Cairo University
Faculty of Engineering

Department of Aerospace Engineering

Course Specifications

Program(s) on which this course is given:	Aircraft Structures
Department offering the program:	Aerospace Engineering
Department offering the course:	Aerospace Engineering
Academic Level:	M.Sc.
Date	2015
Semester (based on final exam timing)	☐ Fall ☐ Spring

A- Basic Information

1. Title:	Theory Of Plates And Shells			**Code:**	AER642			
2. Units/Credit hours per week:	Lectures	2	Tutorial	1	Practical		Total	3

B- Professional Information

1. Coursedescription:	
2. Intended Learning Outcomes of Course (ILOs):	**a) Knowledge and Understanding**
	Understand different theories of analysis of plates and shells
	b) Intellectual Skills
	Analyze mini plates and shells with different boundary conditions
	c) Professional and Practical Skills
	Calculate stresses and displacements in plates and shells using analytical and numerical methods
	d) General and Transferable Skills
	Solve problems

3. Contents

Topic	Total hours	Lectures hours	Tutorial/ Practical hours
Kirchhoff's theory of thin plates	2		
Navier and Levy solutions of thin plates	4		
Plates with in plane loading	2		
Plate instability	2		
Circular plates	2		
Solving plate problems using energy Galurkin's methods	3		
Solving plates using the finite different methods	3		

4. Teaching and Learning Methods	Lectures (✓)	Practical Training/ Laboratory ()	Seminar/Workshop ()
	Class Activity ()	Case Study ()	Projects ()
	E-learning ()	Assignments /Homework ()	Other:

5. Student Assessment Methods	
• **.Assessment Schedule**	**Week**
-Assessment 1;Attendance	
-Assessment 2;Home work	
-Assessment 3; Final Exam	15
• **Weighting of Assessments**	
-Final-term Examination	70%
- Home work Assignment	20%
- Attendance	10%
-Total	100%
6. List of References	
1-Timoshenk and Krieger, “Theory Of Plates And Shells ”	
2-Szilarel, “ Theory And Analysis Of Plates”	
3-Kraus, “ Thin Elastic Shells ”	
4-Almroth, “Buckling Of Bars, Plates And Shells”	
5-Crandall, “Engineering Analysis ”	
6-Negm, “Course Notes”	
7. Facilities Required for Teaching and Learning	
Course Coordinator:	**Prof. Hani M.Negm**
Head of Department:	**Prof. Hani M.Negm**