

**SCHEME OF EXAMINATION  
&  
SYLLABUS  
of  
UG Programme (Interdisciplinary)**

**B.Sc. (Graphics & Animation)  
Scheme: D**

**As per National Education Policy 2020  
(Multiple Entry-Exit, Internships and Choice Based Credit System)  
w.e.f. Academic Session: 2024-2025**



**INSTITUTE OF MASS COMMUNICATION &  
MEDIA TECHNOLOGY**

**Kurukshetra University, Kurukshetra  
(A++ Grade NAAC Accredited)**

**under**

**Faculty of Commerce and Management,  
Kurukshetra University, Kurukshetra**

**Scheme of Examination of UG Programme (Interdisciplinary)**  
**B.Sc. (GRAPHICS AND ANIMATION) Scheme: D in accordance with NEP**  
**2020 (Multiple Entry-Exit, Internships and Choice Based Credit System)**  
**w.e.f. Academic Session 2024-25.**

**Semester-V**

| Course Code              | Course Title                                     | Course Type | Contact Hours per Week |   |   |       | Credits | Marks              |        |    |        | Total      | Duration of Exam |
|--------------------------|--|-------------|------------------------|---|---|-------|---------|--------------------|--------|----|--------|------------|------------------|
|                          |  |             | L                      | T | P | Total |         | T                  | IA (T) | P  | IA (P) |            |                  |
| B23-GAG-501              | Rigging and Lighting                             | CC-A5       | 3                      | - | 2 | 5     | 4       | 50                 | 20     | 20 | 10     | 100        | 3 Hours          |
| B23-GAG-502              | Commercial Design                                | CC-B5       | 3                      | - | 2 | 5     | 4       | 50                 | 20     | 20 | 10     | 100        | 3 Hours          |
| B23-GAG-503              | 3D Creature Animation and Rendering              | CC-C5       | 3                      | - | 2 | 5     | 4       | 50                 | 20     | 20 | 10     | 100        | 3 Hours          |
|                          | As Available In Pool Of Subjects Approved By KUK | CC-M5 (V)   | 3                      | - | 2 | 5     | 4       | 50                 | 20     | 20 | 10     | 100        | 3 Hours          |
|                          | INTERNSHIP                                       |             |                        |   |   |       | 4       |                    |        |    |        | 100        |                  |
| <b>Total Credits :20</b> |  |             |                        |   |   |       |         | <b>Total Marks</b> |        |    |        | <b>500</b> |                  |

**Semester-VI**

| Course Code              | Course Title                                     | Course Type | Contact Hours per Week |   |   |       | Credits | Marks              |        |    |        | Total      | Duration of Exam |
|--------------------------|--|-------------|------------------------|---|---|-------|---------|--------------------|--------|----|--------|------------|------------------|
|                          |  |             | L                      | T | P | Total |         | T                  | IA (T) | P  | IA (P) |            |                  |
| B23-GAG-601              | Visual Effect                                    | CC-A6       | 3                      | - | 2 | 5     | 4       | 50                 | 20     | 20 | 10     | 100        | 3 Hours          |
| B23-GAG-602              | Gaming Technology                                | CC-B6       | 3                      | - | 2 | 5     | 4       | 50                 | 20     | 20 | 10     | 100        | 3 Hours          |
| B23-GAG-603              | UX Design  | CC-C6       | 3                      | - | 2 | 5     | 4       | 50                 | 20     | 20 | 10     | 100        | 3 Hours          |
| B23-GAG-604              | Artificial Intelligence and Cyber Security       | CC-M6       | 3                      | - | 2 | 5     | 4       | 50                 | 20     | 20 | 10     | 100        | 3 Hours          |
|                          | As Available In Pool Of Subjects Approved By KUK | CC-M7 (V)   | -                      | - | - | -     | 4       | 50                 | 20     | 20 | 10     | 100        | 3 Hours          |
| <b>Total Credits :20</b> |  |             |                        |   |   |       |         | <b>Total Marks</b> |        |    |        | <b>500</b> |                  |

