Course Specifications

Program(s) on which this course is given:	Aerospace Engineering Department
Department offering the program:	Aerospace Engineering Department
Department offering the course:	Aerospace Engineering Department
Academic Level:	PhD
Date	April 2015
Semester (based on final exam timing)	■ Fall ☐ Spring

A- Basic Information

1. Title:	**Flight Mechanics of Highly Flexible Aircraft**			**Code:**		**AER757**		
2. Units/Credit hours per week:	Lectures	2 hrs	Tutorial		Practical		Total	2 hrs

B- Professional Information

1. Course description:	The course aims at teaching students the followings: Integrated fundamental treatment of the physical and mathematical aspects of nonlinear aeroelasticity, integration between steady and unsteady aerodynamics and flexible structures and their components with applications to air-space-land vehicles, wind mills, and solar sails.
2. Intended Learning Outcomes of Course (ILOs):	**a) Knowledge and Understanding**
	1. Students will be able to understand the fundamental concepts Integrated fundamental treatment of the physical and mathematical aspects of nonlinear aeroelasticity.
	b) Intellectual Skills
	2. Students will be able to understand integration between steady and unsteady aerodynamics and flexible structures
	c) Professional and Practical Skills
	3. Students will be able to understand the air-space-land vehicles, wind mills, and solar sails
	d) General and Transferable Skills

3. Contents

Topic	**Total hours**	**Lectures hours**	**Tutorial/ Practical hours**
Integrated fundamental treatment of the physical and mathematical aspects of nonlinear aeroelasticity	7	7	
integration between steady and unsteady aerodynamics and flexible structures	8	8	
air-space-land vehicles, wind mills, and solar sails	7	7	
	Lectures (√)	Practical Training/Laboratory (√)	Seminar/Workshop ( )
	Class Activity ( )	Case Study ()	Projects ()

	E-learning ( )	Assignments/Homework (√)	Other:

5. Student Assessment Methods

• **Assessment Schedule**	**Week**
Assignment 1	Week 2
Assignment 2	Week 4
Assignment 3	Week 8
Assignment 4	Week 11
• **Weighting of Assessments**	
Assignments	25%
Attendance	5%
Final-term Examination	70%

6. List of References

6.1- Course Notes

6.2- Essential Books (Text Books)

1. FLEXSTAB – Vol. 1
2. Etkin_Dynamics of Flight Stability and Control

6.3- Recommended Books

1. Feedback Control Systems [John Van De Vegte].

7. Facilities Required for Teaching and Learning

. Data Show , Screen.

Course Coordinator:	**Prof. Gamal M. El-Bayumey**
Head of Department:	**Prof. Ayman H. Kassem**