K.R. MANGALAM UNIVERSITY
THE COMPLETE WORLD OF EDUCATION

SCHOOL OF ARCHITECTURE AND DESIGN (SOAD)

Programme Handbook

(Programme Study and Evaluation Scheme)

Bachelor of Design (Hons. / Hons. with Research) In Game Design and Animation

Programme Code: 86

FOUR YEAR UNDERGRADUATE PROGRAMME

As per National Education Policy 2020
(Multiple Entry and Exit in Academic Programmes)

(with effect from 2025-29 session)

Contents

1.Preface

The outcome-based curriculum strengthens students' experiences and prepares the students for both academia and employability, sustainability, and life-long learning.

The program reflects the promise to accomplish learning outcomes by studying the courses. The graduate attributes encompass values related to well-being, emotional stability, critical thinking, social justice, and also skills for entrepreneurship.

The redesigned curriculum focuses on the multi-disciplinary nature of the field of design with emphasis on core design subjects with skills to represent the process of design graphically. Another important part is the aspect of realizing the concept and graphical representation into a workable design. Students are exposed to research and hands-on project-based education with active studio sessions. Visiting faculty and external examiners are professionals and academicians chosen from the field of design. Students develop their design with input from highly driven teams of faculty members and working professionals.

The K.R. Mangalam University hopes that the outcome-based curriculum will help students realize their careers as informed, sensitive and creative architects and designers.

This curriculum enhances students' educational experiences and equips them with the necessary skills for academic success, employability, sustainability, and lifelong learning.

Each programme demonstrates its commitment to achieving the desired learning outcomes through the study of its respective courses. Graduate qualities contain ideals pertaining to well-being, emotional resilience, critical analysis, social equity, and abilities for entrepreneurship.

The revamped curriculum prioritises the interdisciplinary aspect of Game design and animation, with a particular emphasis on fundamental design subjects and the ability to visually depict the creative process. An additional crucial step involves translating the concept and graphical representation into feasible thoughts. Students receive a comprehensive education that includes study and practical project-based learning, facilitated by interactive studio sessions. Visiting faculty and external examiners are individuals who are experts and scholars selected from the Game design and animation field. Students collaborate with a motivated team of faculty members and industry experts to enhance their design.

The K.R. Mangalam University anticipates that the outcome-based curriculum will enable students to achieve their career aspirations as knowledgeable, empathetic, and innovative architects and designers.

K.R. Mangalam University meticulously plans all of its programmes with a strong focus on the welfare and achievement of its students. The university has adopted an outcome-based curriculum for all of its programmes. The objective of this method is to offer a curriculum that prioritizes the needs and interests of the students, with a clear focus on attaining specified desired results. The aim is to organise educational experiences in a way that focuses more on achieving specific outcomes.

The outcome-based curriculum improves students' educational experiences and provides them with the essential skills needed for success in academia, employability, sustainability, and lifelong learning.

Every programme shows a dedication to attaining the intended learning objectives by studying its specific courses. The graduate qualities cover a variety of values related to well-being, emotional resilience, analytical

thinking, social equity, and abilities for business innovation. The updated curriculum prioritises the multidisciplinary aspect of the art profession, specifically highlighting fundamental art & design disciplines and the development of skills linked to graphical representation of the creative process. Another vital step entails transforming the abstract concept and visual depiction into a practical and achievable art practice. Students are given chances to actively participate in research and project-based learning through interactive studio sessions. Visiting professors and external examiners are experts chosen for their professional qualifications and academic background in the subject of Fine Arts, demonstrating expertise and experience. The Game design and animation creation process entails a cooperative effort between students and a specialised team of academic members and industry experts who offer essential advice and guidance.

The K.R. Mangalam University aims to enhance students' journey towards becoming well-informed, compassionate and inventive professionals in the realm of architecture and design by implementing an outcome-based curriculum.

K.R. Mangalam University was founded in 2013 by Mangalam EduGate, a company incorporated under Section 25 of the Companies Act, 1956.

Uniqueness of KRMU

i. Enduring legacy of providing education to high achievers who demonstrate leadership in diverse fields.
ii. Protective and nurturing environment for teaching, research, creativity, scholarship, social and economic justice.

Educational Objectives

i. To impart undergraduate, postgraduate and Doctoral education in identified areas of higher education.
ii. To undertake research programmes with an industrial interface.
iii. To integrate its growth with the global needs and expectations of the major stake holders through teaching, research, exchange & collaborative programmes with foreign, Indian Universities/Institutions and MNCs.
iv. To act as a nodal center for the transfer of technology to the industry.

To provide job-oriented professional education to the student community with a particular focus on Haryana.

2. NEP-2020: Important features integrated in the curriculum

K.R. Mangalam University has adopted the National Education Policy NEP-2020 to establish a holistic and multidisciplinary undergraduate education environment, aiming to equip our students for the demands of the 21st century. Following the guidelines of NEP-2020 regarding curriculum structure and duration of the undergraduate programme, we now offer a Four-Year Undergraduate Programme with multiple entry and exit points, along with re-entry options, and relevant certifications.

- **UG Certificate** after completing 1 year (2 semesters with the required number of credits) of study, and an additional vocational course/internship of 4 credits during the summer vacation of the first year.

• **UG Diploma** after completing 2 years (4 semesters with the required number of credits) of study, and an additional vocational course/internship of 4 credits during the summer vacation of the second year.
• **Bachelor's Degree** after completing 3-year (6 semesters with the required number of credits) programme of study.
• **4-year Bachelor's Degree (Honors)** with the required number of credits after an eight semesters programme of study.
• Students who secure 75% marks and above in the first six semesters and wish to undertake research at the undergraduate level can choose a research stream in the fourth year. Upon completing a research project in their major area(s) of study in the 4th year, a student will be awarded **Bachelor's Degree (Honors with Research)**.

The advantage of pursuing a 4-year Bachelor's degree programme with Honors/Honors with Research is that the Master's degree will be of one year duration. Also, a 4-year degree programme will facilitate admission to foreign universities.

S. No.	Broad Categories of Courses	Minimum Credit Requirement for Four Year UG Program
1	Major (Core)	80
2	Minor	32
3	Multidisciplinary	09
4	Ability Enhancement Course (AEC)	08
5	Skill Enhancement Course (SEC)	09
6	Value-Added Course (VAC)	06-08
7	Summer Internship	02-04
8	Research Project/Dissertation	12
9	Total	160

1.1. Categories of Courses

Major: The major would provide the opportunity for a student to pursue in-depth study of a particular subject or discipline.

Minor: Students will have the option to choose courses from disciplinary/interdisciplinary minors and skill-based courses. Students who take a sufficient number of courses in a discipline or an interdisciplinary area of study other than the chosen major will qualify for a minor in that discipline or in the chosen interdisciplinary area of study.

Students have multiple minor streams to choose from. They can select one minor stream from the available options, which will be pursued for the entire duration of the programme.

Multidisciplinary (Open Elective): These courses are intended to broaden intellectual experience and form part of liberal arts and science education. These introductory-level courses may be related to any of the broad disciplines given below:

- Natural and Physical Sciences
- Mathematics, Statistics, and Computer Applications
- Library, Information, and Media Sciences

- Commerce and Management
- Humanities and Social Sciences

A diverse array of Open Elective Courses, distributed across different semesters and aligned with the categories, is offered to the students. These courses enable students to expand their perspectives and gain a holistic understanding of various disciplines. Students can choose courses based on their areas of interest.

Ability Enhancement Course (AEC): Students are required to achieve competency in a Modern Indian Language (MIL) and in the English language with special emphasis on language and communication skills. The courses aim at enabling the students to acquire and demonstrate the core linguistic skills, including critical reading and expository and academic writing skills, that help students articulate their arguments and present their thinking clearly and coherently and recognize the importance of language as a mediator of knowledge and identity.

Skills Enhancement Courses (SEC): These courses are aimed at imparting practical skills, hands-on training, soft skills, etc., to enhance the employability of students.

Value-Added Course (VAC): The Value-Added Courses (VAC) are aimed at inculcating Humanistic, Ethical, Constitutional and Universal human values of truth, righteous conduct, peace, love, non-violence, scientific and technological advancements, global citizenship values and life-skills falling under below given categories:

- Understanding India
- Environmental Science/Education
- Digital and Technological Solutions
- Health & Wellness, Yoga education, Sports, and Fitness

Research Project / Dissertation: Students choosing a 4-Year Bachelor's degree (Honors with Research) are required to take up research projects under the guidance of a faculty member. The students are expected to complete the Research Project in the eighth semester. The research outcomes of their project work may be published in peer-reviewed journals or may be presented in conferences /seminars or may be patented.

3. University Vision and Mission

3.1 Vision

K.R. Mangalam University aspires to become an internationally recognized institution of higher learning through excellence in interdisciplinary education, research, and innovation, preparing socially responsible life-long learners and contributing to nation-building.

3.2 Mission

- Foster employability and entrepreneurship through futuristic curriculum and progressive pedagogy with cutting-edge technology
- Instill notion of lifelong learning through stimulating research, Outcomes-based education, and innovative thinking
- Integrate global needs and expectations through collaborative programs with premier universities, research centres, industries, and professional bodies.
- Enhance leadership qualities among the youth having understanding of ethical values and environmental realities

4. About the School

The **School of Architecture & Design (SOAD)** offers a robust, interdisciplinary education, providing students with hands-on experience through **experiential and project-based learning**. The curriculum is designed to foster innovation and technical proficiency across various design fields.

SOAD offers seven key programs:

1. **Bachelor of Architecture (B.Arch)** – A five-year program that develops visionary architects with a strong foundation in design, construction, and environmental sustainability.
2. **Bachelor of Design (B.Des) in Fashion Design** – A four-year program focused on fostering creativity and technical skills in fashion, preparing students for the dynamic fashion industry.
3. **Bachelor of Design (B.Des) in Interior Design** – Prepares students to design functional and aesthetically pleasing interior spaces through a combination of creativity, technical knowledge, and practical applications.
4. **Bachelor of Design (B.Des) in Textile Design** – Emphasizes innovative textile creation with an emphasis on sustainability and traditional craftsmanship.
5. **Bachelor of Fine Arts (B.F.A)** – Explores various visual arts disciplines such as painting, sculpture, and graphic arts.
6. **Bachelor of Design (B.Des) in Game Design & Animation** – A specialized program focused on designing interactive games and animations, merging creative storytelling with technical skills.
7. **Bachelor of Design (B.Des) in UX UI & Interaction Design** – Concentrates on creating user-centric digital solutions, emphasizing user experience (UX), user interface (UI), and interaction design.

SOAD emphasizes **experiential learning** through **project-based education**, giving students practical exposure to real-world challenges. This is further enhanced through **site visits, study tours, guest lectures**, and **industry integration**, ensuring students gain valuable insights and experience in their respective fields. The school

maintains strong industry connections, enabling students to engage with leading professionals and firms in architecture, design, and related industries.

5. School Vision and Mission

Vision: To be a leading institution that develops innovative and sustainable design thinkers who shape the future of Architecture and Design globally.

Mission:

- Provide a comprehensive structured learning experience that develops strong cognitive thinking and skills in the field of architecture and design.
- Foster a collaborative and inclusive learning environment that encourages creativity and critical thinking.
- Promote sustainable and ethical design practices that address global and local challenges.
- Instill a strong foundation of ethical principles, ensuring graduates act with integrity and social responsibility in their professional endeavours.
- Engage with the community and industry to advance the role of architecture and design in society.

6. About the Programme

The Bachelor of Design Game Design and Animation programme at K.R. Mangalam University is a 4-year undergraduate programme curated to equip students with the skills and knowledge required in the Game Design and Animation industry. Based on the principles of design, creativity, and development of human-centred design, the programme covers essential topics such as Game design, Game Level Design, Animation, Game Programming, and Game VFX. Through the programme, we encourage our students to explore endless opportunities in app design, gamification, and all sorts of designing techniques that can take the Game and Animation from scratch to the skies.

The Bachelor of Design in Game Design and Animation Design program is designed to equip students with both theoretical knowledge and practical skills, ensuring they are prepared for the fast-evolving design industry. Key highlights of the program include:

- **Immersive Curriculum**: A comprehensive blend of theoretical learning and hands-on experience, with a focus on the latest industry trends. The curriculum covers key areas such as Game design, 3d Modelling, Animation, AR/VR, Game Development, and Game VFX.
- **Expert Faculty**: Learn from a team of experienced educators and industry professionals who bring real-world insights and guidance to the classroom.
- **Cutting-edge Facilities**: Access to state-of-the-art design studios, workshops, and computer labs, all equipped with advanced software for Game Design and Animation.
- **Industry Exposure**: Students benefit from collaborations, internships, field trips, guest lectures, and workshops conducted by leading industry experts.

- **Portfolio Development**: Receive personalized guidance on crafting a compelling portfolio to showcase your design expertise.
- **Internship and Placement Support**: Leverage strong industry connections to gain access to internship opportunities and job placements.
- **Global Exposure**: Experience international learning through a paid two-week summer school program at a prestigious European university, offering a global perspective on design.