**Exit Option: Bachelor in Graphics and Animation (B.Sc. Graphics And Animation) with 132 credits**

| Session: 2024-25   |  |           |               |
|--|--|-----------|---------------|
| Part A - Introduction  |  |           |               |
| Name of Programme  | B.Sc. Graphics & Animation   |           |               |
| Semester   | 5th  |           |               |
| Name of the Course   | <b>Rigging &amp; Lighting</b>  |           |               |
| Course Code  | <b>B23-GAG-501</b>   |           |               |
| Course Type  | CC-A5  |           |               |
| Level of the course  | 300-399  |           |               |
| Pre-requisite for the course (if any)  |  |           |               |
| Course Learning Outcomes (CLO)<br>After completing this course, the learner will be able to:   | CLO 1: Understanding the basics of Rigging<br>CLO 2: Study of Skeleton & Anatomy setup<br>CLO 3: Explore how to assemble the whole setup into a master rig<br>CLO 4: Understanding the different types of Lighting techniques<br>CLO 5 : To use the rigging and lighting techniques. |           |               |
| Credits  | Theory   | Practical | Total         |
|  | 3  | 1         | 4             |
| Teaching Hours per week  | 3  | 2         | 5             |
| Internal Assessment Marks  | 20   | 10        | 30            |
| End Term Exam Marks  | 50   | 20        | 70            |
| Max. Marks   | 70   | 30        | 100           |
| Examination Time   | 3 hours  | 3 hours   |               |
| Part B- Contents of the Course   |  |           |               |
| <b>Instructions for Paper- Setter:</b> The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist at least 4 parts covering entire syllabus. The examinee will be required to attempt 5 questions, selecting one question from each unit and the compulsory question. All questions will carry equal marks. |  |           |               |
| Unit   | Topics   |           | Contact Hours |
| I  | Basic Human Anatomical Structure<br>Group And Hierarchy<br>Joints, Forward Kinematics, Inverse Kinematics<br>Mirroring Joints, Reroot Skeleton, Connect/Disconnect Joints<br>Joint Orientation   |           | 11            |
| II   | Project Set up<br>Constraints<br>Deformers<br>Set Driven Key, Adding Custom Attributes<br>Connection Editor, Expression Editor, Reference Editor<br>IK Handle Tool, IK Solvers (Rotate Plane, Single Chain, Spline), IK Controls, IK Preferred Angle, Pole Vector Constraint         |           | 11            |
| III  | Anatomy of the torso, leg, arms, hands, and fingers  |           | 11            |

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|  | Biped skeleton<br>Head Rigging<br>Facial Rigging<br>Skinning, Interactive/smooth Binding, Controlling skin weight<br>Painting Skin weight & Editing skin weight  |  |
| IV   | Theory of Lighting<br>Direct Illumination, Manipulation of Lighting(effects)<br>Working on Different Types of Lighting<br>Environment Lighting<br>Interior and Exterior Lighting   | 12   |
| V  | <b>Practicals</b> <ul style="list-style-type: none"><li>○ Learn Bone Setup in Human and Cartoon Character</li><li>○ Create Controls with help of IK and FK</li><li>○ Wire Parameters</li><li>○ Skinning and binding</li><li>○ Three Point Lighting setup for object</li><li>○ Interior Lighting setup</li><li>○ Exterior Lighting</li><li>○ Facial Rigging Controls</li><li>○ Robotic Rigging</li><li>○ Animal Rig</li><li>○ Bird Wings Control Setup</li><li>○ Show reel of rigging</li></ul> | 30   |
| Total Contact Hours  |  | 75   |
| Suggested Evaluation Methods   |  |  |
| Internal Assessment: 30  |  | End Term Examination: 70                                       |
| ➤ Theory   | 20   | ➤ Theory: 50   |
| • Class Participation:   | 5  | Written Examination  |
| • Seminar/presentation/assignment/quiz/class test etc.:  | 5  |  |
| • Mid-Term Exam:   | 10   |  |
| ➤ Practicum  | 10   | ➤ Practicum 20   |
| • Class Participation:   | 5  | Lab record, Viva-Voce, write-up and execution of the practical |
| • Seminar/Demonstration/Viva-voce/Lab records etc.:  | 5  |  |
| • Mid-Term Exam:   | -  |  |
| Part C-Learning Resources  |  |  |
| Recommended Books/e-resources/LMS:   |  |  |
| <ul style="list-style-type: none"><li>○ Animation Methods-Rigging Made Easy: Rig Your First Character in Maya: David Rodriguez</li><li>○ Maya Character Rigging: Cheryl Cabrera</li><li>○ Rig IS Right! Maya Animation Rigging Concepts by Tina</li><li>○ Essential Skills in Character Rigging by Nicholas B. Zeman</li></ul> |  |  |

