BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI
K. K. BIRLA GOA CAMPUS
CENTER FOR TECHNICAL EDUCATION

Course Title : Introducing Autodesk Maya 2018.

Instructor : Vishnu Nair

Co-Instructors : Vinayak Shukla

1. Scope and Objective of the course:

The course, Introducing Autodesk Maya 2018 , gives students a comprehensive overview of everything that this software has to offer. We begin with a basic introduction to the UI with a practice assignment wherein we make a model of the solar system. Then we deal with modelling and animation in great detail with a number of assignments to help people apply what they have learned. Finally we deal with other fields like shading , texturing , rigging , lighting , rendering , dynamics and nParticles. All in all we cover each and every aspect of computer graphics as applied in industry. This will give students a good start in this field and they can then practice and specialize based on their interest.

2. Course Plan:

SR NO.	WEEK	TOPIC TO BE COVERED	DETAILS
1.	Week 1	Maya Installation and UI	During this week we'll help the students to install Autodesk Maya 2018 and to get the software started up. This will be followed by a brief introduction to the user interface of the software.
2.	Week 2	Advanced UI Components and basic application.	During this week we'll deal with some advanced elements of the Maya UI. Plus students will make a miniature Solar System in class so that whatever they have learned is put into practice and they become comfortable with the software.
3.	Week 3	Introduction to 3D Modelling-I	During this week we'll start teaching students about 3D modelling. We'll tell them about some basic modelling principles and techniques and some basic tools that can be helpful.
4.	Week 4	Introduction to 3D Modelling-II	During this week we'll teach students about polygonal modelling. All tools used in hard surface modelling will be covered in detail. We'll model a decorative box in class for practice.

5.	Week 5	Introduction to 3D Modelling-III	During this week we'll teach students about NURBS modelling.All tools used in organic modelling will be covered in detail. We'll model a glass jar and a candle for practice.
6.	Week 6	Introduction to 3D Animation-I	We'll start with a class on the 12 principles of animation as well as some basic terms like keyframes,ease in and ease out,anticipation etc.
7.	Week 7	Introduction to 3D Animation-II	We'll apply the concepts learned in the previous week by animating a bouncing ball and a flying axe.This way students will also learn to make use of another powerful feature in maya-graphs.
8.	Week 8	Introduction to 3D Animation-III	Finally we'll learn about animating humans. We'll discuss how to create a human skeleton used in maya and we'll animate a walking human using IK and FK.We'll also discuss constraints and set-driven keys.
9.	Week 9	Rigging	Animating any model in maya requires rigging of that model. In this class we'll teach the students how to create a simple character rig in maya.
10.	Week 10	Shading and Texturing	During this week we'll introduce students to texturing. They will learn how to use the hypershade as well as how to use UV Layouts to texture their models. We apply all this to the decorative box we modelled earlier.
11.	Week 11	Introduction to Lighting	During this week we give a brief introduction to lighting in maya. We talk about the different kinds of lights that can be created as well as the 3 point lighting system. We even discuss raytracing and using the powerful mental ray lighting system in maya.
12.	Week 12	Introduction to Rendering	We talk about how to create reflections and refractions and apply this to the glass jar we modelled earlier. We also touch up on things like final gather, global illumination, HDRI, moton blur, batch rendering and once again mental ray.
13.	Week 13	Dynamics and nParticles	During this week we discuss-very briefly about nParticles in particular nCloth as well as Dynamics and maya nucleus.

14.	Week 14	Revision	All concepts taught will be revised.

3. Evaluation Scheme:

Component	Weightage (%)	Tentative Date	Remarks
Written Test-I	20	Post midsem	Open book
Written test-II	20	Before Compre	Open book
Assignments	30	Regularly in Class	Based on stuff we made in class.