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6.1 Definitions

- **Programme Outcomes (POs)**
  Programme Outcomes are statements that describe what the students are expected to know and would be able to do upon graduation. These relate to the skills, knowledge, and behaviour that students acquire through the programme.
- **Programme Specific Outcomes (PSOs)**
  Programme Specific Outcomes are statements about the various levels of knowledge specific to the given program which the student would be acquiring during the program.
- **Programme Educational Objectives (PEOs)**
  Programme Educational Objectives of a degree programme are the statements that describe the expected achievements of graduates in their career, and what the graduates are expected to perform and achieve during the first few years after graduation.
- **Credit**
  Credit refers to a unit of contact hours/ tutorial hour per week or 02 hours of Lab/ Practical work per week.
- **Studio Course**
  Studio courses are practical, hands-on classes where students engage in design projects, allowing them to apply theoretical knowledge in real-world scenarios. These courses emphasize creativity, collaboration, and iterative design processes, often culminating in tangible outcomes like models or design presentations.
- **Multi-Entry & Multi-Exit**
  The multi-entry, multi-exit system allows students to enter and exit their academic programs at various points, depending on their personal and professional circumstances. This flexibility enables students to earn qualifications such as certificates or diplomas at different stages of their education while providing options for re-entry to complete their degrees.

6.2 Programme Educational Objectives (PEO*)*

PEO 1: Human Values and Immersive Storytelling: Graduates will create games and animations that reflect human values, ethical considerations, and cultural diversity, crafting immersive experiences that engage and inspire global audiences.

PEO 2: Career Growth in Creative Industries: Graduates will pursue successful careers in the gaming, animation, and digital media industries by continuously evolving their technical skills and creative abilities in response to new technologies and trends.

PEO 3: Professional Competence: Graduates will demonstrate expertise in
game design, animation, and interactive media, working collaboratively with multidisciplinary teams to create

visually compelling and technically proficient content.

PEO 4: Ethical and Responsible Design: Graduates will practice ethically responsible design, ensuring that their work promotes positive social impact, cultural sensitivity, and inclusivity while addressing environmental and societal concerns.

PEO 5: Entrepreneurship and Innovation: Graduates will develop entrepreneurial skills, launching their own creative studios or ventures in gaming and animation, leveraging innovation, storytelling, and technological advancements to create unique and impactful experiences.

6.3 Programme Outcomes (PO)

PO1- Creative Design Solutions: Demonstrate the ability to develop innovative, functional, and aesthetically pleasing interior design solutions that meet client needsand enhance the user experience.

PO2 - Technical Competence: Apply advanced technical skills in space planning, materials selection, and construction methods to create efficient and sustainable interior environments.

PO3 - Ethical and Professional Responsibility: Exhibit a strong commitment to ethical practices, social responsibility, and professional conduct, ensuring respect for cultural, environmental, and societal contexts.

PO4 - Effective Communication: Effectively communicate design ideas and solutions through visual, oral, and written means, engaging with clients, stakeholders, and multidisciplinary teams.

PO5 - Sustainable Design Practices: Integrate principles of sustainability into interior design projects, promoting environmental stewardship and reducing the ecological impact of built environments.

PO6 - Leadership and Social Skills: lead multidisciplinary teams effectively, communicate with diverse stakeholders, and exhibit strong social skills essential for collaborative and inclusive design practices and contributing to the community through socially responsible design initiatives.

6.4 Programme Specific Outcomes (PSO)

PSO1 – Understanding video games that deliver captivating experiences highly valued in the gaming industry contexts.

PSO2 – Applying knowledge to get familiar with tools, software, and emerging technologies relevant to the entertainment business, enhancing the refinement of game experiences.

PSO3 – Analysing advanced skills in narrative filmmaking, comprehensive storytellingtechniques to produce detail-oriented and narrative-rich game designs.

PSO4 – Evaluating by demonstrating creativity and innovative thinking in game design, exploring new ideas and perspectives to contribute to the evolution of the field.

PSO5 – Developing professional-quality video games and animations within a practical-focused curriculum, demonstrating a deep understanding of game design principles.

PSO6 – Technical Proficiency Master game design and animation tools and software for precise creation, modeling, and rendering, effectively translating conceptual ideasinto functional and visually appealing digital experiences.

6.5 Career Avenues

- **Game Artist:** 2D and 3D Video Artist, Environment Artist, Asset Artist, Technical Artist,Character Artist
- **Freelance designer:** working for multiple companies as a freelancer
- **Chief Creative Designer:** Chief Designer, Head of Creative Operations
- **Head of Design Animator:** Creator of Visual Effects of Various Forms of Media and Entertainment,Design Lead, Art Production Manager, Senior Design Manager, Creative Lead Character and Background
- **Designer:** Sketching and Development of Character,Scenario Developer, Scenic and Aesthetic Design of Background
- **Game Designer:** Mobile Phone Game Designer, Video Game Designer, Game Level Designer, Computer Game Designer
- **Special Effects Artist:** Special Effects Illustrator for Movies, Special Effects Illustratorfor Television
- **Art Director:** Creative Director of Visual Style for Movies and Television, Design Director, Director of Creative Operations, Executive Creative Director

6.6 Duration

8 semesters, 4 Years (Full-Time)

6.7 Criteria for Award of Degree

Credit Completion: Students must earn a total of 196 credits over a minimum period of 8 semesters

7. Student's Structured Learning Experience from Entry to Exit in the Programme

➢ Education Philosophy and Purpose:

- **Learn to Earn a Living:**

At KRMU we believe in equipping students with the skills, knowledge, and qualifications necessary to succeed in the job market and achieve financial stability. All the programmes are tailored to meet industry demands, preparing students to enter specific careers and contributing to economic development.

- **Learn to Live:**

The University believes in learners' holistic development, fostering critical thinking, creativity, emotional intelligence, and a deeper understanding of the world. Our aim is to nurture well-rounded individuals who can contribute meaningfully to society, lead fulfilling lives, and engage with the complexities of the human experience.

➢ University Education Objective: Focus on Employability and Entrepreneurship through Holistic Education using Bloom's Taxonomy

By targeting all levels of Bloom's Taxonomy—remembering, understanding, applying, analysing, evaluating, and creating—students are equipped with the knowledge, skills, and attitudes necessary for the workforce and entrepreneurial success. At KRMU we emphasize on learners critical thinking, problem-solving, and innovation, ensuring application of theoretical knowledge in practical settings. This approach nurtures adaptability, creativity, and ethical decision-making, enabling graduates to excel in diverse professional environments and to innovate in entrepreneurial endeavours, contributing to economic growth and societal well-being.

➢ Importance of Structured Learning Experiences

A structured learning experience (SLE) is crucial for effective education as it provides a clear and organized framework for acquiring knowledge and skills. By following a well-defined curriculum, learners can build on prior knowledge systematically, ensuring that foundational concepts are understood before moving on to more complex topics. This approach not only enhances comprehension but also fosters critical thinking by allowing learners to connect ideas and apply them in various contexts. Moreover, a structured learning experience helps in setting clear goals and benchmarks, enabling both educators and students to track progress and make necessary adjustments. Ultimately, it creates a conducive environment for sustained intellectual growth, encouraging learners to achieve their full potential. At K.R. Mangalam University SLE is designed as rigorous activities that are integrated into the curriculum and provide students with opportunities in two parts:

➢ **Inside Classroom:** Structured learning in the classroom focuses on building cognitive outcomes through a student-centric approach. The methods used in this approach include:

- **Cognitive Learning:** Students develop their critical thinking and problem-solving skills by engaging with fundamental concepts in design, materials, and construction. They are taught to analyse spaces, understand user needs, and design functional and aesthetic solutions.
- **Student-Centric Learning:** The focus is on active participation, where students are encouraged to ask questions, collaborate, and engage in peer discussions. This fosters independent learning and critical reflection on design processes.
- **Teaching Methods:** A mix of lectures, design critiques, workshops and seminars ensures that students grasp both the theoretical and practical aspects of Architecture. Visual aids, case studies, and multimedia presentations are used to enhance understanding.
- **Tools and Techniques:** Various design software are introduced to equip students with technical skills in creating detailed plans and 3D models. The hands-on experience with these tools helps them translate concepts into tangible design outcomes.
- **Approach:** Design thinking and research-based projects are emphasized. These allow students to identify problems, conduct research, brainstorm ideas, and prototype solutions, enhancing their creativity and technical skills.

➢ **Outside Classroom: The outside classroom experience enhances students'** people skills **and** psychomotor skills **by involving them in industry-related, community, and hands-on activities:**

- **People Skills:** Students work on real-world projects, collaborating with professionals, peers, and communities. This helps them improve communication, teamwork, and client interaction skills. Industrial site visits, internship and participation in design workshops offer practical exposure to industry standards and practices.
- **Psychomotor Skills:** Students engage in hands-on learning through field work, material exploration, and fabrication techniques. In workshops, they handle tools and materials, building furniture models and experimenting with construction methods, which improves their dexterity and understanding of material properties.
- **Industry Interactions:** Regular industry visits to places of **architectural interest,** professional training/internship with Architectural firms or government organizations and collaborative projects with design firms allow students to bridge the gap between classroom learning and real-world practice. They get to apply classroom knowledge in a professional setting, gaining insights into market trends and industry requirements.

- **Community Engagement:** Participation in community-based design projects fosters a sense of social responsibility. Students might engage in projects that aim to improve public spaces or address the needs of underserved communities, allowing them to apply design principles in meaningful ways.

➢ Educational Planning and Execution WHAT, WHEN & HOW learning will happen

The educational planning and execution framework for Bachelor of Architecture (B.Arch.) programme at the School of Architecture & Design (SOAD) is designed in accordance with **Council of Architecture (COA) (Minimum standards of Architectural education) Regulations, 2020 guidelines** to provide a structured and enriching learning experience. This framework aims to facilitate meaningful engagement, foster critical thinking, and encourage creativity among students. By clearly outlining "WHAT, WHEN, and HOW" learning will take place, the school ensures that all educational activities align with the program's objectives and contribute to the holistic development of our aspiring Architects.

The programme is designed around the educational philosophy OF "LEARN TO EARN LIVING" and "LEARN TO LIVE," providing a holistic learning experience from entry to exit.

Entry Phase
Upon entry, students are introduced to the foundational principles of design and open electives such as environmental studies and disaster management. Orientation sessions emphasize understanding the fundamentals of Architecture field and the ethical responsibilities of architects. This initial phase emphasizes the importance of knowledge not just as a means to earn a living, but as a way to engage meaningfully with society.

Core Learning
As students' progress, they delve deeper into both the theoretical and practical aspects of architecture & design. Courses on design ethics, building sciences and applied engineering practices, and user experience equip students with essential skills for their future careers. Hands-on workshops and industry collaborations emphasize the concept of learning as preparation for professional success while fostering a sense of civic responsibility and personal growth. We have a strong students' support system in terms of differential learning (slow & fast learning), mentor-mentee system and personal counselling thereby ensuring students move up on the learning curve.

Skill Development
The program emphasizes developing versatile skills essential for a successful career in architecture, including research, design thinking, drafting, and project management. Through collaborative design projects, visit to industry, industry connect and networking students learn teamwork and communication, vital not just for professional success but also for fostering meaningful relationships in their personal lives.

Thesis and Exit Phase
In the final phase, students undertake Thesis projects that integrate their learning and showcase their creativity and professionalism. This culminates in a portfolio that reflects their readiness to enter the workforce when they go for training in the final semester. Additionally, KRMU Career Development Cell (CDC) assist with job placements, reinforcing the "Learn to Earn" philosophy. The program maintains a strong focus on personal values and lifelong learning, encouraging students to approach their careers as opportunities to contribute positively to society.

Co-Curricular and Extra-Curricular Activities

Students actively participate in 13 clubs and societies within the university, ranging from media production to cultural expression. These clubs facilitate peer interaction, teamwork, and leadership opportunities, helping students develop a well-rounded personality. Regular industry visits, guest lectures, and workshops by industry experts ensure that students remain connected to real-world design practices, bridging the gap between academic learning and professional expectations.

Community Connect

Community connects programs enhance students' social awareness and responsibility, allowing them to engage with various societal issues related to design and the built environment. As interior designers, students learn to consider the impact of their work on communities and to advocate for inclusive and sustainable practices. Participation in sports and cultural activities further contributes to a balanced lifestyle, promoting teamwork and resilience.

Ethics and Values

The programme places a strong emphasis on ethics, values, and a code of conduct in design practice. Students are encouraged to embody professionalism and integrity in their work, preparing them to be responsible designers and active citizens.

Career Counselling and Entrepreneurship

Career counselling services provide guidance on job placements, internships, and skill development, helping students navigate their career paths. Additionally, the university's incubation centre fosters entrepreneurial and leadership qualities, encouraging students to explore innovative ideas and start their ventures.

➢ Components of Educational Planning

All planned activities will be executed as scheduled, ensuring a consistent and enriching learning environment that supports the development of practical and theoretical skills in Architecture & design. The school will follow the following for conducting the semester educational, co-curricular and extracurricular activities.

1. **University Calendar:**
   The University Calendar outlines key academic dates, including the start and end of terms, examination periods, and holidays that impact Bachelor of Architecture (B.Arch.) program.
2. **Timetable:**
   The Timetable presents a structured overview of class sessions, lecture timings, studio hours, and project work, offering clarity on the weekly schedule for students.
3. **School Calendar:**
   The School Calendar provides a detailed schedule of important events, workshops, design critiques, and submission deadlines specific to SOAD.
4. **Activity Calendar:**
   The Activity Calendar highlights extracurricular events, guest lectures by industry professionals, and site visits that complement the academic curriculum, enriching students' understanding of interior design practice.
5. **Class Sessions/Lectures:**
   Scheduled activities include theoretical lectures, practical studio sessions for hands-on learning, and collaborative projects that foster teamwork and innovation.

6. **Monitoring & Review**
   Student progress is monitored through continuous assessment and feedback. Regular review meetings allow faculty to evaluate course delivery, address challenges, and refine teaching strategies. Student feedback plays a critical role in improving academic quality.
7. **Correction & Continuous Improvement**
   The program follows a cycle of ongoing improvement, using feedback and performance reviews to update curricula, refine teaching methods, and enhance faculty development. This ensures the program remains current and responsive to industry needs as per COA Regulations.