| Session: 2024-25   |  |           |               |
|--|--|-----------|---------------|
| Part A - Introduction  |  |           |               |
| Name of Programme  | B.Sc. Graphics & Animation   |           |               |
| Semester   | 5th  |           |               |
| Name of the Course   | Commercial Design  |           |               |
| Course Code  | B23-GAG-502  |           |               |
| Course Type  | CC-B5  |           |               |
| Level of the course  | 300-399  |           |               |
| Pre-requisite for the course (if any)  |  |           |               |
| Course Learning Outcomes (CLO)<br>After completing this course, the learner will be able to:   | CLO 1: Understanding the basics of Commercial Design.<br>CLO 2: Students will be able to Design for Commercial goods.<br>CLO 3: Understanding the different kind of commercial design.<br>CLO 4: Understanding the different types of Designing Techniques<br>CLO 5 : To design different commercial products packages |           |               |
| Credits  | Theory   | Practical | Total         |
|  | 3  | 1         | 4             |
| Teaching Hours per week  | 3  | 2         | 5             |
| Internal Assessment Marks  | 20   | 10        | 30            |
| End Term Exam Marks  | 50   | 20        | 70            |
| Max. Marks   | 70   | 30        | 100           |
| Examination Time   | 3 hours  | 3 hours   |               |
| Part B- Contents of the Course   |  |           |               |
| <b>Instructions for Paper- Setter:</b> The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist at least 4 parts covering entire syllabus. The examinee will be required to attempt 5 questions, selecting one question from each unit and the compulsory question. All questions will carry equal marks. |  |           |               |
| Unit   | Topics   |           | Contact Hours |
| I  | Commercial Design: Introduction and Scope<br>Brand and Branding Design<br>Strategy Design Process<br>Design Principal: Practice & Implement<br>Layout Designing Principals   |           | 11            |
| II   | Typography and Typeface Design<br>Types and Features of Typefaces<br>Structure and elements of Typeface<br>Leading, Kerning and Tracking   |           | 11            |
| III  | Packaging and Designing<br>Packaging Design: Process<br>Packaging Design Principal<br>Elements of Packaging Design<br>Packaging Design: Outer Packaging , Inner Packaging and Product Packaging  |           | 11            |

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|  | Boxes Design Packaging<br>Cylindrical Design Packaging  |  |
| IV   | Color Theory<br>CMYK , Lab Colors and Pantone Colors<br>Color Phycology<br>Export and Authoring: Size Colors and Fonts  | 12   |
| V  | <b>Practicals</b> <ul style="list-style-type: none"><li>○ Newspaper Design</li><li>○ Food Package Design</li><li>○ Electronic Product Package</li><li>○ Bottle Branding Design</li><li>○ Box Package Design</li><li>○ Special occasion based package</li><li>○ Typography Based package Design</li><li>○ Toy Package design</li></ul> | 30   |
| Total Contact Hours  |   | 75   |
| Suggested Evaluation Methods   |   |  |
| Internal Assessment: 30  |   | End Term Examination: 70                                       |
| ➤ Theory   | 20  | ➤ Theory: 50   |
| • Class Participation:   | 5   | Written Examination  |
| • Seminar/presentation/assignment/quiz/class test etc.:  | 5   |  |
| • Mid-Term Exam:   | 10  |  |
| ➤ Practicum  | 10  | ➤ Practicum 20   |
| • Class Participation:   | 5   | Lab record, Viva-Voce, write-up and execution of the practical |
| • Seminar/Demonstration/Viva-voce/Lab records etc.:  | 5   |  |
| • Mid-Term Exam:   | -   |  |
| Part C-Learning Resources  |   |  |
| Recommended Books/e-resources/LMS:   |   |  |
| <ul style="list-style-type: none"><li>• The New Strategic Brand Management – Advanced Insights &amp; Strategic Thinking by Jean-Noël Kapferer</li><li>• Building Strong Brands by David Aaker</li><li>• Design and Strategy A Step-by-Step Guide By Wanda Grimsgaard</li></ul> |   |  |

| Session: 2024-25   |  |               |       |
|--|--|---------------|-------|
| Part A - Introduction  |  |               |       |
| Name of Programme  | B.Sc. Graphics & Animation   |               |       |
| Semester   | 5th  |               |       |
| Name of the Course   | 3D Creature Animation and Rendering  |               |       |
| Course Code  | B23-GAG-503  |               |       |
| Course Type  | CC-C5  |               |       |
| Level of the course  | 300-399  |               |       |
| Pre-requisite for the course (if any)  |  |               |       |
| Course Learning Outcomes (CLO)<br>After completing this course, the learner will be able to:   | CLO 1: Understanding the basics of 3d Creature Animation<br>CLO 2: Students will be able to Animate different Creatures<br>CLO 3: Understanding the Setup of Animation Keys and In-betweens<br>CLO 4: Understanding the different types of Animation Techniques and able to handle the Speed of movement.<br>CLO 5 : Understand 3D animation softwares.  |               |       |
| Credits  | Theory   | Practical     | Total |
|  | 3  | 1             | 4     |
| Teaching Hours per week  | 3  | 2             | 5     |
| Internal Assessment Marks  | 20   | 10            | 30    |
| End Term Exam Marks  | 50   | 20            | 70    |
| Max. Marks   | 70   | 30            | 100   |
| Examination Time   | 3 hours  | 3 hours       |       |
| Part B- Contents of the Course   |  |               |       |
| <b>Instructions for Paper- Setter:</b> The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist at least 4 parts covering entire syllabus. The examinee will be required to attempt 5 questions, selecting one question from each unit and the compulsory question. All questions will carry equal marks. |  |               |       |
| Unit   | Topics   | Contact Hours |       |
| I  | 3D Animation: Types and Techniques<br>Key Frames: Add & Blocking , Move & Modify<br>Key Frame Animation : Ball Bounce<br>Graph for Animation: Types and features<br>Dope Sheet: Setup and Edit<br>Connection Editor, Expression Editor, Reference Editor<br>Camera: Setup, Modify and Animation<br>FPS: Add & Modify<br>Time line: Elements and Controls | 11            |       |
| II   | Difference between Animation & Motion<br>Mass & Weight<br>Squash & Stretch: Ball, Hand, Arms and Face<br>Arc: Box Bounce, Pendulum   | 11            |       |

