Course Specifications

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

A- Basic Information

1. Title:	Airtransport Engineering			**Code:**		AER 682		
2. Units/Credit hours per week:	Lectures	3	Tutorial	----	Practical	----	Total	3

B- Professional Information

1. Course description:	This course covers operation research tools for transportation problems. It then moves to application as fleet assignment, aircraft routing, maintenance scheduling. Operational aspects are considered.
2. Intended Learning Outcomes of Course (ILOs):	**a) Knowledge and Understanding**
	Understanding the methodology of achieving the effectiveness of airtransport activities
	b) Intellectual Skills
	Analyzing airtransport problems
	c) Professional and Practical Skills
	d) General and Transferable Skills
	Employing OR techniques to solve problems

3. Contents

Topic	Total hours	Lectures hours	Tutorial/ Practical hours
Transportation and transshipment models	3	3	----
Linear programming	6	6	----
assignment problems / integer programming applications	6	6	----
Cost analysis	3	3	----
fleet assignment	6	6	----
maintenance and operational considerations	6	6	----
Aircraft routing	3	3	----
Tactical decisions concerning pricing, yield management and seat inventory control	3	3	----
practice tools and decision approaches for airline planning	6	6	----

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;Class test	
-Assessment 1; Project Assignment	6
-Assessment 2; Project Assignment	12
-Assessment 4; Final Exam	15
• **Weighting of Assessments**	
-Mid-Term Examination	
-Final-term Examination	70%
-Project	30%
-Class Test	
-Presentation	
-Total	100%

6. List of References

Air Transportation System Analysis and Modeling, M.Janic, CRC Press, 2002

Airline Operations and Scheduling, M.Bazargan, Ashgate, 2010

Papers, research reports/postgraduate theses as related to various topics (to be made available to students)

7. Facilities Required for Teaching and Learning

Data show-laptop-internet

Course Coordinator:	Prof. A.A.Hashem
Head of Department:	Prof. A.H.Kasem