➢ Course Registration and Scheduling

In the Bachelor of Design (B. Des) Game Design and Animation program, students have the opportunity to choose from a variety of major and minor courses throughout their studies. There are 26 major courses and 8 minor courses available over the entire duration of the program. The selection process for minor is centralized, allowing students to make informed choices about their specialization. Every student must register at the beginning of each semester for the courses offered in the given semester. Major courses are registered centrally for the students. However, for other multidisciplinary courses (Minor, VAC, OE) the students must register by themselves through ERP.

School of Architecture and Design offers the following minors with 32 credits spread through the eight semesters

1. Interior Styling
2. Contemporary Art Practice
3. UI/UX Design
4. Game Development

➢ Value-Added Courses (VAC) and Open Electives (OE):

Value-Added Courses (VAC) and Open Electives (OE) are offered to enhance students' skills and knowledge beyond the core curriculum. Students can select these courses based on their interests, enabling them to gain practical insights and experience in specific areas related to Game design and Animation. The choice of VAC and OE typically occurs at the beginning of each semester, where students can consult with faculty and peers to make informed decisions.

➢ Internships, Projects, Dissertations, and Training

➢ Internships

Students are required to complete a summer internship in the Sixth semester. The internship carries 2 credits and is evaluated in the Coming Odd Semester. This hands-on experience is designed to provide students with practical exposure to the industry, allowing them to apply theoretical knowledge in real-world settings.

➢ Thesis and Research Project

From the Fourth semester, all the students undertake a Minor or Major Project in Game Design and Animation project, where they work on Projects according to their interest area. This hands-on approach enables them to conduct in-depth research, critically analyse design challenges, and propose innovative solutions, bridging academic learning with real-world practice.

Students pursuing Bachelor of Design (Hons. with Research) in Game Design and Animation engage in research projects that allow them to focus on specific areas within the field, aligning with their career goals. These projects are mapped to practical courses and experiential learning activities, ensuring students gain comprehensive insights into their chosen specializations.

➢ Training

In the eighth semester, students undertake Industry training, where they collaborate with industry professionals on real-life projects. Those pursuing a research-oriented path will complete a Research Project (Dissertation) instead. This structured approach to projects and dissertations enables students to develop critical thinking, research, and project management skills.

➢ Co-Curricular Activities Credit Choices

Participation in Co/ Extracurricular activities is part of outside classroom learning.

Students must earn 2 credits from co/ extracurricular activities. One credit from participation in co-curricular activities like Club/Society activities and another credit from Community Service (1 credit each) through participation in NSS/ Redcross activities or NGOs that contribute to their personal development, leadership skills, and community engagement.

- Under the category of **Club/Society**, 1 credit can be earned by registration in one of the Club/Societies of university and active participation in the events organized by the club/society **OR**
- 15 hours of active engagement in any of the recreational/sports activities

Under the category of **Community Service,** 1 credit can be earned by

- 15 hours active engagement in community service through NGO/NSS/Redcross or any other society approved/ empaneled by the university

At the end of the semester, students are required to submit a lot of hours, a report, and a certificate of participation/ completion summarizing their activities followed by a presentation.

➢ **Academic Support (Differential learning needs):** Academic Support Systems for B. Des Game Design and Animation students are designed to address diverse learning needs, ensuring each student excels. These systems include:

- **Personalized Tutoring:** One-on-one sessions with experienced tutors focus on areas such as design software, Concept and Story Design, Level design, Game Design, Game VFX, Game Development, Animation and Game Building, customized to individual skill levels.
- **Workshops and Seminars:** Regular workshops on topics like 2d design, digital modelling, Level Design techniques, and Game design ethics, along with industrial connections, enhance both practical and theoretical knowledge.
- **Peer Mentoring Programs:** Advanced learners' mentor fellow students by leading project teams and offering guidance on assignments and design critiques, fostering a collaborative and supportive environment.
- **Accessible Learning Resources:** Online platforms provide access to tutorials, design templates, articles, and interactive tools, accommodating various learning styles.
- **Production and Outcome-Based Activities:** Students are encouraged to engage in practical, hands-on activities like Game Jams, Industry Visits, and real-world projects. These works are showcased and recognized, boosting confidence and learning outcomes.
- **Diversity and Inclusion Initiatives:** Programs promoting inclusivity ensure that all design ideas are valued, enriching the learning environment.
- **Feedback and Assessment:** Continuous feedback systems allow students to receive constructive reviews of their work, facilitating growth, innovation, and skill development.

➢ Student Career & Personal Support:

- **Mentor-Mentee:** The Mentor-Mentee Program is an essential component for fostering successful careers as it acts as a bridge between faculty and students. Mentor-mentee relationships often go beyond academic and professional growth at KRMU.
- **Counselling and Wellness Services:** Counselling and Wellness Services for SOAD students are designed to support their mental health and overall well-being in a demanding academic environment. These services include confidential individual counselling sessions, where trained professionals provide guidance on stress management, time management and personal challenges. Group therapy sessions and workshops focus on topics such as resilience, coping strategies and mindfulness, promoting a sense of community and shared experiences. The school conducts sessions on mental health awareness from time to time. Wellness initiatives may include fitness programs, relaxation activities and access to health resources that promote physical and mental health. By creating a supportive environment, these services help students navigate the pressures of their studies while fostering a balanced and healthy lifestyle.
- **Career Services and Training:** The Career Development Centre (CDC) at KRMU provides comprehensive career services and training for SOAD students, focusing on creating ample placement opportunities. In addition to inviting corporate recruiters to campus, the Centre hosts various counselling and training programs aimed at enhancing students' academic and professional skills. These programs equip students with the essential tools needed to secure lucrative careers in their field. Each year, prominent companies visit the KRMU campus, offering attractive job packages to emerging talent. The faculty members and the mentors also ensure that students are well-prepared for the competitive job market.

➢ Learning and Development Opportunities

- **Practical Learning (Course Handouts, Session Plans):** Practical learning is supported by detailed handouts, providing structured guidance for students in areas like Fundamental of Designs, Game Design, Game Level Design, Game VFX and Game Development. Sessions are conducted in specialized environments such as the Smart Classrooms, Computer labs , studios etc. to enhance practical skills.
- **Experiential Learning (Learning by Doing):**
  - Inside Classroom: Design workshops, lighting system setups, and spatial planning exercises provide students with hands-on experience. Students apply theories through practical activities like model-making and digital design tool sessions.
  - Outside Classroom: Activities such as Site visits, industrial visits, client interaction, Pitch deck, and Investors interaction give students exposure to real-world challenges, with a focus on developing industry-relevant practical skills and Entrepreneurship Skills.
- **Case-Based Learning/Problem-Based Learning/Project-Based Learning:** Projects and case studies are carefully aligned with learning outcomes. Students are assigned tasks like cloning existing games or working on existing games problems solutions, with detailed learning guidelines provided to map out the entire process from concept to execution.
- **Workshops, Seminars, and Guest Lectures:** Regular workshops on topics like sustainable materials, advanced lighting, and digital modelling, supplemented by guest lectures from industry professionals. A tentative schedule will ensure these activities occur throughout each semester, giving students opportunities for direct interaction with experts and hands-on learning experience.

➢ Assessment and Evaluation

- **Grading Policies and Procedures for theory courses, practical courses, projects, Internships, Dissertation:** As per university examination policy of K R Mangalam University, the Program Outcome assessments is done by aggregating both direct and indirect assessments, typically assigning 80% weightage to direct assessments and 20% to indirect assessments, to compute the final course attainment.

Studio Courses

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

Evaluation Components	Weightage
Internal Marks (Theory): - **I) Continuous Assessment (30 Marks)** **(All the components to be evenly spaced)** Projects/ Quizzes/ Assignments and Essays/ Presentations/ Participation/ Case Studies/ Reflective Journals (minimum of five components to be evaluated)	30 Marks
II) Internal Marks (Theory)-Mid-Term Exam	20 Marks
External Marks (Theory): - End Term Examination	50 Marks

Summer Internship grading at the completion of VIth semester

Students are required to complete a minimum four-week summer internship with a reputable architecture or interior design firm. During the internship, students must maintain a logbook documenting their daily activities and submit a detailed internship report for evaluation. Additionally, students must provide an appointment letter and a completion certificate from the firm to receive credit for the internship.

Clubs and community- grading at the completion of IVth and Vth semester

Students must demonstrate active involvement in the University clubs, societies, and community engagement activities, including participation with the National Service Scheme (NSS) or an approved Non-Governmental Organization (NGO), to qualify for the award of credits. To secure the credits, students are required to submit certificates or letters of appreciation as formal proof of their participation along with a detailed report of the activity.

MOOC grading at the completion of VIII th semester

In Semester V, students will be informed about the requirement to complete a MOOC course. The information will be disseminated via noticeboards, emails, and during classroom briefings by faculty members.

- **Feedback and Continuous Improvement Mechanisms:** Teaching-learning is driven by outcomes. Assessment strategies and andragogy are aligned to course outcomes. Every CO is assessed using multiple components. The attainment of COs is calculated for every course to know the gaps between the desired and actual outcomes. These gaps are analysed to understand where does the student lags in terms of learning levels. Thereafter each student's learning levels are ascertained, if found below desirable level, and intervention strategy is effected in the following semester to make necessary corrections. To cater to the diverse learning needs of its student body, K.R. Mangalam University employs a comprehensive assessment framework to identify both slow and advanced learners. Students' learning levels are continually assessed based on their performance at various stages. If a student's performance in internal assessments falls below or equal to 55%, they are categorized as slow learners. Conversely, if a student's performance score in internal assessments is greater than or equal to 80%.

They are identified as advanced learners. Such students are encouraged to participate in advanced learning activities. Through periodic evaluations and the utilization of modern management systems, the institution adeptly tracks students' performance across various courses, allowing for targeted interventions and support mechanisms.

Academic Integrity and Ethics: The School of Architecture and Design places a strong emphasis on academic integrity and ethics, fostering a culture of honesty and responsibility among students. Clear guidelines are established to educate students about the importance of plagiarism prevention, proper citation practices, and ethical sourcing in their work. Regular workshops and seminars are conducted to discuss case studies and real-world scenarios, encouraging critical thinking about ethical dilemmas in Game Design and Animation field. Faculty members serve as role models, promoting transparency and accountability in their interactions and evaluations. By instilling these values, the school prepares students to uphold high ethical standards in their professional careers, emphasizing the critical role that integrity plays in journalism and mass communication

8. Programme Structure

Bachelor of Design - Game Design & Animation Structure										
Semester 1										
Sr. No	**Category**	**Course Code**	**Module Title**	**L**	**T**	**S**	**P**	**Credits**	**Assessment**	**Marking Int - Ext**
1	Major -1		Visual Communication Fundamentals – I	1	0	3	0	4	Jury	60-40
2	Major -2		Introduction to Design Thinking	1	0	3	0	4	Jury	60-40
3	Major -3		Material Exploration & Techniques	0	0	2	2	3	Jury	60-40
4	Major -4		Digital Design Basics	0	0	0	4	2	Jury	100 int
5	Major -5		History of Design	2	0	0	0	2	Theory	60-40
6	SEC -1		Design Drawing & Sketching	0	0	5	0	5	Jury	100 int
7	AEC -1		CDC	2	0	0	0	2	Jury	100 int
8	VAC -1		Environmental Studies	2	0	0	0	3	Theory	60-40
	Hours		27	**8**		**13**	**6**	25		
Semester 2										
Sr. No			**Module Title**	**L**	**T**	**S**	**P**	**Credits**	**Nature**	**Marking Int - Ext**
1	Major -6		Visual Communication Fundamentals – II	1	0	3	0	4	Jury	60-40
2	Major -7		Design & Society	0	0	3	0	3	Jury	60-40

3	Major -8		Material Exploration & Fabrication	0	0	2	2	3	Jury	60-40
4	SEC -2		Design Drawing & Digital Tools	0	0	2	4	4	Jury	100 int
5	VAC -2		Social & Cultural Studies	2	0	0	0	2	Theory	60-40
6	OE -1			1	0	2	0	3	Jury	100 int
7	Minor -1		Minor from other design domain	0	0	4	0	4	Jury	60-40
	Hours		26	**4**		**16**	**6**	**23**		
Summer Project : NGO, Documentation, Summer School, apprenticeship										
Student has to acquire any of the above mentioned or similar certification or recommendation to achieve credit in next semester										

Semester 3

Sr. No			**Module Title**	**L**	**T**	**S**	**P**	**Credits**	**Nature**	**Marking Int - Ext**
1	Major -6	ADGACS301	Comics and Storyboarding	0	0	3	0	3	Jury	60-40
2	Major -7	ADGACD302	Character Design	0	0	4	0	4	Jury	60-40
3	Major -8	ADGADD303	2D Digital Animation	0	0	3	0	3	Jury	60-40
4	Major -9	ADGAAC304	3D Asset Creation	0	0	4	0	4	Jury	100 Int
5	Major -10	ADGAPL305	Fundamentals of Programing Languages	0	0	4	0	4	Jury	60-40
6	AEC -2		Personal Development and Design Communication with CDC	2	0	0	0	2	Jury	100 int
7	OE -2			0	0	3	0	3	Jury	60-40
8	Minor		Summer Project (Evaluation)	0	0	0	0	1	Jury	100 Int
	Hours		27	**2**	**0**	**21**	**0**	**24**		

