

(Updated Spring 2016)

**UK LEVEL 5
UK CREDITS: 10**

PREREQUISITES:	ITC1070 LE Information Technology Fundamentals –or- CS1070 Introduction to Information Systems									
CATALOG DESCRIPTION:	3D object manipulation. Modelling methodologies. Lighting and rendering effects. Camera manipulation. Textures creation and use. Dynamic animation. Characters creation and manipulation.									
RATIONALE:	The course is intended for students of the Digital Media Technologies of the IT major. It aims to provide in-depth experience of 3D modelling practices and applications. Object manipulation, lighting and rendering techniques, and specialized components, such as characters, are addressed at various levels.									
LEARNING OUTCOMES:	As a result of taking this course, the student should be able to: 1. Demonstrate knowledge of object manipulation 2. Analyse modelling techniques. 3. Construct 3D models with animation capabilities and use them to compose 3D scenes.									
METHOD OF TEACHING AND LEARNING:	In congruence with the teaching and learning strategy of the college, the following tools are used: • Classroom lectures, class discussions. • Laboratory sessions, involving training and practice in the creation of 3D scenes. • Office hours: Students are encouraged to make full use of the office hours of their instructor, where they can ask questions and go over lecture material. • Use of the Blackboard Learning platform, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.									
ASSESSMENT:	Summative: <table><tr><td>Midterm Examination: combination of short essay questions and case problems</td><td>40%</td></tr><tr><td>Project: Model creation/ development of a 3D scene/animation</td><td>60%</td></tr></table> Formative: <table><tr><td>In-class, 1-hour, “diagnostic” test: short essays</td><td>0</td></tr><tr><td>Coursework: practical exercises / creation of 3D scenes/ case problems</td><td>0</td></tr></table> The formative assessments aim to shape teaching along the semester and prepare students for the summative assessments. The midterm examination tests learning outcomes 1, 2 The project tests learning outcomes 2,3		Midterm Examination: combination of short essay questions and case problems	40%	Project: Model creation/ development of a 3D scene/animation	60%	In-class, 1-hour, “diagnostic” test: short essays	0	Coursework: practical exercises / creation of 3D scenes/ case problems	0
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INDICATIVE READING:	REQUIRED READING: Vaughan, W. (2012). <i>Digital modeling</i> . Berkeley, Calif.: New Riders. Instructor's Notes. RECOMMENDED READING: Murdock K.L. (2015). <i>3ds Max 2016 Bible</i> , Wiley. Schroff Development Corporation, (2014), <i>Autodesk 3DS Max Design Fundamentals</i> , SDC Publications. Van der Steen J. & Boardam T. (2010), <i>Rendering with Mental Ray and 3ds Max</i> , 2 nd ed., Autodesk.
INDICATIVE MATERIAL: <i>(e.g. audiovisual, digital material, etc.)</i>	REQUIRED MATERIAL: N/A RECOMMENDED MATERIAL: N/A
COMMUNICATION REQUIREMENTS:	Daily access to the course's site on the College's Blackboard CMS. Use of word processing and/or presentation graphics software for documentation of assignments.
SOFTWARE REQUIREMENTS:	AUTODESK 3ds Max, latest release TrueSpace 3D authoring software, latest release Adobe Creative Suite Master Collection, latest release
WWW RESOURCES:	3D Studio MAX Tutorials: (http://www.tutorialized.com/tutorials/3DS-MAX/1) Google SketchUp (http://sketchup.google.com/) 3D Model Resources (http://forums.cgarchitect.com/10745-free-3d-model-resources.html) Blender Model Repository (http://e2-productions.com/repository/index.php) 3dTotal: The CG Artist's Repository (http://www.3dtotal.com/)
INDICATIVE CONTENT:	<ol style="list-style-type: none"> 1. Creating and editing primitive objects. Object properties. 2. Transforming objects. Pivoting, aligning and snapping 3. Cloning, grouping, linking. Containers. 4. Modifiers. Splines and shapes. 5. The polygon model. 6. Materials creation and manipulation 7. Animation. Constrains and controllers. 8. Rendering scenes. 9. Lighting effects. 10. Compound objects. 11. Modelling with patches and NURBS. 12. Viewport canvas and surface maps. 13. Camera operation. 14. Constructing and applying textures. 15. Physics-based motion. 16. Character creation and manipulation. 17. Atmospheric and render effects. 18. Rendering with mental ray.