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|  | Timing and Spacing: Leaf Animation<br>Morphing: Face Animation & Shape Morph<br>Eyes Blinking and Movement  |  |
| III  | Anticipation: Walk, and Run<br>Secondary Action: Pulling Chain<br>Follow Through and Overlapping Animation: Tail<br>Slow in & Slow Out: Kick & Punch<br>Facial Animation:<br>Straight Ahead Action: Action with Sword   | 11   |
| IV   | Rendering: Concept & Scope<br>Types of Rendering: Maya Software Render, Maya Hardware 2.0 and Arnold Rendering<br>Rendering: Process & Settings<br>Shadow Pass Rendering and Lighting Pass Rendering  | 12   |
| V  | <b>Practicals</b> <ul style="list-style-type: none"><li>○ Rubber Ball Bounce / Iron Ball Bounce</li><li>○ Leaf Falling Animation</li><li>○ Face Expression with morph and without morph</li><li>○ Normal Walk Cycle / Funny Walk Cycle</li><li>○ Double Jump</li><li>○ Chain Pulling Animation</li><li>○ Punch Action</li><li>○ Action with Gadget</li><li>○ Frame Rendering</li><li>○ Sequence Rendering</li><li>○ Video Rendering</li></ul> | 30   |
| Total Contact Hours  |   | 75   |
| Suggested Evaluation Methods   |   |  |
| Internal Assessment: 30  |   | End Term Examination: 70                                       |
| ➤ Theory   | 20  | ➤ Theory: 50   |
| • Class Participation:   | 5   | Written Examination  |
| • Seminar/presentation/assignment/quiz/class test etc.:  | 5   |  |
| • Mid-Term Exam:   | 10  |  |
| ➤ Practicum  | 10  | ➤ Practicum 20   |
| • Class Participation:   | 5   | Lab record, Viva-Voce, write-up and execution of the practical |
| • Seminar/Demonstration/Viva-voce/Lab records etc.:  | 5   |  |
| • Mid-Term Exam:   | -   |  |
| Part C-Learning Resources  |   |  |
| Recommended Books/e-resources/LMS: <ul style="list-style-type: none"><li>○ Autodesk Maya 2018 Basics Guide by Kelly L. Murdock</li><li>○ The Animator's Survival Kit</li><li>○ Understanding 3-D animation using Maya John Edgar Park</li><li>○ Essential Skills in Character Rigging by Nicholas B. Zeman</li><li>○ 3D Animation Essentials (Essentials (John Wiley)</li><li>○ Disney Animation: The Illusion of Life</li></ul> |   |  |



- The Animator's Survival Kit by Richard E. Williams
- 3D Animation for the Raw Beginner Using Maya Roger King
- 3D Art Essentials: The Fundamentals of 3D Modeling, Texturing, and Animation by Ami Chopine
- The Art of 3D: Computer Animation and Effects
- Character Animation in 3D: Use Traditional Drawing Techniques to Produce Stunning CGI Animation Steve Roberts
- Mastering Lumion 3D by Ciro Cardoso
- Animated Performance: Bringing Imaginary Animal, Human and Fantasy Characters to Life Nancy Beiman

