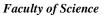
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Course specification

University/Academy: Damanhour University

Faculty/Institute: Science
Department: Mathematics

1. course Data:				
Course code:	Course title:		Academic year/level:	
Math410	Fluid Dynamics		2010-2011	
			Fourth year - Second term	
Specialization: No. of instruction		nal unite		
Special Mathematics	lecture $\frac{3}{3}$	tutorial 2	practical [-	
2. course Aim		Demonstrate theoretical knowledge and have practical skills and personal attributes that will be required for Theory of Fluid Dynamics. Demonstrate an ability to initiate and sustain in-depth research relevant to Fluid Dynamics.		
3. Intended learning outcome				
a) Knowledge and understanding		a1. Define the nat Dynamics.	ure and operations of Fluid	
		a2. Describe familia used in the Fluid Dyn	rity with theories and concepts amics.	
		public and private s Dynamics.	ructure and organization of the sectors of the concepts Fluid	
			s required to carry out a piece c within Fluid Dynamics.	
b) Intellectual skills		· · · · · · · · · · · · · · · · · · ·	ate theories, principles and	
		b2. Critically assess Fluid Dynamics.	and evaluate the literature with	
		b3. Analyze and inte of sources relevant to	rpret information from a variety Fluid Dynamics.	

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b4. Demonstrate a reasoned argument to the solution of familiar and unfamiliar problems relevant to mathematical equations in the Fluid Dynamics
c1. Plan practical activities using techniques and procedures appropriate to mathematic related to Fluid Dynamics c2. Execute and communicate a piece of independent research using mathematics media and techniques Fluid Dynamics. c3. Respond to change within the external and internal mathematics to Fluid Dynamics.
c4. Solve problems relevant to Fluid Dynamics.
d1. Deal with an appropriate effective data relevant to Fluid Dynamics.
d2. Demonstrate the ability to work effectively as part of a group, involving leadership, group dynamics and interpersonal skills such as listening, negotiation and persuasion relevant to mathematics and theoretical physics.
d3. Use organization skills (including task and time management) relevant to Fluid Dynamics both individually and in a group situation.
d4. Solve problems relevant to Fluid Dynamics using ideas and techniques some of which are at the forefront of the discipline.
d5. Acquire the ability to self appraise and reflect on practice relevant to Fluid Dynamics.
1-Two – dimensional motion
2- Stream function .
3- Velocity Potential , Complex Potential, Complex
Velocity 4. Placius theorem
4- Blasius theorem
5- Uniform stream, Source, Sink and Vortex
6- Uniform stream past a Circular cylinder with circulation
7- Doublets
8- Images
9- Conformal transformation, the Joukowski transformation

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	10- Uniform flow with circulation past an elliptic	
	cylinder. 11- Rectilinear vortices	
	11- Rectilinear vortices 12- Theory of waves	
	13- Simple harmonic Progressive waves,	
	Capillary Waves, Stationary Waves.	
	14- Sound waves	
5. Teaching and learning	5.1 Lectures.	
methods	5.2 Tutorials	
	5.3 Homework	
	5.4 Oral discussion	
6. teaching and learning	Non	
methods for students with		
special needs		
7. Student Assessment		
a. Procedures used:	Final exam	
av 11000aa105 aseat		
	Accordant 4 Final comm. What 45	
b. Schedule:	Assessment 1 Final exam Week 15	
	Final exam 150 Marks	
c. Weighing of Assessment:		
Q List of Toythooks and Defense	nangi	
8. List of Textbooks and Referen		
a. Course Notes	Course notes provided by the staff member of	
	Math department, to be handed at the beginning	
	of the semester.	
	52 3 5	

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b. Required Books (Textbooks)	L.M.Milne- Thomson Theoretical Hydrodynamics
-	London , Macmillan & Coltd New York 1960
1- Recommended Books	Title: Advanced Computer Programming
	Author: F. J. Corbato, J. W. Poduska and J. H. Saltzer The MIT PRESS 1963
2- Periodicals, web sites,,etc	None

Course Instructor: Dr. Ragab Omar Abd El-Rahman

Head of Department: Dr. Ragab Omar Abd El-Rahman

Date: / /