

Kingdom of Saudi Arabia
The National Commission for Academic Accreditation
&
Assessment

Course Specification

Institution: **University of Dammam**

A. Course Identification and General Information

1. Course title and code: Mathematics Physics 1 PHYS 210N			
2. Credit hours: 3			
3. Program(s) in which the course is offered: Physics Program			
4. Name of faculty member responsible for the course: A specific team from the Mathematics Department			
5. Level/year at which this course is offered: 4th level/2nd year			
6. Pre-requisites for this course (if any): Math 211N			
7. Co-requisites for this course (if any): N/A			
8. Location if not on main campus: College of Sciences – Rayan Campus			
9. Mode of Instruction (mark all that apply)			
a. traditional classroom	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="75%"/>
b. blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. e-learning	<input checked="" type="checkbox"/>	What percentage?	25%
d. correspondence		What percentage?	<input type="text"/>
f. other	<input type="checkbox"/>	What	<input type="text"/>
percentage? Comments: The e-learning concerns the use of			<input type="text"/>
blackboard, , ect.			

B Objectives

1. What is the main purpose for this course?

On successful completion of this course students will be able to:

- **Know some of the coordinates and the relation between them**
- **Solve several kinds of differential equations**
- **Abel to solve matrices equations**
- **Know the properties of Matrices**

- **Study the Vectors and their operations**

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)

- **Create, improve and complete (beamer or power point) presentations.**
- **Update the course by comparing to the contents at other universities.**
- **Follow up on the latest books to select the most appropriate to update the contents.**
- **Create a question bank.**
- **Find web sites related to the topic.**

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
Coordinates Systems	2	6
Vector analysis	3	9
Matrices	4	12
Differential Equation	6	18

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

	Lecture	Tutorial	Laboratory or Studio	Practical	Other: Offi ce	Total
Contact Hours	3*15=45	0	0	0	4*15=60	105
Credit	3*15	0	0	0	0	45

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

Teaching Strategy

Code	NQF Learning Domains	Course Teaching	Course Assessment
1.0	Knowledge		
1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8	To know the solution of linear differential equations of higher order with coefficients constant To know the solution of differential equations of the first order and classification to Know some of the coordinates and the relation between them To know the solution of Euler equation To Know solve of matrices equations To Know the properties of Matrices To Know the Vectors and operations them To Know Fourier serial	Interactive learning process through questions and answers in class. Worked examples through a sequential delivery of surveying lectures. Homework consisting in solving selected exercises	Exams and homework are used to assess the acquired knowledge on the subject.
2.0	Cognitive Skills		
2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 2.10 2.11 2.12	Find a hit and Matrix addition Find the inverse matrix Solve a linear equations Find matrix transported Find the eigenvalues and vector of the matrix Find the solution of linear differential equations of higher order with coefficients constant Find the solution of Euler equation Find Fourier serial of function Find a solution to the Separable differential equation. Find a solution to the Exact differential equation Find a solution to the linear differential equation Find a solution to the homogeneous differential equation	Lectures are covered by different worked examples. Engage students in discussions with questions and answers. Homework consisting in solving selected exercises. Encourage and develop self education.	Homework include problems, solution of which requires scientific thinking, and applications of essential theorems and results of the course Oral and written tests. Explain and communicate the corrected answers of the exams and quizzes.

3.0	Interpersonal Skills & Responsibility		
3.1	Punctual attendance of classes is required. Students should demonstrate their sense of responsibility for learning by completing both reading and writing assignments in due time.	Discussion.	Class attendance of students at the beginning of the lecture is recorded. Recording of submission of assignment Observations, interviews, and peer evaluations.
3.2	Students learn to manage their time.	Explanation.	
3.3	Accustom students to take responsibility of self learning	Guidance and supervision of the group assignments for research projects.	
3.4	Students should act responsibly and ethically in carrying out individual as well as group	Assignments are given to the students at regular intervals for them to solve and submit on time.	
3.5			
4.0	Communication, Information Technology, Numerical		
4.1	Ability to communicate in written and in oral.	Research projects.	Periodic written and oral tests. Discussion Observation.
4.2	Ability to write reports in English	Oral presentations.	
4.3	Ability to explain each step in the problem solving process.		
4.4	Ability to apply course concepts to mathematical problem solving model.		
4.5	Ability to use information technology in communication and research projects.		
4.6	Interact with life problems using different methods		
5.0	Psychomotor		
	N/A	N/A	N/A

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

Course LO	Program Learning Outcomes (Use Program LO Code #s provided in the Program)									
	1.1	1.2	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2
	1.1	✓								
1.2	✓									
1.3	✓									
1.4	✓									
1.5	✓									
1.6	✓									
1.7	✓									
1.8	✓	✓								
2.1					✓					✓

2.2					✓					✓	
2.3					✓					✓	
2.4					✓					✓	
2.5					✓					✓	
2.6					✓					✓	
2.7					✓					✓	
2.8					✓					✓	
2.9					✓					✓	
2.1					✓					✓	
2.1					✓					✓	
2.1					✓					✓	
3.1								✓			
3.2								✓			
3.3								✓			
3.4								✓			
3.5								✓			
4.1						✓	✓				
4.2						✓					
4.3			✓								
4.4				✓							
6. Schedule of Assessment Tasks for Students During the Semester										✓	
4.6	Assessment task (e.g. essay, test, group project, examination,						Week Due	Proportion of Total			
1	Quizz1						4	5%			
2	Mid-term1						6	15%			
3	Quizz2						8	5%			
4	Mid-term2						11	15%			
5	Homework						Every week	5%			
6	Research project						15	5%			
7	Final exam						As	50			

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)

4 hrs/week for students' consultation and academic advice.

E Learning Resources

1. List Required Textbooks <ul style="list-style-type: none">• Introduction to Mathematical Physics, Charie Happer, Printic- Hall (1976)• Mathematical methods for Science Students G. Stephenson, (1992)
2. List Essential References Materials (Journals, Reports, etc.)
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)
4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

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.) <ul style="list-style-type: none">• Lecture room with 20 seats.• Smart class.
2. Computing resources (AV, data show, Smart Board, software, etc.) <ul style="list-style-type: none">• Computer room with at least 10 systems• Computer room with 20 seats
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none">• Student course evaluation at the conclusion of the course.• Sample of assignments and tests.• Observations and discussions during the semester.
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <ul style="list-style-type: none">• Faculty assessment of the course and effectiveness of teaching delivery.• Periodic self-assessment of the program.
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none">• Participate to workshops on evaluation approaches and effective teaching methods to enable instructors to improve their teaching skill.• Teaching method will focus on students' learning and on course learning outcomes.
<p>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)</p> <ul style="list-style-type: none">• A Committee reviews samples of student work in this course to check on the standard of grades and achievements.• An external faculty member evaluates the course material and the students' work to compare the standard of grades and achievements with those at his university.
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <p>Carry out Self- assessment at every two years and external assessment invited faculty members every four years. The feedback received from these assessments will be used to plan for further improvement in the course syllabus, teaching method, and delivery of course materials.</p>

Signature

Dr. Ameerah A. AL-Dhawi