| Session: 2024-25   |  |               |       |
|--|--|---------------|-------|
| Part A - Introduction  |  |               |       |
| Name of Programme  | B.Sc. Graphics & Animation   |               |       |
| Semester   | 6th  |               |       |
| Name of the Course   | Visual Effect  |               |       |
| Course Code  | B23-GAG-601  |               |       |
| Course Type  | CC-A6  |               |       |
| Level of the course  | 300-399  |               |       |
| Pre-requisite for the course (if any)  |  |               |       |
| Course Learning Outcomes (CLO)<br>After completing this course, the learner will be able to:   | CLO 1: To Learn Techniques of Motion Graphics<br>CLO 2: Understand the basic knowledge of Motion Production<br>CLO 3: Know about the Techniques and function of Motion Graphics<br>CLO 4: To Gain Knowledge of Motion Graphics Stages<br>CLO 5 : Demonstrate the different motions using After Effect Software |               |       |
| Credits  | Theory   | Practical     | Total |
|  | 3  | 1             | 4     |
| Teaching Hours per week  | 3  | 2             | 5     |
| Internal Assessment Marks  | 20   | 10            | 30    |
| End Term Exam Marks  | 50   | 20            | 70    |
| Max. Marks   | 70   | 30            | 100   |
| Examination Time   | 3 hours  | 3 hours       |       |
| Part B- Contents of the Course   |  |               |       |
| <b>Instructions for Paper- Setter:</b> The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist at least 4 parts covering entire syllabus. The examinee will be required to attempt 5 questions, selecting one question from each unit and the compulsory question. All questions will carry equal marks. |  |               |       |
| Unit   | Topics   | Contact Hours |       |
| I  | Adobe After Effects: Interface, Tools and Menu<br>Motion Graphics History.<br>Motion Graphics and Functions and Scope<br>Motion Graphics Elements: Colors, Shapes, Surfaces, Typography, and Transitions.  | 11            |       |
| II   | Key Frame Types: Liner, Auto Bezier, Continue Bezier, Bezier and Hold<br>Key framing: Adding, Modify, Change and Move & Remove<br>Graph Edition: Types and Features<br>Motion: Icons and Typography<br>Information Graphics Motion<br>Animated Titles  | 11            |       |
| III  | Social media Advertisements<br>Logo Animation<br>UI Animation  | 11            |       |

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|   | Product Animation / Motion Advertisements<br>Cinematography Motion   |  |
| IV  | Program Intro Graphics<br>Header Graphics Ribbon Motion<br>Footer Motion Graphics<br>Video Package of Explainer Video  | 12   |
| V   | <b>Practicals</b> <ul style="list-style-type: none"><li>○ Typographic Motion</li><li>○ Icon Based Motion</li><li>○ Animated Tittles</li><li>○ Social Media Advertisement Motion</li><li>○ Logo Motion</li><li>○ UI Motion</li><li>○ Cinematic Video Motion</li><li>○ Explainer Video</li><li>○ Motion Advertisements</li><li>○ Television Broadcaster Graphics Interface</li></ul> | 30   |
| Total Contact Hours   |  | 75   |
| Suggested Evaluation Methods  |  |  |
| Internal Assessment: 30   |  | End Term Examination: 70                                       |
| ➤ Theory  | 20   | ➤ Theory: 50   |
| •Class Participation:   | 5  | Written Examination  |
| •Seminar/presentation/assignment/quiz/class test etc.:  | 5  |  |
| •Mid-Term Exam:   | 10   |  |
| ➤ Practicum   | 10   | ➤ Practicum 20   |
| •Class Participation:   | 5  | Lab record, Viva-Voce, write-up and execution of the practical |
| •Seminar/Demonstration/Viva-voce/Lab records etc.:  | 5  |  |
| •Mid-Term Exam:   | -  |  |
| Part C-Learning Resources   |  |  |
| Recommended Books/e-resources/LMS: <ul style="list-style-type: none"><li>○ Adobe After Effects Classroom in a Book</li><li>○ After Effects - Visual Effects and Compositing</li><li>○ After Effects Apprentice</li><li>○ Design for Motion: Fundamentals and Techniques of Motion Design</li><li>○ Design for Motion: Fundamentals and Techniques of Motion Design by Austin Shaw</li><li>○ Motion Graphic Design: Applied History and Aesthetics by Jon Krasner</li><li>○ Creating Motion Graphics with After Effects by Chris Meyer, Trish Meyer</li><li>○ Motion Graphics: 100 Design Projects You Can't Miss by Shao Qiang Wang</li></ul> |  |  |

