inertia). - Calculation of the moment of inertia. - The physical pendulum. - General theorem concerning angular momentum. - Laminar motion of rigid body. - Body rolling down in inclined plane. - Motion of a rigid body under an impulsive force. - Collisions of rigid bodies.	15	15	
Motion of Rigid Bodies in Three Dimensions: - Angular momentum of a rigid body, Products of inertia. - Use of matrices in rigid body dynamics (the inertia tensor). - Determination of principle axes. - Rotational kinetic energy of a rigid body. - Moment of inertia of a rigid body about an arbitrary axis, the momental ellipsoid. - Euler's equation of motion of a rigid body. - Free rotation of a rigid body under no forces. Geometric description of the motion. - Free rotation of a rigid body with an axis of symmetry. Analytical treatment. - Gyroscopic precession. Motion of a top.	9	9	
Lagrangian Mechanics: - Generalized coordinates. - Generalized forces. - Lagrange's equations. - Some Applications of Lagrange's equations. - Generalized moments ignorable coordinate. - Lagrange's equations for impulsive forces. - Hamilton's variational principle. - The Hamiltonian function (Hamiltonian equation). - Lagrange's equations of motion with constrain - Examples.	9	9	

2. Consequences of Non Coverage of Topics

For any topics where the topic was not taught or practically delivered, comment on how significant you believe the lack of coverage is for the course learning outcomes or for later courses in the program. Suggest possible compensating action.

Topics (if any) not Fully Covered	Effected Learning Outcomes	Possible Compensating Action
NA	NA	NA

3. Course learning outcome assessment.

	List course learning outcomes	List methods of assessment for each LO	Summary analysis of assessment results for each LO
1.1	Define the physical quantities, physical phenomena, and basic principles.	Discussion and Solve some examples during the lecture. Exams: a) Quizzes (E-learning) b) Midterm and Final Exams	
1.2	Describe the physical laws and quantities using mathematics		
2.1	Apply the laws of physics to calculate some quantities.	1. Exams (Midterm, final, quizzes) 2. Asking about physical laws previously taught 3. Writing reports on selected parts of the course. 4. Discussions of how to simplify or analyze some phenomena.	
2.2	Solve problems in physics by using suitable mathematics.		
2.3	Analyse and interpret quantitative results.		
2.4	Apply physical principle on day life phenomena.		
2.5	Derive the physical laws and formulas.		
3.1	Show responsibility for self-learning to be aware with recent developments in physics	• Evaluate the efforts of each student in preparing the report. • Evaluate the scientific reports. • Evaluate the team work in lab and small groups. • Evaluation of students presentations.	
3.2	Work effectively in groups and exercise leadership when appropriate.		
4.1	Communicate effectively in oral and written form.	• Evaluating the scientific reports. • Evaluating activities and homework	
4.2	Collect and classify the material for the course.		
4.3	Use basic physics terminology in English.		
4.4	Acquire the skills to use the internet communicates tools.		

Summarize any actions you recommend for improving teaching strategies as a result of evaluations in table 3 above.

4. Effectiveness of Planned Teaching Strategies for Intended Learning Outcomes set out in the Course Specification. (Refer to planned teaching strategies in Course Specification and description of Domains of Learning Outcomes in the National Qualifications Framework)

List Teaching Methods set out in Course Specification		Were They Effective?		Difficulties Experienced (if any) in Using the Strategy and Suggested Action to Deal with Those Difficulties.
		No	Yes	
a. Knowledge	▪ Demonstrating the basic information and principles through lectures and the achieved applications ▪ Lecturing method ▪ Projector ▪ Power point ▪ e-learning ▪ Discussions and Brain storming		✓ ✓ ✓ ✓ ✓	
b. Cognitive Skills	▪ Preparing main outlines for teaching ▪ Following some proofs ▪ Define duties for each chapter ▪ Encourage the student to look for the information in different references ▪ Ask the student to attend lectures for practice solving problem ▪ Doing small research		✓ ✓ ✓ ✓ ✓ ✓	
c. Interpersonal Skills and Responsibility	▪ Learn how to search the internet and use the library. ▪ Learn how to cover missed lectures. ▪ Learn how to summarize lectures or to collect materials of the course. ▪ Learn how to solve difficulties in learning: solving problems – enhance educational skills. ▪ Encourage the student to attend lectures regularly by		✓ ✓ ✓ ✓ ✓	

d. Numerical and Communication Skills	▪ Know the basic mathematical principles. ▪ Use the web for research. ▪ Discuss with the student. ▪ Exams to measure the mathematical skill. ▪ Clearly the weakness point that should be eliminated. ▪ Encourage the student to ask for help if needed. ▪ Lectures for problem solution.		✓ ✓ ✓ ✓ ✓ ✓	

C. Results

1. Distribution of Grades

Letter Grade	Number of Students	Student Percentage	Analysis of Distribution of Grades
A	2	3%	90-100%
B	5	7.7%	80-90%
C	9	13.8%	70-80%
D	36	55.4%	60-70%
F	11	16.9%	<60%
Denied Entry	---	---	
In Progress	---	---	
Incomplete	2	3.1%	
Pass	52	80%	
Fail	11	16.9%	
Withdrawn	---	---	

2. Analyze special factors (if any) affecting the results

None

3. Variations from planned student assessment processes (if any) (see Course Specifications). None	
a. Variations (if any) from planned assessment schedule (see Course Specifications)	
Variation	Reason
None	None
b. Variations (if any) from planned assessment processes in Domains of Learning (see Course Specifications)	
Variation	Reason
None	None

4. Student Grade Achievement Verification (eg. cross-check of grade validity by independent evaluator).	
Method(s) of Verification	Conclusion
The instructors of the course are checking together and put a unique process of evaluation	
Check marking of a sample of papers by others in the department	
Feedback evaluation of teaching from independent organization	

D Resources and Facilities

1. Difficulties in access to resources or facilities (if any) None	2. Consequences of any difficulties experienced for student learning in the course.

E. Administrative Issues

1 Organizational or administrative difficulties encountered (if any) None	2. Consequences of any difficulties experienced for student learning in the course.

F Course Evaluation

1 Student evaluation of the course (Attach summary of survey results)
a. List the most important recommendations for improvement and strengths

b. Response of instructor or course team to this evaluation
2. Other Evaluation (eg. by head of department, peer observations, accreditation review, other stakeholders)
a. List the most important recommendations for improvement and strengths
b. Response of instructor or course team to this evaluation

G Planning for Improvement

1. Progress on actions proposed for improving the course in previous course reports (if any).			
Actions recommended from the most recent course report(s)	Actions Taken	Action Results	Action Analysis
a. Taught from the reference book directly	By lecturer	good	
b. Increase the contact hours between student and lecturer	By lecturer	good	

2. List what other actions have been taken to improve the course (based on previous CR, surveys, independent opinion, or course evaluation).

3. Action Plan for Next Semester/Year				
Actions Recommended for Further Improvement	Intended Action Points (should be measurable)	Start Date	Completion Date	Person Responsible
Updating the course according to the recent publications				

Name of Course Instructor: _____Doaa Abdallah Said Mahmoud_____

Signature: _ Doaa Date Report Completed: 25/4/1439

Program Coordinator: Saleh M. Allugmani

Signature: Saleh Date Received: 25/4/1439