Semester 4

Sr. No			**Module Title**	**L**	**T**	**S**	**P**	**Credits**	**Nature**	**Marking Int - Ext**
1	Major-11	ADGAGE401	Introduction to Game Engine	0	0	3	0	3	Jury	60-40
2	Major -12	ADGAAM402	Advanced 3D-Modelling	0	0	4	0	4	Jury	60-40
3	Major -13	ADGAPT403	Paint and Texturing	0	0	3	0	3	Jury	60-40
4	Major -14	ADGALD404	Game Level Designing	0	0	3	2	4	Jury	60-40
5	Major -15	ADGALP405	Live Project 1	0	0	3	0	3	Jury	100 Int
6	VAC- 3		Entrepreneurship/ Designpreneurship	2	0	0	0	2	Jury	100 Int
7	OE -3			1	0	2	0	3	Jury	60-40
8	Clubs/ Society		Clubs/ Society	0	0	0	0	1	Clubs/ Society	cert.
9	Major -16		Regional Study Trip	0	0	0	0	1	Study Trip	100 Int
	Hours		29	**2**	**0**	**19**	**2**	**24**		
**Student Will Go On Summer Internship; Evaluation Will Be Done In Vth Semester*										

***In Semester V, Students Will Be Informed About The Requirement To Complete A MOOC Course. The Information Will Be Disseminated Via Notice Boards, Emails, And During Classroom Briefings By Faculty Members.*

Semester 5

Sr. No			Module Title	L	T	S	P	Credits	Nature	Marking Int - Ext
1	Major -17	ADGACR501	3D Rigging & Animation	0	0	4	0	4	Jury	60-40
2	Major -18	ADGAPS502	Game Production & Systems Design	0	0	2	2	3	Jury	60-40
3	Major -19	ADGALR503	Lighting And Rendering	0	0	3	0	3	Jury	60-40
4	Major -20	ADGAPD504	Particle & Dynamics	0	0	3	0	3	Jury	60-40
5	Major -21	ADGAIE505	Game Interface & Experience Design	0	0	3	0	3	Jury	60-40
6	AEC -3		Portfolio & Professional Communication	0	0	2	0	2	Jury	100 int
7	Minor- 4		Minor from other design domain	0	0	3	2	4	Jury	100 Int
8	Minor		Summer Internship (Evaluation)	0	0	0	0	1	Jury	100 Int
9	CS		Community Service	0		0	0	1	Com Service	cert.
	Hours		27	0		**20**	**4**	**24**		

Students Must Demonstrate Active Involvement In the University Clubs, Societies, And Community Engagement Activities, Including Participation With The National Service Scheme (NSS) Or An Approved Non-Governmental Organization (NGO), To Qualify For The Award Of Credits. To Secure The Credits, Students Are Required To Submit Certificate Or Letter Of Appreciation As Formal Proof Of Their Participation Along With A Detailed Report Of The Activity

Semester 6

Sr. No			Module Title	L	T	S	P	Credits	Nature	Marking Int - Ext
1	Major -22	ADGACA601	Character Animation	0	0	4	0	4	Jury	60-40
2	Major -23	ADGAAV602	Augmented and Virtual Reality	0	0	4	0	4	Jury	60-40
3	Major -24	ADGASE603	Sound Design & Editing	0	0	3	0	3	Jury	60-40
4	Major -25	ADGAAI604	AI for Design	0	0	3	0	3	Jury	60-40
5	Major -26	ADGALP605	Live Project 2	0	0	4	0	4	Jury	60-40
6	Minor- 5		Minor from other design domain	0	0	3	2	4	Jury	100 Int
7	Major -30		National Study Trip	0	0	0	0	1	Study Trip	100 Int
	Hours		25	**0**		**21**	**2**	**23**		
	SI-3		Summer Project : NGO, Documentation, Summer School, apprenticeship							

Semester 7

Sr. No			Module Title	L	T	S	P	Credits	Nature	Marking Int - Ext
1	Major -28	ADGAGD701	Film/Game Documentation	0	0	3	0	3	External Jury	60-40
2	Major -29	ADGADS702	Digital Sculpting	0	0	5	0	5	External Jury	60-40
3	RP/D		Research Methodology	2	0	0	0	2	External Jury	60-40
4	AEC -4		Professional Practice and Project Management	3	0	0	0	3	Theory	60-40
5	Minor- 6		Minor from other design domain	0	0	0	4	2	External Jury	100 Int

6	Minor		Summer Internship (Evaluation)	0	0	0	0	1	External Jury	100 Int
7	Minor		MOOC 2	0	0	0	0	2	Online	Cert.
	Hours		21	**5**	**0**	**8**	**4**	**18**		
Semester 7 with research										
Sr. No			**Module Title**	**L**	**T**	**S**	**P**	**Credits**	**Nature**	**Marking Int - Ext**
1	RP/D		Film/Game Documentation	0	0	3	0	3	External Jury	60-40
2	Major-30	ADGADS703	Dissertation	0	0	5	0	5	External Jury	60-40
3	RP/D		Research Methodology	2	0	0	0	2	External Jury	60-40
4	AEC -4		Professional Practice and Project Management	3	0	0	0	3	Theory	60-40
5	Minor		MOOC 2				0	2	Online	Cert.
6	Minor- 6		Minor from other design domain	0	0	0	4	2	External Jury	100 Int
7	Minor		Summer Internship (Evaluation)	0	0	0	0	1	External Jury	100 Int
	Hours		21	**5**	**0**	**8**	**4**	18		
Semester 8										
Sr. No			**Module Title**	**L**	**T**	**S**	**P**	**Credits**	**Nature**	**Marking Int - Ext**
1	Major -31	ADGAPF801	**Degree Project/Freelancing/Internship**	0	0	0	0	14	Jury	60-40
2	Minor- 7		Minor from other design domain	0	0	0	0	6	Jury	100 Int
	Hours		0					20		

DETAILED SYLLABI

SEMESTER-III

ADGACS301	**COMICS AND STORYBOARDING**	**L**	**T**	**S**	**P**	**C**

Version 1.0		**0**	**0**	**3**	**0**	**3**
Category of Course						
Total Contact Hours	45					
Pre-Requisites/ Co-Requisites	NA					

Course Perspective:

This course explores the **fundamentals of visual storytelling** through the mediums of **comics and storyboarding**, both essential tools in pre-visualization, animation, game design, and transmedia storytelling. Students will learn how to communicate narrative, emotion, and action through sequential imagery, camera language, and panel layout. The course emphasizes **clarity, pacing, character expression**, and the transition from script to screen/page, building a strong foundation in both cinematic and graphic storytelling.

Course Outcomes:

By the end of this course, students will be able to:

CO1. Understand and apply the principles of sequential storytelling and framing.
CO2. Create storyboards that visualize action, mood, and camera movement.
CO3. Design comic pages with clear panel flow, composition, and dialogue pacing.
CO4. Translate written scripts into visual narratives using drawing and layout techniques.
CO5. Build a storyboard and/or comic portfolio piece demonstrating storytelling, rhythm, and design.

Course Units:

- **Unit 1: Principles of Visual Storytelling**
  - Elements of a story: characters, setting, conflict, arc
  - Visual grammar: camera angles, shot types, staging
  - Reading flow and eye tracking in visual layout
  - Storyboarding vs comics: similarities and differences

- **Unit 2: Storyboarding for Games and Animation**
  - Storyboarding language shot types, transitions, motion lines
  - Staging characters, action, and dialogue
  - Creating animatics and pre-visuals
  - Planning cutscenes, cinematic sequences, and gameplay flow

- **Unit 3: Comics and Sequential Art**
  - Panel design, layout, and pacing
  - Comic timing, page turns, and visual rhythm
  - Dialogue balloons, captions, and sound effects
  - Stylization and genre-specific comic storytelling

- **Unit 4: Character Acting and Expression in Panels**
  - Gesture drawing and posing for emotion
  - Facial expressions and readable body language
  - Silhouettes, blocking, and clear framing
  - Mood boards and tone setting

- **Unit 5: Final Storyboard / Comic Project**
  - Developing a short script or scene

- Thumbnails, layout passes, and feedback loops
- Final inking, greyscale/shading (optional color)
- Presentation as a printed/scrolling comic or storyboard sequence

Learning Experience:
Students will experience a studio-oriented, practice-heavy environment that focuses on developing visual clarity and storytelling impact. They will analyze sequences from films, games, and graphic novels to break down timing, movement, and visual flow. Practical exercises include gesture drawing, thumbnailing, and drawing for mood and staging. Assignments grow from single-shot breakdowns to full storyboards and comic pages. Students will pitch ideas, receive critiques, and iterate to improve storytelling rhythm and effectiveness.

Textbooks:

- Scott McCloud, Understanding Comics: The Invisible Art (New York: Harper, 1990, 224 pp.)
- Craig Thompson, Blankets (Marietta, GA: Top Shelf, 2011, 592 pp.)

References:

- "Making Comics: Storytelling Secrets of Comics, Manga and Graphic Novels" by ScottMcCloud

Open Educational Resources:

https://boords.com/how-to-storyboard/comic

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGACD302	**CHARACTER DESIGN**	**L**	**T**	**S**	**P**	**C**
Version 1.0		**0**	**0**	**4**	**0**	**4**
Category of Course	Major					
Total Contact Hours	60					

Pre-Requisites/Co-Requisites	

Course Perspective:

Character Design is a core component of visual storytelling, game development, animation filmmaking, and branding. In the Indian media and gaming industries, there is a growing demand for original, culturally rooted yet globally appealing characters. This course focuses on building students' conceptual, visual, and technical skills to design expressive, functional, and narrative-driven characters.

It emphasizes drawing-based ideation, shape language, cultural context, and the creation of model sheets, preparing students for roles in game studios, animation production houses, IP development, and independent content creation.

Course Outcomes:

By the end of this course, students will be able to:

CO1. Understand the fundamentals of character design for games and animation.
CO2. Analyze the role of personality, backstory, and function in shaping character design.
CO3. Create characters through iterative sketching, anatomy study, and silhouette development.
CO4. Develop model sheets including front, side, back views and expressive poses.
CO5. Align their character designs with specific audiences, genres, and storytelling needs.
CO6. Utilize their skills in real-world applications such as pre-production pipelines and pitch presentations

Course Units:

Unit 1: Introduction to Character Design

- Role of character design in animation, games, comics, branding
- Real-world examples from Indian and global industries
- Study of iconic characters and what makes them memorable
- Understanding audience and genre alignment

Unit 2: Drawing Fundamentals for Character Design

- Gesture drawing, anatomy basics, proportion study
- Emphasis on stylization vs realism
- Constructing forms using basic shapes
- Practicing quick thumbnails and iterations

Unit 3: Character Ideation & Development

- Character personality, backstory, and function
- Shape language and visual storytelling
- Cultural research and references for Indian & global contexts
- Designing main vs supporting characters

Unit 4: Creating Character Lineups & Expressions

- Drawing turnarounds (front, side, back views)
- Facial expressions, emotion charts, hand gestures
- Costume and prop integration
- Understanding weight, balance, and posture

Unit 5: Final Model Sheet & Industry Presentation

- Designing final character lineup
- Creating clean digital/inked model sheets

- Formatting for studio presentations and portfolios
- Peer review and soft critique methods

Learning Experience:

- **Hands-on Drawing Exercises**: Regular sketchbook assignments, gesture drills, anatomy practice
- **Studio Simulations**: Simulated client briefs and turnaround sheet creation
- **Industry Tools**: Introduction to Photoshop, Clip Studio Paint, or Procreate for digital cleanups
- **Critique Culture**: Weekly peer reviews to improve visual communication and intent clarity
- **Real-World Relevance**: Guest session by a character designer or art director from Indian animation/game studio
- **Social Impact Linkage**: How character design shapes cultural narratives, influences behaviour, and promotes inclusivity

Textbooks: Title: *Creating Characters with Personality*
Author: Tom Bancroft
Publisher: Watson-Guptill

References: Title: *Character Design from the Ground Up*
Author: Kevin Crossley
Publisher: Ilex Press

Open Educational Resources:
https://conceptartemp ire.com/character- design-resources/

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGADD303	**2D Digital Animation**	**L**	**T**	**S**	**P**	**C**
Version 1.0		**0**	**0**	**3**	**0**	**3**
Category of Course						
Total Contact Hours	45					
Pre-Requisites/	NA					

Co-Requisites	

Course Perspective:

2D Digital Animation bridges classical principles of animation with modern digital workflows. With a surge in OTT content, mobile games, advertising, and educational media in India, skilled 2D animators are in high demand. This course equips students with the ability to animate digitally using tools like Toon Boom Harmony, Adobe Animate, or TVPaint, while staying rooted in timing, spacing, and storytelling principles.
This subject builds directly on Character Design—students will bring their designed characters to life through expressive digital animation.

Course Outcomes:

By the end of this course, students will be able to:

CO1. Apply 12 principles of animation in a digital workflow.
CO2. Create basic to intermediate 2D animations using industry-standard software.
CO3. Animate character expressions, walk cycles, lip sync, and actions.
CO4. Understand the production pipeline of 2D animation projects.
CO5. Export animation for different platforms (games, film, social media).
CO6. Prepare animations that reflect a strong understanding of timing, spacing, arcs, and character performance.