| Session: 2024-25   |   |           |               |
|--|---|-----------|---------------|
| Part A - Introduction  |   |           |               |
| Name of Programme  | B.Sc. Graphics & Animation  |           |               |
| Semester   | 6th   |           |               |
| Name of the Course   | Gaming Technology   |           |               |
| Course Code  | B23-GAG-602   |           |               |
| Course Type  | CC-B6   |           |               |
| Level of the course  | 300-399   |           |               |
| Pre-requisite for the course (if any)  |   |           |               |
| Course Learning Outcomes (CLO)<br>After completing this course, the learner will be able to:   | CLO 1: To Learn Core Game Design Principles<br>CLO 2: Able to Create Game Design Documents (GDDs)<br>CLO 3: Learn the different Techniques of Game Level Design and Game Modeling<br>CLO 4: To Gain Knowledge of Game Engine for Developing Games<br>CLO 5 : To prepare different characters, props and assets for a game |           |               |
| Credits  | Theory  | Practical | Total         |
|  | 3   | 1         | 4             |
| Teaching Hours per week  | 3   | 2         | 5             |
| Internal Assessment Marks  | 20  | 10        | 30            |
| End Term Exam Marks  | 50  | 20        | 70            |
| Max. Marks   | 70  | 30        | 100           |
| Examination Time   | 3 hours   | 3 hours   |               |
| Part B- Contents of the Course   |   |           |               |
| <b>Instructions for Paper- Setter:</b> The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist at least 4 parts covering entire syllabus. The examinee will be required to attempt 5 questions, selecting one question from each unit and the compulsory question. All questions will carry equal marks. |   |           |               |
| Unit   | Topics  |           | Contact Hours |
| I  | Introduction to 3d Gaming Design<br>Overview of Mobile Gaming<br>Game Mechanics<br>Game Development Process<br>Game Genres and their characteristics<br>Game Design principles<br>Game Design Documents GDD<br>3D Game Design Concept and terminology   |           | 11            |
| II   | Concept of Level Design<br>Level design techniques<br>Game ready modeling techniques<br>Game Environment Design<br>Game Props and asset creation  |           | 11            |

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|   | Concept of Gamification   |  |
| III   | Texture creation and editing techniques<br>Material creation and shaders<br>PBR (Physically-Based Rendering) workflows<br>Texture baking and atlasing<br>Lighting techniques for game environments  | 11   |
| IV  | Introduction to game engines<br>Game engine interface and workflow<br>Importing and organizing assets<br>Scene setup and camera management<br>Role of Sound Design in Games: Sound Effects & Foley Art<br>Game UI and UX  | 12   |
| V   | <b>Practicals</b> <ul style="list-style-type: none"><li>○ Game Design Documents GDD</li><li>○ Level Design</li><li>○ Environment Design with texture</li><li>○ Game Props Design and textures</li><li>○ Assets Design with texture</li><li>○ Game Character Design</li><li>○ Textured Character Design</li><li>○ Scene Setup in Game Engine</li><li>○ Final Output with sound</li></ul> | 30   |
| Total Contact Hours   |   | 75   |
| Suggested Evaluation Methods  |   |  |
| Internal Assessment: 30   |   | End Term Examination: 70                                       |
| ➤ Theory  | 20  | ➤ Theory: 50   |
| •Class Participation:   | 5   | Written Examination  |
| •Seminar/presentation/assignment/quiz/class test etc.:  | 5   |  |
| •Mid-Term Exam:   | 10  |  |
| ➤ Practicum   | 10  | ➤ Practicum 20   |
| •Class Participation:   | 5   | Lab record, Viva-Voce, write-up and execution of the practical |
| •Seminar/Demonstration/Viva-voce/Lab records etc.:  | 5   |  |
| •Mid-Term Exam:   | -   |  |
| Part C-Learning Resources   |   |  |
| Recommended Books/e-resources/LMS:  |   |  |
| <ul style="list-style-type: none"><li>○ The Art of Game Design: A Book of Lenses by Jesse Schell</li><li>○ Rules of Play: Game Design Fundamentals by Katie Salen Tekinbas and Eric Zimmerman</li><li>○ Game Design Workshop: A Playcentric Approach to Creating Innovative Games by Elizabeth Harstad</li><li>○ Game Engine Architecture by Jason Gregory</li><li>○ Unreal Engine 5 Essential Training by Tom Looman</li><li>○ Unity Game Development Cookbook by Will Goldstone:</li><li>○ Learning Blender by Mike Pan</li></ul> |   |  |

