Republic of Iraq
The Ministry of Higher Education & Scientific Research

University: University of Technlogy
College: Computer Science
Department: Artificial Intelligent
Stage: 3rd Prog. , info. , A.I, Multimedia
Lecturer name:Dr. Farah Tawfiq
Academic Status: Dr. Lecture
Qualification: Ph.D.
Place of work: Computer Science

Course Outline

Course Instructor	Farah Tawfiq Abdul Hussien
E-mail	Farah.T.Alhilo@uotechnology.edu.iq
Title	Computer Graphic
Course Coordinator	
Course Objective	1-Highlight the student to known between contours computer and graphic computer, recognize the mathematical basics and algorithms applied in the computer. 2-Design software tools that it help computer graphics apply its and build a simple one that Simulate Computer graphic application, and addition that help to explain the cases in this aspect.
Course Description	Knowledge to the introduction of computer graphics and applications and also Known the principle of the Vectors, we can plot basic geometric shapes with forms design and Transformation figure (moving shapes and rotation and scaled and shearing figure). Knowledge of clipping operations within the display window and Mapping operation. Then go to 3D system and know the deal in the previous cases of Transformation with how ways representation 3D in the computer and plot it into the computer and represent its. And other subject is a curve spline such as: Bezier-Spline, B-Spline, Cubic-Spline.
Textbook	s
References	• computer graphics mathematics first step, P. A. Egerto and W. S. Hall, 1998. • Visual Basic game Programming for teens, Jonathan S. Harboor, 2005 • Riškus, "Approximation of a Cubic Bézier Curve by Circular Arcs and Vice Versa", *Information Technology and Control*, 2006 • Juhász, "Approximating the helix with rational cubic Bézier curves" *Computer-Aided Design*, 1995.

Course Assessment	**semester**	**First Semester**	**1Second Semester**	**Laboratories**	**Final Examination**
	First Second	15	15	10	60

General Notes	• Stage:- 3rd that it is Studying on the Branch (**Programmatic** , *System Information* , **Artificial Intelligent** , *Multimedia*). • Was amended on Subject in 30/09/2013 by the subject Instructor, and authentication of the Scientific Committee in the Department of Computer

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First Course weekly Outline

week	Date	Topics Covered	Lab. Experiment Assignments
1	1st week	3D vectors and all properties.	3D vectors
2	2nd week	3D format + 3D graphic representation.	3D graphic representation
3	3rd week	3D format + 3D graphic representation	3D graphic representation
4	4th week	Rotation around the main axes as well as rotation on the random axis	Rotation around the main axes as well as rotation on the random axis
5	5th week	Matrix - Transformation3D.	Matrix - Transformation3D.
6	6th week	Parallel (orthogonal) projection + perspective projection .	Parallel (orthogonal) projection + perspective projection
7	7th week	oblique projection	oblique projection
8	8th week	**Spline Curve (Beazer curve + B-spline)**	**Spline Curve (Beazer curve + B-spline)**
9	9th week	**Cubic interpolation**	**Cubic interpolation**
10	10th week	3D shapes (helix, sphere, and 3D line).	3D shapes (helix, sphere, and 3D line).
11	11th week	Finding the normal vector of a plane and finding the equation of surfaces.	Finding the normal vector of a plane and finding the equation of surfaces.
12	12th week	Examination and detection of points belonging to the surface or not.	Examination and detection of points belonging to the surface or not.
13	13 week	Detect visible and hidden surfaces in 3D	Detect visible and hidden surfaces in 3D
14	14th week	Generate shadows on 3 planes + build maps between Window & viewport.	Generate shadows on 3 planes + build maps between Window & viewport.
15	15th week	Mid Exam	Lab exam
Second Course examination Break			

Instructor Signature: **Dean Signature:**