Course Units:

Unit 1: Principles of Animation Refresher

- Recap of 12 principles with examples
- Analysis of classic 2D animations (Disney, Indian studios, Anime)
- Pose-to-pose and straight-ahead techniques
- Introduction to digital timing charts

Unit 2: Digital Tools & Pipeline

- Interface and workspace of chosen tool (Toon Boom, Adobe Animate, etc.)
- Layers, timelines, onion skin, and keyframes
- Importing character model sheets and setup
- Clean-up and inking digitally

Unit 3: Character Animation Basics

- Drawing key poses and breakdowns
- Creating believable weight, balance, anticipation
- Simple actions: waving, jumping, turning, blinking
- Overlapping action, squash & stretch, follow-through

Unit 4: Walk Cycles & Performance Animation

- Front, side, and ¾ walk cycles
- Expression animation: sad, happy, angry, surprised
- Reaction timing and exaggeration
- Acting for animation: character psychology and body language

Unit 5: Mini Production & Output

- 5–10 second animated clip of student's original character
- Lip-sync with short dialogue
- Exporting for reels, YouTube, and social media
- Peer feedback and professional critique

Learning Experience:

- **Hands-on Practice**: Daily lab sessions using drawing tablets or iPads
- **Software Exposure**: Adobe Animate, Toon Boom Harmony, Krita, or TVPaint (based on institute resources)
- **Assignments**: Weekly exercises on principles + final animated short
- **Industry Relevance**: Guest demo by a studio animator or independent filmmaker
- **Interdisciplinary Learning**: Collab with voice acting or storyboarding students for final output
- **Portfolio Readiness**: Students create animation clips for their demo reel

Textbooks: Title: *The Animator's Survival Kit*
Author: Richard Williams
Publisher: Faber & Faber

References: Title: *Cartoon Animation*
Author: Preston Blair
Publisher: Walter Foster Publishing

Open Educational Resources:

https://www.bloopanimation.com/a

nimation-beginners/

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGAAC304	3D Asset Creation	L	T	S	P	C
Version 2.0		0	0	4	0	4
Category of Course	Major					
Total Contact Hours	60					
Pre-Requisites/ Co-Requisites	NA					

Course Perspective

3D Asset Design introduces students to the world of Computer Graphics (CG) through the lens of practical asset creation for games, animation, and virtual environments. This course is the gateway to the 3D production pipeline, where students learn how to design and model basic to intermediate assets using industry-relevant 3D software such as **Autodesk Maya**, **Blender**, or **3ds Max**. Students will begin with props, then move into vehicle design and environmental asset creation. They will also learn how to think modularly, optimize for game engines, and maintain clean topology — essential skills for Indian and global studios

Course Outcomes

Upon successful completion of the course, the student will be:

CO1. Understand the fundamentals of 3D modeling and asset creation.
CO2. Navigate 3D software and use essential tools for asset design.
CO3. Create props, vehicles, and environmental models with proper topology.
CO4. Apply reference-based design techniques and real-world scale.
CO5. Prepare basic assets for use in real-time and pre-rendered environments.
CO6. Develop a beginner-level 3D portfolio showcasing individual models.

Course Content

Unit 1: Introduction to 3D CG & Tools

- Understand the fundamentals of 3D modeling and asset creation.
- Navigate 3D software and use essential tools for asset design.
- Create props, vehicles, and environmental models with proper topology.
- Apply reference-based design techniques and real-world scale.
- Prepare basic assets for use in real-time and pre-rendered environments.
- Develop a beginner-level 3D portfolio showcasing individual models.

Unit 2: Prop Modeling

- Hard surface modeling principles
- Creating everyday objects: barrel, chair, lamp, treasure chest, etc.
- Reference-based modeling
- Scene organization, naming conventions, outliner hierarchy

Unit 3: Vehicle Modeling (Basic to Intermediate)

- Understanding volume, proportion, and flow
- Blocking and detailing of stylized/realistic vehicles (bike, scooter, cart)
- Use of primitives to build complex forms
- Emphasis on symmetry and modularity

Unit 4: Environment Modeling

- Understanding volume, proportion, and flow
- Blocking and detailing of stylized/realistic vehicles (bike, scooter, cart)
- Use of primitives to build complex forms
- Emphasis on symmetry and modularity

Unit 5: Basic Presentation & Export

- Understanding volume, proportion, and flow
- Blocking and detailing of stylized/realistic vehicles (bike, scooter, cart)
- Use of primitives to build complex forms
- Emphasis on symmetry and modularity

Learning Experience

- **Hands-on Labs**: Each week students model at least one asset
- **Software-Based Training**: Blender or Maya as the base tool (instructor's discretion)
- **Design Thinking**: Why is this asset needed? Where it fits in gameplay/scene?
- **Peer Reviews**: Share, receive critique, and improve
- **Micro Projects**: Mini diorama creation using all created assets

Textbooks:

- *Introducing Autodesk Maya 2023* by William Vaughan

References:

- *Digital Modeling* by Dariush Derakhshani

Open Educational Resources:

https://studio.blender.org/training/fundamentals/

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGAPL305	Fundamentals of Programing Languages	L	T	S	P	C
Version 1.0		0	0	4	0	4
Category of Course	Major					
Total Contact Hours	60					
Pre-Requisites/ Co-Requisites						

Course Perspective

In the evolving landscape of games and animation, understanding programming is no longer optional — it's an enabler. This course introduces the logic, structure, and syntax behind programming languages, empowering students to write small programs, understand game scripts, and create interactive behaviors. Special focus will be given to logic building, algorithmic thinking, and hands-on coding using beginner-friendly languages such as Python or C#. The course builds a solid foundation for future subjects like **Game Engine Integration**, **Scripting for Animation**, and Interactive **Media Design**.

Course Outcomes

Upon successful completion of the course, the student will be:

CO1. Understand core concepts of programming languages and their applications in creative technologies.

CO2. Write basic programs using variables, conditions, loops, and functions.

CO3. Analyse and debug simple programs with logical errors.

CO4. Apply coding to solve design problems (like movement, interaction, randomization).

CO5. Prepare for game engine scripting and interactive development.

CO6. Develop a problem-solving mindset in both design and tech contexts.

Course Content:

Unit 1: Introduction to Programming

- What is programming? Why is it useful for designers and animators?
- Programming languages in game and animation industries: Python, Lua, JavaScript, C#
- Installing and using IDEs (like VS Code or PyCharm)
- First program: print statement, basic syntax

Unit 2: Variables, Data Types & Operators

- Understanding variables and memory
- Data types: integer, float, string, boolean
- Arithmetic and logical operators
- Type casting and concatenation

Unit 3: Control Structures

- Conditional statements: if, else, elif
- Loops: for loop, while loop
- Nested loops and conditions

- Flowcharts and pseudocode for logic planning

Unit 4: Functions & Modularity

- Defining and calling functions
- Parameters, return values
- Scope of variables
- Reusability and structure in code

Unit 5: Mini Creative Coding Projects

- Animating objects using code logic (console-based or simple visual tools)
- Simple interactive applications (like dice roller, menu logic, random generator)
- Basic understanding of scripting logic in game engines (intro to Unity or Godot scripting)
- Submission of one small logic-based creative project

Learning Experience:

- Visual Teaching: Use of flowcharts, code simulators, and visual logic tools (e.g., Scratch, Replit, or Trinket for Python)
- Real-World Relevance: Coding examples tied to animation/game contexts
- Hands-On Practice: Weekly exercises and logic-building games (e.g., coding quizzes, debugging battles)
- Group Activity: Pair programming or logic-solving hackathons

Textbooks:

- **"Essentials of Programming Languages"** by Daniel P. Friedman, Mitchell Wand & Christopher T. Haynes (MIT Press, 2008, 3rd ed.)

References:

- **"Programming Languages: History and Fundamentals"** by Jean E. Sammet (Prentice Hall, 1969)

Open Educational Source:

https://learn.unity.com/

Educational Scheme:

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

SEMESTER IV

ADGAGE401	Introduction to Game Engine	L	T	S	P	C
Version 1.0		**0**	**0**	**3**	**0**	**3**
Category of Course	Major					
Total Contact Hours	45					
Pre-Requisites/ Co-Requisites	NA					

Course Perspective

This course serves as the student's first gateway to real-time interactive content creation. With the rise of **India's game development industry**, **Metaverse platforms**, **XR content**, and **gamified applications**, understanding game engines like **Unity** or **Unreal Engine** has become essential.

Students will learn the fundamentals of working within a game engine, setting up scenes, importing assets, adding interactivity, and understanding the game loop — laying the foundation for future specialization in game design, technical art, or level design.

Course Outcomes

Upon completion of the course the learner will be:

CO1: Understand the architecture and workflow of a professional game engine (Unity or Unreal).
CO2: Import and organize 2D/3D assets into a game environment.
CO3: Create basic user interaction using visual scripting or code.
CO4: Build and playtest small real-time experiences.
CO5: Apply core game logic such as camera movement, physics, collision, and UI triggers.
CO6: Collaborate across disciplines — combining design, animation, and logic in engine.

Course Content

Unit 1: Game Engine Basics & UI Overview

- What is a game engine? Types and examples
- Unity or Unreal Engine interface walkthrough
- Projects, scenes, game objects, prefabs
- The concept of game loop and runtime preview

Unit 2: Importing & Managing Assets

- Importing 2D/3D models, textures, and sounds
- Asset pipeline from Maya/Blender to Game Engine
- Materials and shaders (basic introduction)
- Organizing folders and hierarchy for clean projects

Unit 3: Building Game Worlds

- Terrain creation, lighting, skybox
- Placing props, designing basic level layouts
- Camera setup and movement
- Environment interaction: triggers and colliders

Unit 4: Game Logic & Interactivity

- Visual scripting (Unity: Bolt/Visual Scripting; Unreal: Blueprints)
- Movement, collision detection, object interaction
- Player input, UI elements (score, health bar, etc.)
- Audio and feedback systems (footsteps, collision sounds)

Unit 5: Mini Game Project

- Planning and prototyping a mini game (2D/3D)
- Integrating animations, assets, and interactivity
- Testing, bug fixing, and optimization basics

- Exporting a playable build (desktop or mobile)

Learning Experience:

- **Hands-on Engine Practice**: Every week students build and test something inside Unity or Unreal
- **Collaborative Projects**: Design + Animation + Programming come together
- **Debugging & Testing**: Encourage early troubleshooting mindset
- **Guest Lecture**: Industry expert from an Indian indie game studio
- **Gamification Mindset**: How games engage users, basic mechanics of reward loops
- **Mini Showcase**: End-of-semester demo day to present student games

Textbooks: Title: *Game Engine Architecture*
Author: Jason Gregory
Publisher: CRC Press

References: Title: *Learning C# by Developing Games with Unity*
Author: Harrison Ferrone
Publisher: Packt Publishing

Open Educational Resources (OER): Title: *Unreal Engine Online Learning (Free Courses by Epic Games)*
Link: https://www.unrealengine.com/en-US/onlinelearning-courses

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGAAM402	Advanced 3D Modeling	L	T	S	P	C
Version 1.0		0	0	4	0	4
Category of Course	Major					
Total Contact Hours	60					
Pre-Requisites/Co-Requisites						

Course Perspective

This course dives deep into hard surface modeling techniques using Autodesk Maya, with a focus on creating complex, game-ready assets such as weapons, vehicles, gadgets, and mechanical props. Emphasis is placed on precision, clean topology, functional design, and high-poly to low-poly workflows used in professional pipelines. Students will learn how to design modularity, detail with control, and prepare assets for texturing and integration into real-time environments. The course simulates production-like asset creation with a technical and design-oriented mindset.

Course Outcomes

Upon successful completion of the course, the student will be:

CO1. Construct detailed, high-fidelity hard surface models using advanced polygon modeling tools in Maya.

CO2. Understand the design and topology principles behind mechanical, weapon, and vehicle assets.

CO3. Create clean, optimized low-poly models from high-poly counterparts.

CO4. Apply modular modeling techniques for scalability and efficiency.

CO5. Prepare assets for baking, texturing, and export to real-time engines.

Course Content

- **Unit 1: Foundations of Hard Surface Modeling**
  - Understanding hard surface design: forms, bevels, paneling
  - Mechanical references and design logic
  - Using edge loops, booleans, and bevels effectively
  - Precision modeling with grids, snapping, and real-world scale
- **Unit 2: High-Poly Modeling Techniques**
  - Advanced modeling tools: deformers, creases, and control edges
  - Non-destructive modeling: live booleans, instances, symmetry
  - Surface refinement: chamfers, fillets, panel lines, vents
  - Workflow efficiency and scene organization
- **Unit 3: Low-Poly Optimization & Retopology**
  - Creating game-ready low-poly versions of high-poly assets
  - Manual and automatic retopology techniques
  - Maintaining silhouette and essential detail
  - Poly budget management for weapons and vehicles

- **Unit 4: Modular Design & Mechanical Assemblies**
  - Modular asset creation for props and machinery
  - Working with pivots, snapping, and instancing
  - Assembling complex objects (e.g., mechs, guns, vehicles)
  - Design for animation and part separation (turrets, hinges, etc.)
- **Unit 5: Export Pipeline & Turntable Presentation**
  - Scene cleanup, naming conventions, freeze transformations
  - Exporting clean geometry to texturing and game engines
  - Setting up turntables, lighting, and basic rendering in Arnold
  - Final model presentation and portfolio preparation

Learning Experience

Teaching Methods: -
The learning experience in an animation with Adobe tools course is both creative and technically enriching. Students engage in hands-on projects that challenge them to bring characters and scenes to life using Adobe's animation and design software. Throughout the course, they explore a range of techniques, from frame-by-frame animation in Adobe Animate to complex compositing in After Effects. The process of learning involves experimenting with different styles, mastering keyframe animations, and understanding the nuances of visual storytelling. By the end of the course, students develop a solid command ofAdobe tools, empowering them to create polished, professional animations that meet the demands of the digital media industry.
Final Exam: A comprehensive assessment covering both theory and practical skills

Textbook: Title: *Polygonal Modeling: Basic and Advanced Techniques*
Author: Mario Russo

Reference Book: Title: *ZBrush Character Creation: Advanced Digital Sculpting*
Author: Scott Spencer

Open Educational Resources(OER): Title: *Blender Cloud – Modeling Courses (Free & Open Source)*
Link: https://cloud.blender.org/

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGAPT403	Digital Paint and Texturing	L	T	S	P	C
Version 1.0		0	0	3	0	3

Category of Course	Major
Total Contact Hours	45
Pre-Requisites/ Co-Requisites	

Course Perspective

This course focuses on enhancing the **visual quality** of 2D/3D assets through digital painting and texturing techniques. With the shift towards stylized, hand-painted, and realistic visuals in **games, animation films, VR/AR, and product viz**, these subjects builds both artistic **aesthetics** and **technical texturing workflows**. Students will explore **texture maps**, **UV layout**, and **painting workflows** using tools like Adobe Photoshop, Substance Painter, and optionally Blender's texture paint — all aligned to modern production needs in India's growing CG industry.