| Session: 2024-25   |   |               |       |
|--|---|---------------|-------|
| Part A - Introduction  |   |               |       |
| Name of Programme  | B.Sc. Graphics & Animation  |               |       |
| Semester   | 6th   |               |       |
| Name of the Course   | UX Design   |               |       |
| Course Code  | B23-GAG-603   |               |       |
| Course Type  | CC-C6   |               |       |
| Level of the course  | 300-399   |               |       |
| Pre-requisite for the course (if any)  |   |               |       |
| Course Learning Outcomes (CLO)<br>After completing this course, the learner will be able to:   | CLO 1: To Learn Techniques of UX design<br>CLO 2: Understand the basic knowledge of digital tools<br>CLO 3: Know about the Techniques and function of prototypes<br>CLO 4: To Gain Knowledge of wire framing<br>CLO 5 : To understand the problem and proposed solution   |               |       |
| Credits  | Theory  | Practical     | Total |
|  | 3   | 1             | 4     |
| Teaching Hours per week  | 3   | 2             | 5     |
| Internal Assessment Marks  | 20  | 10            | 30    |
| End Term Exam Marks  | 50  | 20            | 70    |
| Max. Marks   | 70  | 30            | 100   |
| Examination Time   | 3 hours   | 3 hours       |       |
| Part B- Contents of the Course   |   |               |       |
| <b>Instructions for Paper- Setter:</b> The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist at least 4 parts covering entire syllabus. The examinee will be required to attempt 5 questions, selecting one question from each unit and the compulsory question. All questions will carry equal marks. |   |               |       |
| Unit   | Topics  | Contact Hours |       |
| I  | Concept of UX Design<br>Origin and Development of UX / UI Design<br>Process of UX Design: Product Definition, Product Research, Analysis, Design, Validation (Testing)<br>8 Stages: Project Definition and Scope, Understanding the problem, UX Research, Ideation (Sketching and low fidelity prototyping), High fidelity mockups and prototype, Usability Testing, Design handoff, Quality Assurance or UX Audit. | 11            |       |
| II   | Elements of User Experience Design<br>Functional Layout & Interaction design<br>UX Principles: Doherty Threshold, Occam's Razor, Pareto Principle, Postel's Law, Tesler's Law<br>Gestalt Principles<br>UX Research Methodology  | 11            |       |
| III  | Principles of UI Design<br>Types of UI Design<br>Concept of User Interface Design (UI)  | 11            |       |

|  |   |  |
|--|---|--|
|  | Scope of Interface Design<br>Elements of UI Design: Input Controls, Navigation Components, Informational Components, Containers.<br>Concept of Microcopy  |  |
| IV   | User Interface of UI Design Software ( <b>FIGMA</b> )<br>Add and Edit Content: Frames, Shapes, Text, Masking, Image, Colour, Style, Components, Constraints<br>Prototyping: Process and linking<br>Sharing and Exporting<br>Concept of Wireframing: low fidelity and high fidelity  | 12   |
| V  | <b>Practicals</b> <ul style="list-style-type: none"><li>○ Layout Design: Low fidelity</li><li>○ Working with Text and Fonts</li><li>○ Color and Gradients</li><li>○ Work with Mask</li><li>○ Button design</li><li>○ Icon Design</li><li>○ Working with Grid</li><li>○ Layout Design: High fidelity</li><li>○ Interaction Screen Design</li><li>○ Web Screen Design</li></ul> | 30   |
| <b>Total Contact Hours</b>   |   | <b>75</b>  |
| <b>Suggested Evaluation Methods</b>  |   |  |
| <b>Internal Assessment: 30</b>   |   | <b>End Term Examination: 70</b>                                |
| ➤ <b>Theory</b>  | <b>20</b>   | ➤ <b>Theory:</b> <b>50</b>                                     |
| •Class Participation:  | 5   | Written Examination  |
| •Seminar/presentation/assignment/quiz/class test etc.:   | 5   |  |
| •Mid-Term Exam:  | 10  |  |
| ➤ <b>Practicum</b>   | <b>10</b>   | ➤ <b>Practicum</b> <b>20</b>                                   |
| •Class Participation:  | 5   | Lab record, Viva-Voce, write-up and execution of the practical |
| •Seminar/Demonstration/Viva-voce/Lab records etc.:   | 5   |  |
| •Mid-Term Exam:  | -   |  |
| <b>Part C-Learning Resources</b>   |   |  |
| <b>Recommended Books/e-resources/LMS:</b> <ul style="list-style-type: none"><li>○ The Essential Guide to User Interface Design an Introduction to GUI Design Principles and Techniques, Third Edition by Wilbert O. Galitz, Wiley Publishing, Inc.</li><li>○ The Elements of Graphic Design, Second Edition by Alexw. White, Published by Allworth Press</li><li>○ A Designer’s Research Manual, Second Edition by Jenn + Ken Visocky O’Grady</li><li>○ Adobe Illustrator CC, Classroom in a Book, The official training workbook from Adobe by Brian Wood, ADOBE PRESS</li><li>○ UI Design with Adobe Illustrator by Rick Moore, ADOBE PRESS</li><li>○ Adobe XD in CC,Classroom in a Book, The official training workbook from Adobe By Brian Wood, ADOBE PRESS</li></ul> |   |  |

