Arab Academy for Science and Technology and Maritime Transport
Information Systems Curriculum
Course Syllabus

Course Code: **IS473**	Course Title: Multimedia Information Systems	Classification: E	Coordinator's Name: Prof. Dr. Ossama Badawy	Credit: 3 hrs
Pre-requisites: **IS273 (Database Systems)** **CS212 (Data Structures and Algorithms)**	**Co-requisites:** None	**Schedule:** Lecture 2 hrs. Tutorial/Lab 2 hrs.		

Office Hours:
(Room 409)
Wednesday 08:30 – 10:30 AM

Course Description:
This course explains how the different media in a special database can be handled. The course introduces the students to the technologies of inserting, deleting and updating Images, Video, Audio, and documents data in Multimedia databases and the main characteristics of these types of data. Topics included in this course are image feature extraction, relevance feedback in content-based image retrieval, video segmentation, video indexing and retrieval, Text retrieval, Semantic models for multimedia database searching and browsing, and Multimedia retrieval framework and trends.

Textbook:
Ze Nian Li and Mark Drew, "Fundamentals of Multimedia", Prentice-Hall, 2014.

References:
David Feng, *Multimedia Information Retrieval and Management*, Springer.
International Conference on Multimedia & Network Information Systems
International Journal of Multimedia Information Retrieval

Course Objective/Course Learning Outcome:	Contribution to Program Student Outcomes:
1. Understand the concept of multimedia information retrieval.	(SO-1) Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Understand the principles, applications, trends, and pertinent issues of Multimedia information systems and sciences	
3. Create database for indexing and searching multimedia information. 4. Design and implement retrieval software for multimedia data.	(SO-2) Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
5. Analyze and solve problems related to multimedia databases by using Multimedia software.	(SO-6) Support the delivery, use, and management of information systems within an information systems environment.

Course Outline:

Week 1. Introduction to course and to MM IS
Week 2. Fundamentals concept in Image retrieval
Week 3. Image retrieval
Week 4. CBIR system
Week 5. Fundamentals concepts in video
Week 6. Video compression techniques 1
Week 7. 7th Week Exam
Week 8. Video compression techniques 2

Week 9 Video retrieval
Week 10. Content based video Retrieval (CBVR) systems 1
Week 11. Content based video Retrieval (CBVR) systems 2
Week 12. Multimedia net communication system
Week 13. Internet multimedia application
Week 14. Project presentation
Week 15. Project presentation
Week 16. Final Exam

Grade Distribution:

7th Week Assessment (30%):
Exam (15%) + Homework Assignments 5% + Programming Assignments 10%

12th Week Assessment (20%):
Project

Year Work (10%):
Project Presentation and Discussion (5%) + Homework Assignments (5%)

Final Exam (40%)

Policies:

Attendance:
AASTMT Education and Study Regulations (available at aast.edu)

Academic Honesty:
AASTMT Education and Study Regulations (available at aast.edu)

Late Submission:
Late submissions are graded out of 75% (1 week late), 50% (2 weeks late), 25% (3 weeks late), 0% (more than 3 weeks late)