Course Outcomes

Upon successful completion of the course, the student will be:

CO1. Understand the principles of digital painting, color theory, and surface detailing.

CO2. Prepare UV-unwrapped 3D assets for texturing.

CO3. Create hand-painted and procedural textures using 2D and 3D tools.

CO4. Apply texture maps (diffuse, normal, roughness, etc.) to 3D models.

CO5. Present fully textured models in Marmoset, Blender, or Game Engine preview.

CO6. Create portfolio-ready renders with artistic control and technical accuracy

Course Content

Unit 1: Principles of Digital Painting & Color Theory

- Understanding materials: metal, wood, skin, cloth
- Light, shadow, hue, saturation, and value
- Stylized vs realistic texturing
- Brush control, texture stylization, surface storytelling

Unit 2: UV Unwrapping Fundamentals

- What is UV mapping and why it matters
- Seams, unwraps, packing UV islands
- UV optimization for game-ready assets
- Exporting UV maps for texture painting

Unit 3: 2D Texturing Techniques

- Creating base color, highlights, and shadows in Photoshop
- Hand-painted style textures (Zelda, Valorant)
- Dirt, wear, and detail maps
- Texture tiling and reusability for environment assets

Unit 4: 3D Texturing Workflows

- Introduction to Substance Painter or Blender's Texture Paint
- PBR workflow: base color, roughness, metallic, normal
- Baking maps from high-poly to low-poly
- Real-time preview and troubleshooting

Unit 5: Final Texturing Project & Showcase

- Students texture a character or prop created in 3D class
- Render textured model with lighting and camera setup
- Create texture sheets and breakdown documentation
- Present turntable and stills as portfolio work

Learning Experience

- **Hands-on Workflow**: Students paint and texture weekly using live assets
- **Tool Exposure**: Photoshop, Substance Painter, Blender Texture Paint
- **Material Studies**: Real-world material board creation and reference analysis
- **Art + Tech Balance**: Color aesthetics meet technical accuracy
- **Guest Demo**: By a texture artist from animation/game/VFX studio
- **Crit + Feedback**: Visual storytelling via texture — group discussions encouraged

Textbooks:

- Creating Games with Unreal Engine, Substance Painter, & Maya
  by Kassandra Arevalo,Matthew Tovar, Jingtian Li

References:

- Realistic Assets Creation with Adobe
- Substance 3D by Zeeshan Jawed Shah

Open Educational Resources (OER)

https://www.adobe.com/learn/substance-3d-painter?learnIn=1

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGALD404	Game Level Designing	L	T	S	P	C
Version 1.0		0	0	3	2	4
Category of Course	Major					
Total Contact Hours	75					
Pre-Requisites/ Co-Requisites	NA					

Course Perspective

This course bridges creative spatial design with technical execution, guiding students through the complete process of game level creation—from concept to playable prototype. Students will learn the principles of level design, player psychology, genre-specific challenges, and how to implement these using Unreal Engine (or Unity).

The course emphasizes iteration, real-time feedback, and polish, preparing students to meet industry standards for level design roles in studios or indie teams.

Course Outcomes:

Upon successful completion of the course, the student will be:

CO1: Understand and apply level design principles including flow, pacing, player types, and risk-reward.

CO2: Analyse existing levels across genres to extract structural and gameplay insights.

CO3: Design levels through paper prototyping, encounter mapping, and layout sketching.

CO4: Build, test, and iterate 3D levels using modular blockouts, Blueprint/Visual Scripting, and engine tools.

CO5: Implement environmental storytelling, lighting, audio, and interactive elements.

CO6: Conduct structured playtests and optimize levels for performance, engagement, and clarity.

CO7: Present a polished level supported by a professional Level Design Document (LDD).

Course Content:

Unit 1: Foundations & Player-Centric Design

- What is level design? Role in player experience.
- Flow theory, pacing, challenge curves.
- Player types (Achievers, Explorers, Killers, Socializers).
- Gameplay loops, checkpoints, risk-reward dynamics.
- Sketching layouts, flowcharts, beat maps.

Unit 2: Genre & Game World Structure

- Genre-specific level design (FPS, platformer, RPG, puzzle, etc.).
- Linear vs modular vs open-world layouts.
- Environmental storytelling: narrative vs mechanical structure.
- Case studies: iconic level breakdowns across genres.

Unit 3: Tools & 3D Blockouts

- Paper to engine: whiteboxing, greyboxing, and modular blockouts.
- Unreal/Unity interface, snapping, scale, and metrics.
- Asset importing from Maya/Blender.
- Navigation flow: funnels, sightlines, bottlenecks.

Unit 4: Interactivity, Lighting & Audio

- Blueprint/Visual Scripting basics (triggers, interactables, events).
- Lighting techniques: Lumen, Lightmass, dynamic/baked lights.
- Audio design: ambient sound, zones, feedback cues.
- Navigation mesh setup, basic AI pathing, and camera setups.

Unit 5: Optimization, Testing & Showcase

- Pacing, bottleneck analysis, difficulty balancing.
- Occlusion, light baking, culling, and performance tuning.
- Pacing charts and intensity mapping.
- Iterative playtesting with peer and faculty feedback.
- Final level presentation with Level Design Document (LDD).

Learning Experience

- Studio-Style Iteration: From 2D sketch to 3D greybox to polished prototype with lighting, AI, and scripting.
- Case Studies: Breakdown of real-world levels to understand pacing, narrative, and user flow.
- Cross-Disciplinary Practice: Integration of design, art, and scripting.
- Collaborative Feedback: Weekly critique sessions, playtests, and peer reviews.
- Guest Lectures: Insights from professional level designers and environment artists.
- Industry Tools: Unreal Engine (preferred), Unity (optional), Miro/Mural, Figma, Lucidchart.

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Textbooks: Title: *Level Up! The Guide to Great Video Game Design*
Author: Scott Rogers

References: Title: *An Architectural Approach to Level Design*
Author: Christopher W. Totten

Open Educational Resources: Title: *GDC Vault – Level Design Lectures (Free Sessions)*
Link: https://www.gdcvault.com/free/gdc-15

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGALP405	Live Project 1	L	T	S	P	C
Version 1.0		0	0	3	0	3
Category of Course	Major					
Total Contact Hours	45					
Pre-Requisites/Co-Requisites						

Course Perspective

This course enables students to undertake an industry-mentored project where they apply their foundational skills in design, game development, or animation toward planning and pre-production. Aligned with their areas of specialization, students will work independently or in teams under the guidance of an external expert. The course emphasizes professional collaboration, research, documentation, and pitch development—laying the groundwork for more advanced project execution in later semesters.

Course Outcomes

Upon successful completion of the course, the student will be:

CO1: Develop a concept brief aligned with an industry mentor's guidance.

CO2: Conduct relevant research and gather visual/audio/reference material.

CO3: Create pre-production assets such as GDDs, storyboards, scripts, or layout plans.

CO4: Collaborate effectively with peers and professionals.

CO5: Present the consolidated proposal to a review panel with supporting documentation.

Course Content

Unit 1: Project Discovery and Mentor Alignment

- Identifying individual or group project themes (game, animation, hybrid)
- Project scoping and outcome mapping
- Matching with external mentor and setting expectations
- Creating a project brief and preliminary development log

Unit 2: Reference Gathering and Creative Research

- Building moodboards, collecting visual references, and design benchmarking
- Studying industry examples, genre analysis, and competitor breakdowns
- Exploring target audience, gameplay/narrative trends, or animation tone
- Mentor feedback on research clarity and direction

Unit 3: Pre-Production Planning and Documentation

- Game design document (GDD) or story/script outline creation
- Storyboards, level layouts, or visual development (as per project type)
- Flowcharts, asset lists, or timeline breakdowns
- Review and revision sessions with mentor and faculty

Unit 4: Project Structuring and Workflow Setup

- Defining milestones, deliverables, and collaborative responsibilities
- Creating pitch decks, task boards (Trello/Notion), and production logs
- Visual mockups, greybox templates, or test animations (if applicable)
- Dry run for jury presentation and self-evaluation preparation

Unit 5: Final Pitch, Review & Submission

- Final presentation to internal/external jury
- Submission of consolidated project document (bible/pitch packet)
- Mentor feedback loop and reflection
- Peer showcase and documentation archive

Learning Experience

This is a mentorship-driven studio module where students apply foundational skills toward real-world project ideation and planning. They will receive guidance from an external expert and faculty coordinator through check-ins, feedback sessions, and milestone reviews. The emphasis is on communication, professionalism, clarity of vision, and documentation quality. Work may be collaborative, or individual based on scope and mentor alignment.

Text Book:
Reference Book:
Open Educational Resources(OER):

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

SEMESTER V

ADGACR501	3D Rigging & Animation	L	T	S	P	C
Version 1.0		0	0	4	0	4
Category of Course	Major					
Total Contact Hours	60					
Pre-Requisites/Co-Requisites	NA					

Course Perspective

This course equips students with essential skills in character rigging and animation for games and interactive media. It blends technical rigging techniques—like IK/FK systems and skinning—with animation principles focused on timing, motion, and expression. Learners also explore product and vehicle animation, camera work, and prepare assets for real-time engines, building a complete pipeline understanding from rig setup to final animation export.

Course Outcomes

CO1. Demonstrate understanding of rigging fundamentals including joint hierarchies, skinning, and deformation-friendly topology.

CO2. Create functional character control rigs using IK/FK systems, constraints, and custom attributes for animation workflows.

CO3. Apply the 12 principles of animation to develop expressive, game-ready character and object animations.

CO4. Design and execute product and vehicle animations with effective camera movements and rendering techniques.

CO5. Prepare and export animated assets for integration into real-time engines such as Unity or Unreal Engine.

Course Content

Unit 1: Introduction to Rigging Fundamentals

- Joint hierarchies and naming conventions
- Skinning basics and weight painting
- Parenting, grouping, and transformations
- Importance of topology in deformation

Unit 2: Building Character Control Rigs

- Creating IK and FK systems
- Setting up controls, constraints, and driven keys
- Custom attributes and channel control
- Clean rig organization for animation use

Unit 3: Animation Principles for Games

- 12 principles of animation (focus on games)
- Keyframing, breakdowns, and in-betweens

- Animation timing and exaggeration
- Using the graph editor for smoothing and easing
- ◇ **Unit 4: Product Animation Techniques**
- Introduction to Product Animation: Purpose and Applications
- Keyframe Animation for Product Rotation, Exploded Views, and Transitions
- Using Cameras to Enhance Product Presentation
- Turntable Animations and Close-Up Shots
- Rendering Techniques for Commercial/ Game-Quality Output
- ◇ **Unit 5: Exporting & Engine Readiness**
- Fundamentals of Camera Animation: Framing, Panning, and Tracking
- Introduction to Vehicle Rigging for Animation
- Animating Vehicle Movement (Drive Cycles, Suspension, Wheel Rotation)
- Project: Creating a Short Cinematic Sequence of a Moving Vehicle

Learning Experience

Throughout this course, students will gain hands-on experience with both technical rigging processes and creative animation workflows used in the game and product design industries. The curriculum balances theory and practical application, allowing learners to progressively build skills across character rigging, control systems, animation principles, and real-time readiness.

Textbooks: - Title: *Digital Character Animation 3*
Author: George Maestri
Publisher: New Riders Press

Suggested Readings: - Title: *The Art of Rigging* (Volume 1)
Author: Jason Schleifer, Todd Widup, et al.
Publisher: CG Toolkit

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGAPS502	Game Production & Systems Design	L	T	S	P	C

Version 1.0		**0**	**0**	**2**	**2**	**3**
Category of Course	Major					
Total Contact Hours	60					
Pre-Requisites/Co-Requisites	NA					

Course Perspective:

This course focuses on the development of core gameplay systems, mechanics, and structure required for building a functional game prototype. Students will learn how to translate design documentation into working systems, iterate through greyboxing, and integrate gameplay logic using blueprints or scripts. Emphasis is placed on systemic thinking, level flow, and functional polish to support a playable game experience.

Course Outcomes:

Upon successful completion of the course, the student will be:

CO1: Design and implement basic gameplay systems such as movement, interaction, and environment response.

CO2: Build and iterate level layouts and mechanics using greyboxing and modular techniques.

CO3: Integrate lighting, audio, and atmosphere to support gameplay feedback and flow.

CO4: Optimize and refine game systems based on playtesting feedback.

CO5: Deliver a functional game prototype with integrated systems and a clear core loop.