| Session: 2024-25   |   |           |               |
|--|---|-----------|---------------|
| Part A - Introduction  |   |           |               |
| Name of Programme  | B.Sc. Graphics & Animation  |           |               |
| Semester   | 6 <sup>th</sup>   |           |               |
| Name of the Course   | Artificial Intelligence and Cyber Security  |           |               |
| Course Code  | B23-GAG -604  |           |               |
| Course Type  | CC-M6   |           |               |
| Level of the course  | 300-399   |           |               |
| Pre-requisite for the course (if any)  |   |           |               |
| Course Learning Outcomes (CLO)<br>After completing this course, the learner will be able to:   | CLO 1: To help learners to understand the world of AI and its applications<br>CLO 2 :To understand the basics of intelligent agents and learning types<br>CLO 3 :To under the concept of Information Security and CIA traid.<br>CLO 4 : To about network security and various security techniques.<br>CLO 5: To learn about various application of AI in Graphics Industry. |           |               |
| Credits  | Theory  | Practical | Total         |
|  | 3   | 1         | 4             |
| Teaching Hours per week  | 3   | 2         | 5             |
| Internal Assessment Marks  | 20  | 10        | 30            |
| End Term Exam Marks  | 50  | 20        | 70            |
| Max. Marks   | 70  | 30        | 100           |
| Examination Time   | 3 hours   | 3 hours   |               |
| Part B- Contents of the Course   |   |           |               |
| <b>Instructions for Paper- Setter:</b> The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist at least 4 parts covering entire syllabus. The examinee will be required to attempt 5 questions, selecting one question from each unit and the compulsory question. All questions will carry equal marks. |   |           |               |
| Unit   | Topics  |           | Contact Hours |
| I  | Artificial Intelligence :Evolution, Brief history & Definition<br>Fundamental, Process, Features, Components & Interaction Types of AI: Capabilities and Limitation<br>Machine Learning: Introduction & Classification<br>Knowledge representation techniques<br>Neural Networks: ANN, RNN and CN   |           | 11            |
| II   | Introduction to NLP , Introduction to robotics; Applications of AI in robotics, Prompts: Phrasing and Structure<br>AI Applications in Design Industry: Pre-Production , Production and Post-production  |           | 11            |
| III  | Information Security : Concept, Need, Types<br>Security Principles, Security Attacks  |           | 11            |



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|--|--|--|
|  | model for network security<br>Basic cryptography: Encryption and Decryption, Symmetric and Asymmetric  |  |
| IV   | Identification and Authentication: Goals, Requirements<br>Machine Authentication and Mechanism<br>Two Stage Authentication<br>Network Security: Threats, Eavesdropping, Spoofing,<br>Security Techniques: Firewalls, Intrusion detection, VPN<br>Legal Aspects of Security, Privacy and Ethics   | 12   |
| V  | <b>Practicals:</b> <ul style="list-style-type: none"><li>○ Generate Article on particular topic by using AI tool</li><li>○ Generate image via AI Prompt</li><li>○ Remove Background with Help of AI</li><li>○ Image Enhancement by using AI tools</li><li>○ Create a story with Help of Prompts</li><li>○ Create a Script with Help of Prompts</li><li>○ Create a storyboard using AI Image</li><li>○ Colour Pairing and Font Pairing Tools of AI</li><li>○ Use AI to Prompt to Convert Image to Poster</li><li>○ Create Sound for Production by using AI tools</li><li>○ Checklist for Reporting Cyber Crime at Cyber Cell</li><li>○ Demonstration of Email Fishing Attack</li><li>○ Use of VPN</li></ul> | 30   |
| Total Contact Hours  |  | 75   |
| Suggested Evaluation Methods   |  |  |
| Internal Assessment: 30  |  | End Term Examination: 70                                       |
| ➤ Theory   | 20   | ➤ Theory: 50   |
| • Class Participation:   | 5  | Written Examination  |
| • Seminar/presentation/assignment/quiz/class test etc.:  | 5  |  |
| • Mid-Term Exam:   | 10   |  |
| ➤ Practicum  | 10   | ➤ Practicum 20   |
| • Class Participation:   | 5  | Lab record, Viva-Voce, write-up and execution of the practical |
| • Seminar/Demonstration/Viva-voce/Lab records etc.:  | 5  |  |
| • Mid-Term Exam:   | -  |  |
| Part C-Learning Resources  |  |  |
| Recommended Books/e-resources/LMS:   |  |  |
| <ul style="list-style-type: none"><li>○ “Artificial Intelligence: A Modern Approach” by Stuart Russell and Peter Norvig</li><li>○ “Deep Learning” by Ian Goodfellow, Yoshua Bengio, and Aaron Courville</li><li>○ “Robotics: Modelling, Planning and Control” by Bruno Siciliano and Lorenzo Sciavicco</li><li>○ “AI Superpowers: China, Silicon Valley, and the New World Order” by Kai-Fu Lee</li><li>○ New Media : A critical Introduction, Martin Lister, Jon Dovey, Seth Giddings,Ian Grant, Kieran Kelly, Routledge, Tayolor &amp; Francis Group, 2007</li><li>○ Mapping New Media in India, Sunita Naryanan, Sage Publication, 2017</li></ul> |  |  |