Course Title	**:**	Electronic Publishing and 3D Modelling
Course Code	:	CDS253/CDS2253
No. of Credits/Term	:	3
Mode of Tuition	:	Sectional Approach
Class Contact Hours	:	3 hours per week
Category in Major Prog.	:	Free Elective
Prerequisite(s)	:	None

Brief Course Description

With the advent of computing technology, electronic documents have evolved continuously with ever more precise layout control, exquisite typesetting and multimedia contents. More recently, the availability of affordable computer graphics processors has enabled the widespread use of interactive 3D graphics in many applications that require 3D modelling such as mapping, architecture, product design, etc. Across a myriad of software packages for creating and editing various types of electronic documents with 3D models, standard formats have emerged and one has to be familiar with these formats in order to carry out their modelling and publishing work effectively.

The aim of this course is to introduce the major electronic document and 3D modelling formats that are relevant to business and industry. It addresses the principles of creating and publishing documents and 3D models and illustrates their use in real-world applications. Students will also learn to use relevant software for various publishing and modelling tasks.

Aims

This course aims to equip students with current knowledge and practical skills in electronic documents and publishing.

Learning Outcomes

On completion of this course, students will be able to:

1. Understand the principles of electronic document and 3D modelling formats and software.
2. Select appropriate electronic document and 3D modelling formats and software for different applications.
3. Apply basic publishing and modelling techniques for electronic documents and 3D models.

Measurement of Learning Outcomes

1. Principles of electronic document and 3D modelling formats and techniques will be covered in the written examination.
2. Students will learn and apply publishing and modelling techniques through laboratory exercises which form a major part of the continuous assessment.
3. Students will select and apply publishing and modelling techniques for specific applications in projects. They will work in groups on different project topics, each of which requires a careful analysis of the requirements of the intended publication or design before selecting and applying any formatting and modelling techniques. Examples include product brochures, corporate web sites, floor plans, etc. The aim of the project is give students opportunities to put into practice what they learn in lectures and laboratory sessions.

Learning Outcomes	Assessment		
	Laboratory exercises	Project	Examination
1. Understand the principles of electronic document and 3D modelling formats and software.			Individual
2. Select appropriate electronic document and 3D modelling formats and software for different applications.	Individual	Group + Individual	Individual
3. Apply basic publishing and modelling techniques for electronic documents and 3D models.	Individual	Group + Individual	Individual

Indicative Content

Principles of electronic publishing and 3D modelling
The publishing process, document design, text and graphics, multimedia, compression, security and encryption, digital signature, geometry, effects, textures, lighting

Electronic document and 3D modelling formats
Hypertext Markup Language (HTML), Extensible Markup Language (XML), Open

Document Format (ODF), Portable Document Format (PDF), Postscript, TeX/LaTeX, Universal 3D, Collada

Electronic document and 3D modelling software
Text editor, image editor, vector-based graphic editor, page layout formatter, document assembler, Google SketchUp, Autodesk 123D

Applications
Web publishing, print publishing, electronic forms, presentations, multimedia, document management, product design, prototyping, architecture, theatre design, visual arts, additive manufacturing

Ethical issues
Intellectual property rights

Teaching Method

Concepts, principles, technologies are introduced through examples during lectures. Students acquire various techniques through hands-on exercises during laboratory sessions. They will also study real-world applications through practical group projects.

A typical teaching week consists of a one-hour lecture and a two-hour laboratory session, covering the principles and hands-on exercises, respectively, of a major topic. Each laboratory session is structured as a task-based software demonstration which is accompanied by a corresponding set of publishing and modelling exercises to be carried out by students individually during and after the session. Student works are to be submitted at Moodle and assessed individually.

Around mid-term, students will form groups and prepare their project proposals. They will receive comments on their proposals and then continue to develop their products until the end of term. An oral presentation will also be scheduled. The examination will be conducted during the last week of term and will involve using software in answering some hands-on questions.

Assessment

Laboratory exercises   :   30%
Group Project   :   30%
- Proposal (5%) (Group)
- Oral presentation (5%) (Individual)
- Product & deliverables (20%) (Group)

Examination   :   40%

Required/Essential Readings

| Sandeep Singh | Beginning Google SketchUp for 3D Printing | Apress, 2010 |
| Chris Botello | Adobe InDesign CS6 Revealed | Cengage, 2013 |

Recommended/Supplementary Readings

Kvern, Blatner, Bringhurst	Real World Adobe InDesign CS6	Peachpit Press, 2012
Ted Padova	Adobe Acrobat X PDF Bible	Wiley, 2011
L. Brixius	Google SketchUp Workshop	Focal Press, 2011