Course Content:

Unit 1: Gameplay Structure Planning

- Greyboxing concepts, player flow, spatial layout
- Game idea refinement through mechanic mapping
- Planning core loop, pacing, and progression

Unit 2: Greyboxing, World Building & Spatial Setup

- Blocking out levels using BSP or modular kits
- Planning player navigation, jump gaps, and interaction zones
- Applying lighting techniques (baked, Lumen, dynamic) to define mood and player direction
- Use of fog, post-processing, and environmental audio to enhance atmosphere
- Testing scale, space, and spatial rhythm to support core gameplay mechanics

Unit 3: Blueprint Systems & Game Logic

- Blueprint scripting fundamentals (event graph, variables, branches)
- Creating game systems: pickups, doors, damage, score
- Game state control, timers, interactivity
- Connecting gameplay systems to UI hooks

Unit 4: Gameplay Polish & QA

- Debugging logic and optimizing blueprints
- Audio, camera shake, feedback tuning

- Iterative playtesting and player experience balancing

Unit 5: Final Integration & Showcase

- Complete functional game prototype
- Integrating UI, environment, mechanics
- Final demo presentation and walkthrough

Learning Experience:

This course uses a project-based studio approach. Students work in teams or individually to plan and implement functional gameplay spaces. Weekly development check-ins, live reviews, and focused mentoring guide iteration. Students will also collaborate with peers from the UI course to integrate systems for a full prototype experience.

Textbooks: - ***Introduction to Game Systems Design*** by Dax Gazaway (Pearson/Addison-Wesley, 2021)
Suggested Readings: - ***Rules of Play: Game Design Fundamentals*** by Katie Salen & Eric Zimmerman (MIT Press, 2003)
Open Educational Resources (OER):

Evaluation Scheme:

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGALR503	Lighting And Rendering	L	T	S	P	C
Version 1.0		0	0	3	0	3
Category of Course	Major					
Total Contact Hours	45					
Pre-Requisites/Co-Requisites						

Course Perspective

This course introduces students to 3D lighting techniques and rendering workflows essential for games, animation, and cinematic production. It focuses on how lighting enhances mood, depth, and storytelling while exploring the technical aspects of render settings and optimization.

Course Outcomes

By the end of this course, students will be able to:

CO1. Understand the fundamentals of light behavior in 3D environments.

CO2. Set up key, fill, and rim lights to create cinematic lighting setups.

CO3. Use real-time and baked lighting techniques in game engines.

CO4. Apply materials and shaders for realistic or stylized rendering.

CO5. Perform render passes and compositing using industry-standard tools.

CO6. Produce a high-quality render portfolio with different lighting moods.

Course Content

Unit 1: Fundamentals of Lighting in 3D

- Principles of light: intensity, color, shadows
- Three-point lighting system
- Light types: Point, Spot, Directional, Area
- Introduction to HDRI lighting

Unit 2: Lighting for Games vs Animation

- Real-time lighting vs pre-rendered lighting
- Static and dynamic lighting in game engines
- Baked GI and lightmaps (Unity/Unreal)
- Performance optimization in lighting

Unit 3: Rendering Fundamentals

- Render engines: Arnold, V-Ray, Eevee, or Unreal
- Materials and shader basics (PBR workflow)
- Render settings: resolution, sampling, ray depth
- Environment fog, bloom, lens effects

Unit 4: Look Development and Mood Lighting

- Creating day/night lighting
- Stylized vs photoreal lighting setups

- Lighting for emotion: horror, fantasy, sci-fi
- Case studies from animated films and AAA games

Unit 5: Final Render & Compositing

- Render passes: diffuse, specular, AO, Z-depth
- Compositing basics in After Effects/Nuke
- Color correction and grading
- Rendering demo reel shots and portfolio development

Learning Experience

- Software: Maya + Arnold, Blender + Eevee/Cycles, Unity/Unreal
- Hands-on scene lighting challenges weekly
- Emphasis on creative + technical lighting
- Final portfolio: 3 fully lit and rendered environments/characters
- Collaborative projects encouraged with modeling/animation teams

Textbooks: - Title: *Digital Lighting and Rendering*
Author: Jeremy Birn

Suggested Readings: - Title: *Lighting for Animation: The Art of Visual Storytelling*
Author: Jasmine Katatikarn & Michael Tanzillo

Open Educational Resources (OER):
Title: *Blender Guru – Lighting and Rendering Tutorials (Free)*
Link:
https://www.blenderguru.com/

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGADP504	DYNAMICS AND PARTICLE SYSTEM	L	T	S	P	C
Version 1.0		0	0	3	0	3

Category of Course	Major
Total Contact Hours	45
Pre-Requisites/Co-Requisites	NA

Course Perspective

This course introduces students to the foundational and advanced principles of particle systems and dynamics in 3D environments. It builds an understanding of natural forces, physics-based simulations, and procedural effects used in animation and games. The emphasis is on real-world application using industry-relevant software, helping students develop FX assets that add realism and energy to 3D scenes.

Course Outcomes

Upon completion of the course the learner will be able to:

CO1. Understand particle systems, emitters, solvers, and dynamic simulations in 3D software.

CO2. Simulate natural phenomena like fire, smoke, rain, snow, and debris using particle techniques.

CO3. Apply rigid body and soft body dynamics for realistic object interaction.

CO4. Design FX elements for in-game use and cinematic sequences.

CO5. Evaluate how particles & dynamics enhance storytelling, gameplay, and visual appeal in games and animation.

.

Course Content

Unit 1: Introduction to Dynamics & Particles

- Introduction to forces and simulation in animation/game engines
- Particle emitters, lifespan, speed, randomness
- Types of particles: point, instanced, sprite, voxel-based
- Real-world applications in games & films

Unit 2: Environmental Effects Simulation

- Creating rain, snow, fog, smoke, fire
- Using noise, turbulence, wind, gravity
- Blending multiple particle systems for complex effects
- Layering and timing FX for storytelling

Unit 3: Rigid & Soft Body Dynamics

- Collision detection and response
- Bounce, friction, mass attributes
- Cloth simulations, soft objects interaction
- Destruction simulation for props (e.g., breaking walls, exploding barrels)

Unit 4: Fluids & Gaseous Dynamics

- Liquid simulations (pouring, splashing, flow)
- Smoke and fire using voxel-based simulation
- Integration with lighting and shading
- Optimization for real-time rendering (LOD, caching)

Unit 5: Game Engine FX Integration

- Exporting and importing particle FX to game engines (Unreal/Unity)
- Real-time vs. offline simulation techniques
- Performance considerations
- Creating a short real-time FX demo scene

Learning Experience

- **Software:** Autodesk Maya (nParticles), Houdini (Intro), Blender, Unity/Unreal Niagara
- **Workshops:** Guest session with VFX/Game FX artist on AAA pipelines
- **Assignments:** Design 3 unique particle-based VFX shots (natural, destructive, magical)

- **Mini Project:** Create an in-game special effect or cinematic FX breakdown
- **Portfolio Outcome:** Short FX reel showcasing technical understanding and creativity

Textbooks: - Title: *Introducing Maya 2020* (Chapters on Dynamics & Effects) **Author:** Dariush Derakhshani

Suggested Readings: - Title: *The Art of Fluid Animation* **Author:** Jos Stam

Open Educational Resources (OER):
Title: *SideFX Houdini – Free Learning Resources*
Link:
https://www.sidefx.com/learn/free-tutorials/

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGAIE505	Game Interface & Experience Design	L	T	S	P	C
Version 1.0		0	0	3	0	3
Category of Course	Major					
Total Contact Hours	45					
Pre-Requisites/Co-Requisites	NA					

Course Perspective:

This course explores the principles and workflows of designing and implementing game interfaces that shape the player experience. Students will learn UI/UX concepts, screen flow planning, and visual design tailored to genre and gameplay goals. They will create and implement interfaces using Unreal Engine's Blueprint system, linking UI to core gameplay mechanics. Emphasis is placed on readability, feedback systems, accessibility, and polished player journeys.

Course Outcomes:

Upon successful completion of the course, the student will be:

CO1: Plan UI/UX flows and screen layouts using wireframes and user journey mapping.
CO2: Design coherent and visually effective interface elements that align with genre and game mechanics.
CO3: Implement interactive UI using Unreal Engine's Blueprint system and UMG.
CO4: Test, iterate, and refine UI systems based on usability feedback.
CO5: Deliver a functional, visually polished UI system integrated into a playable game build.

Course Content:

Unit 1: Game Vision & UX Planning

- Understanding player personas and audience needs
- UX goal setting and interface tone alignment
- Creating moodboards, navigation flows, and menu logic diagrams
- Mapping user journeys for different player states (start, pause, fail, complete)

Unit 2: UI/UX Flow & Visual Design

- Wireframing for main menu, HUD, pause and settings screens
- Designing screen hierarchy, resolution grids, and navigation consistency
- UI kits: typography, iconography, shapes, colors, and layout systems
- Creating mockups using Photoshop/Figma aligned to visual style guide

Unit 3: UI Implementation with Blueprint Systems

- Unreal Engine UMG workflow and widget hierarchy
- Scripting HUD elements (health, inventory, timers) using Blueprints
- Interactive menu buttons, animation transitions, and visibility toggles
- Linking UI to gameplay systems (start game, level complete, pause/resume)
- Debugging UI responsiveness and performance in real-time scenarios

Unit 4: UI Testing & Polish

- Conducting usability tests and feedback sessions
- Visual/audio feedback cues (hover states, sounds, popups)
- Accessibility improvements (contrast, font scale, visual indicators)
- Iterative refinement of layout, readability, and clarity

Unit 5: Final UI Integration & Presentation

- Integrating UI seamlessly into the core game loop
- Syncing menus and HUD with game states
- Creating a user-flow walkthrough and UI presentation
- Final in-engine demo of UI system and visual documentation deck

Learning Experience:
Students will work in a studio-based environment that blends visual design with game development. The course emphasizes collaboration with peers in gameplay/system design to build fully integrated experiences. Students will prototype, implement, and refine UI directly in-engine using Blueprint logic, aligning visuals with functionality. Regular testing, critique rounds, and feedback loops reinforce design thinking and iterative development.

Textbooks: - ***Game Development Essentials: Game Interface Design*** by Kevin D. Saunders & Jeannie Novak (Delmar Cengage, 2nd Ed., 2007)
Suggested Readings: - ***The Gamer's Brain: How Neuroscience and UX Can Impact Video Game Design*** by Celia Hodent (2021)
Open Educational Resources (OER)

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

SEMESTER VI

ADGACA601	Character Animation	L	T	S	P	C
Version 1.0		0	0	4	0	4
Category of Course	Major					
Total Contact Hours	60					
Pre-Requisites/Co-Requisites	NA					

Course Perspective

This course introduces students to the essential techniques of character animation, focusing on developing the skills necessary to create lifelike and expressive animations. Students will learn to understand and implement detailed walk and run cycles, master the fundamentals of acting for character blocking, and refine their abilities in lip sync and facial expression techniques. Additionally, they will enhance the believability of their animations using eye darting, eye contact, and secondary animations.

By taking this course, students will gain crucial knowledge and skills that are directly applicable to real-world animation projects, making them well-prepared for advanced study and professional opportunities in the animation industry. The ability to animate realistic and expressive characters is a highly sought-after skill, and this course will provide students with the foundation they need to succeed in various media, including games, films, and digital content creation.

Course Outcomes

Upon completion of the course the learner will be:

CO1: Practicing and applying various techniques of animation production and related technologies to create basic 3D animations, building foundational skills through hands-on exercises.

CO2: Observing and analyzing different animation principles involved in the animation production process, understanding how these principles impact overall quality.

CO3: Adapting and Evaluating animation outcomes using self-acting references, modifying their work to refine the quality and accuracy of animations.

CO4: Originating and planning various animation exercises using 3D animation tools, creating a structured approach to skill development.

CO5: Preparing and curating a professional animation portfolio, selecting their best works to showcase their abilities to potential employers or clients.

Course Content

Unit 1: Walk Cycle **12 Hours**

- Understanding the characteristics of the character
- Video referencing Key poses
- Adding secondary animation Fine tuning the animation

Unit 2: Run Cycle **12 Hours**

- Blocking for run
- Primary animation for run
- Fine tuning the run

Unit 3: Animation for Games **12 Hours**

- Walk and Run baking
- Jump over objects
- Fighting actions

- Idle poses

Unit 4: Lip sync and facial expression **12 Hours**

- Importance of dialogue
- Lip sync
- Facial expression

Unit 5: Believability in Animation **12 Hours**

- Eye darting
- Eye contact
- Adding details in animation

Learning Experience

This **Character Animation in Game Development** course equips students with essential skills to create and integrate animations into video games using engines like Unreal and Unity. Students will learn key animation principles, master rigging and skinning, and develop animations through hands-on projects. The course emphasizes collaboration, using industry- standard tools like Maya and Blender. Regular feedback and a final showcase prepare students for real-world challenges, ensuring they graduate with a strong portfolio and practical experience in game animation.

Textbooks: -

- THE ANIMATOR'S SURVIVAL KIT: A MANUAL OF METHODS, PRINCIPLES AND FORMULASFOR CLASSICAL, COMPUTER, GAMES, STOP MOTION AND INTERNET ANIMATORS by RICHARD WILLIAMS, FABER & FABER

Suggested Readings: -

- CARTOON ANIMATION (COLLECTOR'S SERIES) by PRESTON BLAIR, WALTER FOSTERPUBLISHING
- AUTODESK MAYA 2014 ESSENTIALS by PAUL NAAS, WILEY

Open Educational Resources (OER)

- https://help.autodesk.com/view/MAYAUL/2024/ENU/?guid=GUID-0D0DCBE5-01BA-4AA2-BC4D-85C3285933AD

ADGAAV602	Augmented and Virtual Reality	L	T	S	P	C
Version 1.0		0	0	4	0	4
Category of Course	Major					
Total Contact Hours	60					
Pre-Requisites/Co-Requisites						

Course Perspective:
AR (Augmented Reality) and VR (Virtual Reality) are revolutionizing how users interact with digital content in games, design, education, simulation, and immersive storytelling. This course equips students with the knowledge and practical skills to conceptualize, design, and build interactive AR/VR experiences. From spatial storytelling to real-time interaction, students will explore Unity-based development and device-specific design strategies for mobile AR, head-mounted displays (HMDs), and more.

