

<b>COURSE TITLE</b>	<b>CHARACTER MODELING AND SCULPTING</b>
<b>COURSE CODE</b>	<b>05MA0205</b>
<b>COURSE CREDITS</b>	<b>2</b>

**Objective:**

- 1 Understand the principles of character design and anatomy.
- 2 Develop skills in creating character models using both Maya and ZBrush.
- 3 Learn sculpting techniques in ZBrush for adding detail and realism to characters.
- 4 Explore industry-standard workflows for integrating Maya and ZBrush.
- 5 Apply retopology techniques to create optimized character models for animation.

**Course Outcomes:** After completion of this course, student will be able to:

- 1 Students will be able to demonstrate an understanding of character design and anatomy.
- 2 Students will be able to create character models using Maya's polygon modeling tools.
- 3 Students will be able to sculpt detailed and realistic characters in ZBrush.
- 4 Students will be able to retopologize and UV map character models for animation.
- 5 Students will be able to integrate Maya and ZBrush in a streamlined workflow for creating high-quality character art.

**Pre-requisite of course:** Basic knowledge of 3D modeling concepts is helpful.

**Teaching and Examination Scheme**

<b>Theory Hours</b>	<b>Tutorial Hours</b>	<b>Practical Hours</b>	<b>ESE</b>	<b>IA</b>	<b>CSE</b>	<b>Viva</b>	<b>Term Work</b>
0	0	4	0	0	0	50	50

<b>Contents : Unit</b>	<b>Topics</b>	<b>Contact Hours</b>
<b>Total Hours</b>		

### Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	<b>UNIT 1</b> Introduction to Maya and ZBrush Introduction to Maya Interface – Understanding the user interface, navigation, and basic modeling tools. Introduction to ZBrush Interface – Understanding the user interface, navigation, and sculpting tools. Basic Modeling in Maya – Creating base meshes using Maya's polygon modeling tools. Sculpting Fundamentals in ZBrush – Understanding brushes, sculpting techniques, and dynamic tessellation. Understanding Subdivision Levels - Working with subdivision levels in both Maya and ZBrush for efficient modeling and sculpting.	30
2	<b>UNIT 2</b> Character Sculpting in ZBrush Sculpting Human Anatomy – Sculpting realistic human anatomy, including muscles, bones, and skin details. Sculpting Facial Features – Creating realistic facial features, including eyes, nose, mouth, and ears. Sculpting Clothing and Accessories – Adding clothing, armor, and accessories to character models. Using Alphas and Textures – Applying alphas and textures to add surface detail and realism. Posing Characters – Posing characters using ZBrush's Transpose Master or other posing tools.	30
<b>Total Hours</b>		<b>60</b>

### Textbook :

- 1 ZBrush Digital Sculpting Human Anatomy, Scott Spencer, Sybex (an imprint of Wiley), 2010

### References:

- 1 Introducing ZBrush, Introducing ZBrush, Eric Keller, ABC, 2010
- 2 Mastering Maya 2020, Mastering Maya 2020, Todd Palamar, NA, 2020

### Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking / Creative
10.00	20.00	25.00	25.00	10.00	10.00

### Instructional Method:

- 1 Practical

**Supplementary Resources:**

- 1 <http://pixologic.com/zclassroom/>
- 2 <https://help.autodesk.com/view/MAYAUL/2023/ENU/>
- 3 <https://www.youtube.com/watch?v=khQ9Uofihjc&list=PLUfvEFtCJXw40GigsoLGogr4fDFddBAqd>
- 4 <https://www.zbrushcentral.com/t/the-new-alpha-library-in-the-download-center/280199>
- 5 <https://www.youtube.com/watch?v=XQ5xAWqZLEM>