Course Outcomes:
By the end of this course, students will be able to:

CO1: Understand the core principles, devices, and ecosystems of AR and VR.
CO2: Develop immersive environments and interactive elements using Unity 3D.

CO3: Integrate 3D models, animation, and audio into AR/VR applications.

CO4: Deploy functional prototypes for mobile AR or VR headsets.

CO5: Analyse UX considerations unique to immersive media.

CO6: Present a complete AR/VR prototype with user feedback and testing.

Course Units:

- **Unit 1: Introduction to AR & VR**
  - History and evolution of immersive media
  - Difference between AR, VR, MR, and XR
  - Hardware overview: HoloLens, Oculus, HTC Vive, mobile AR
  - Application areas: games, film, education, healthcare

Unit 2: AR/VR Design Principles
- Human-centered spatial interaction
- World-building in 360° environments
- Interface design for non-traditional displays
- Understanding field of view (FoV), motion sickness, and user comfort

Unit 3: Unity for AR/VR Development
- Unity interface and project setup
- AR Foundation, Vuforia (for AR), XR Toolkit (for VR)
- Scene setup, interaction scripting, teleportation & locomotion
- Integrating 3D assets, audio, and UI elements

Unit 4: AR/VR Content Creation & Integration
- Importing optimized 3D assets (FBX, GLB)
- Animation and camera control for immersion
- Light baking, shaders, and real-time performance optimization

- Testing on devices (Android/iOS or Oculus Quest)

Unit 5: Project Development & Presentation

- Concept planning and wireframing
- Prototype development with interactivity
- User testing, iteration, and bug fixing
- Final showcase with documentation and screen recording

Learning Experience

- Tools Covered: Unity 3D, AR Foundation, XR Toolkit, Blender (for asset creation), GitHub (for version control)
- Industry Relevance: Prepares students for careers as AR/VR Developer, Immersive Designer, XR Game Designer

Textbooks: - Title: *Understanding Virtual Reality: Interface, Application, and Design*
Authors: William R. Sherman & Alan B. Craig

Suggested Readings: - Title: *Augmented Reality: Principles and Practice*
Authors: Dieter Schmalstieg & Tobias Hollerer

Open Educational Resources (OER) :
Title: *Coursera – Introduction to Augmented Reality and ARCore (by Google)*
Link: https://www.coursera.org/learn/ar

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGASE603	Sound Design & Editing	L	T	S	P	C
Version 1.0		**0**	**0**	**3**	**0**	**3**
Category of Course	Major					
Total Contact Hours	45					
Pre-Requisites/Co-Requisites						

Course Perspective:

This course introduces students to the essential principles, tools, and creative techniques of video editing and sound design for games, animation, and interactive media. With a blend of theory and hands-on training, students learn how editing and audio shape visual storytelling, mood, pacing, and player engagement. Emphasis will be placed on both cinematic storytelling (for cutscenes) and real-time in-game implementation.

Course Outcomes:

Upon successful completion of the course, the student will be:

CO1: Demonstrate understanding of editing techniques and visual continuity principles.
CO2: Edit video and gameplay footage using industry-standard tools (like Premiere Pro, DaVinci Resolve, or similar).
CO3: Design, record, and mix sound elements (dialogue, ambient, SFX, music) for game and animation projects.
CO4: Sync audio with animation and gameplay events for maximum impact.
CO5: Apply storytelling principles in non-linear and interactive formats.
CO6: Understand the role of audio-visual editing in user experience (UX), especially for cutscenes, trailers, and game moments.

Course Content:

Unit 1: Fundamentals of Editing

- History and evolution of editing (film → animation → games)
- Types of cuts: jump cut, match cut, cross-cutting, etc.
- 180° Rule, Continuity, Montage Theory
- Role of editing in storytelling

Unit 2: Video Editing Tools & Techniques

- Interface and workflow (Premiere Pro / DaVinci Resolve / Final Cut Pro)
- Timeline-based editing, transitions, titles, captions
- Working with game trailers and cutscenes
- Project: Edit a basic cutscene or game trailer

Unit 3: Sound Theory & Design

- Basics of sound: pitch, timbre, rhythm, harmony
- Foley, Ambient, Dialogue, Music & SFX – types and purpose
- Sound aesthetics in different genres of games & films
- Sound in immersive media (VR/AR)

Unit 4: Sound Production & Mixing

- Field and studio recording techniques

- Tools: Adobe Audition / Audacity / Reaper
- Noise removal, syncing, compression, EQ
- Voiceover and dubbing workflow
- Creating emotion through sound layering

Unit 5: Integration & Implementation

- Syncing sound in animation/game scenes
- Audio for Unity or Unreal Engine projects
- Adaptive & reactive audio systems in games
- Trailer editing project with complete sound mix
- Final Project: Soundtrack + Edited Video sequence

Learning Experience (Pedagogy)

- **Hands-On Practice**: Weekly lab sessions for editing and sound mixing
- **Scene Deconstructions**: Study iconic game/film scenes for sound & edit choices
- **Live Projects**: Students will re-edit a trailer or create a short cinematic cutscene
- **Guest Sessions**: Invite editors or sound designers from studios for practical insights
- **Portfolio-Oriented Assignments**: All tasks designed to be portfolio-worthy

Textbooks:

- *Game Audio Implementation: A Practical Guide Using the Unreal Engine* – Richard Stevens & Dave Raybould
- *The Game Audio Tutorial: A Practical Guide to Sound and Music for Interactive Games* – Richard Stevens & Dave Raybould

References:

- *The Sound Effects Bible* – Ric Viers
- *Sound Design: The Expressive Power of Music, Voice and Sound Effects in Cinema* – David Sonnenschein

Open Educational Resources (OER):

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGAAI604	AI for Design	L	T	S	P	C
Version 1.0		0	0	3	0	3
Category of Course	Major					
Total Contact Hours	45					
Pre-Requisites/ Requisites	NA					

Course Perspective:
This course introduces students to the intersection of Artificial Intelligence and Design. With the increasing integration of AI in animation, game development, UI/UX, and content creation, this subject empowers students to not just use AI tools but also understand how AI is shaping the design thinking process, automating tasks, enhancing user experience, and enabling generative creativity. It aims to bridge the gap between creative design and computational intelligence, preparing students for modern industry expectations.

Course Outcomes:
By the end of this course, students will be able to:
CO1. Understand core AI concepts relevant to design and creativity.
CO2. Evaluate the impact of AI in game development, animation workflows, and user experience design.
CO3. Use AI-based tools for generative design, animation, and asset creation.
CO4. Apply AI models for interactive design elements such as NPC behavior, procedural generation, and personalization.
CO5. Develop a critical perspective on ethical use, copyright, and future potential of AI in design professions.

3. Course Content
Unit 1: Introduction to AI in Design
- Definition and history of AI in the creative domain
- Overview of AI use-cases in animation, games, UI/UX, and media
- Concept of Machine Learning, Generative AI, NLP, and Computer Vision for designers
- Limitations and potential of AI in human-centered design

Unit 2: Generative Design and Content Creation
- AI-driven generative tools (e.g., DALL·E, Midjourney, RunwayML, Kaiber, Sora)
- Prompts, visual inputs, and dataset-based creation
- Case studies: AI-based character design, moodboards, and asset generation
- Creative control and AI collaboration

Unit 3: AI in Animation & Game Design
- AI-assisted animation tools (e.g., Cascadeur, RADiCAL, EbSynth)
- Procedural generation in game environments
- Smart NPCs, behavior trees, reinforcement learning basics
- Using Unity ML-Agents or similar tools for AI behaviors in games

Unit 4: AI for UX, Voice & Emotion Design
- Natural Language Processing in UI/UX (chatbots, smart interfaces)
- Emotion detection, facial recognition & AI-based interactions
- Voice cloning & adaptive soundscapes
- AI in accessibility design

Unit 5: Ethical Implications and Future of AI in Design
- Bias in AI tools and dataset ethics

- Copyright & originality debates in generative AI
- Role of designers in AI governance
- Preparing for hybrid creative roles of the future

Learning Experience

- **Hands-on Workshops** using real-world AI tools for design (e.g., RunwayML, Adobe Firefly, ChatGPT, Luma AI, Sora, etc.)
- **Live Industry Talks** with AI-driven design startups and professionals
- **Mini Projects** focused on AI-generated game characters, environments, or UI layouts
- **Case Study Discussions** on AI ethics, failures, and successes
- **Critical Reflection Assignments** on how AI is changing the role of a designer in society

Textbooks: ***Artificial Intelligence and Games*** (2nd Edition, 2025)
Authors: Georgios N. Yannakakis & Julian Togelius (Springer)

Readings: - ***AI for Games*** (3rd Edition, 2019) by Ian Millington
Open Educational Resources (OER):

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGALP605	Live Project 2	L	T	S	P	C
Version 1.0		0	0	4	0	4

Category of Course	Major
Total Contact Hours	60
Pre-Requisites/Co-Requisites	

Course Perspective

This course enables students to undertake an industry-mentored project where they apply their foundational skills in design, game development, or animation toward planning and pre-production. Aligned with their areas of specialization, students will work independently or in teams under the guidance of an external expert. The course emphasizes professional collaboration, research, documentation, and pitch development—laying the groundwork for more advanced project execution in later semesters.

Course Outcomes

Upon successful completion of the course, the student will be:

CO1: Develop a concept brief aligned with an industry mentor's guidance.

CO2: Conduct relevant research and gather visual/audio/reference material.

CO3: Create pre-production assets such as GDDs, storyboards, scripts, or layout plans.

CO4: Collaborate effectively with peers and professionals.

CO5: Present the consolidated proposal to a review panel with supporting documentation.

Course Content

Unit 1: Project Discovery and Mentor Alignment

- Identifying individual or group project themes (game, animation, hybrid)
- Project scoping and outcome mapping
- Matching with external mentor and setting expectations
- Creating a project brief and preliminary development log

Unit 2: Reference Gathering and Creative Research

- Building moodboards, collecting visual references, and design benchmarking
- Studying industry examples, genre analysis, and competitor breakdowns
- Exploring target audience, gameplay/narrative trends, or animation tone
- Mentor feedback on research clarity and direction

Unit 3: Pre-Production Planning and Documentation

- Game design document (GDD) or story/script outline creation
- Storyboards, level layouts, or visual development (as per project type)
- Flowcharts, asset lists, or timeline breakdowns
- Review and revision sessions with mentor and faculty

Unit 4: Project Structuring and Workflow Setup

- Defining milestones, deliverables, and collaborative responsibilities

- Creating pitch decks, task boards (Trello/Notion), and production logs
- Visual mockups, greybox templates, or test animations (if applicable)
- Dry run for jury presentation and self-evaluation preparation

Unit 5: Final Pitch, Review & Submission

- Final presentation to internal/external jury
- Submission of consolidated project document (bible/pitch packet)
- Mentor feedback loop and reflection
- Peer showcase and documentation archive

Learning Experience

This is a mentorship-driven studio module where students apply foundational skills toward real-world project ideation and planning. They will receive guidance from an external expert and faculty coordinator through check-ins, feedback sessions, and milestone reviews. The emphasis is on communication, professionalism, clarity of vision, and documentation quality. Work may be collaborative, or individual based on scope and mentor alignment.

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

SEMESTER VII

ADGADS702	Digital Sculpting	L	T	S	P	C
Version 1.0		0	0	4	0	4
Category of Course	Major					
Total Contact Hours	60					
Pre-Requisites/Co-Requisites						

Course Perspective:

This course introduces students to the art and technique of digital sculpting, a key process in modern character creation, asset detailing, and digital artistry across the gaming, animation, and VFX industries. Students will learn to sculpt high-resolution models that are production-ready, emphasizing creativity, anatomical accuracy, stylization, and technical workflow.

India's booming gaming, film, and virtual production industry demands artists proficient in sculpting tools such as ZBrush. Beyond technical skills, students will gain an understanding of how sculpting can serve storytelling, user immersion, and character appeal in commercial and creative domains.

Course Outcomes:

By the end of this course, students will be able to:

CO1: Develop digital sculpts based on real and imaginary characters or objects.

CO2: Understand and apply anatomy, proportion, and stylization in sculpting.

CO3: Use industry-standard tools like ZBrush for high-resolution sculpting.

CO4: Generate displacement and normal maps for game and animation pipelines.

CO5: Demonstrate a design-thinking approach in digital sculpting for narrative or functional goals.

Course Units:

- **Unit 1: Introduction to Digital Sculpting**
  - Understanding digital sculpting vs. traditional modeling
  - Overview of sculpting tools (ZBrush, Mudbox, Blender Sculpt)
  - UI and brush basics in ZBrush
  - Concepts of voxels, subdivision, and dynamesh

Unit 2: Sculpting Organic Forms

- Sculpting heads, faces, and full bodies
- Primary, secondary, and tertiary forms
- Anatomy reference & proportion study
- Stylized vs. realistic sculpts

Unit 3: Hard Surface Sculpting

- Tools & techniques for hard surface modeling
- Creating weapons, armor, gadgets
- Kitbashing and insert mesh brushes
- Detailing & paneling methods

Unit 4: Detailing and Texturing Workflow

- Surface detailing (wrinkles, pores, folds, damage)
- Creating and using alphas & custom brushes
- PolyPaint and vertex painting basics
- Preparing models for baking & rendering

Unit 5: Pipeline Integration and Portfolio Development

- Retopology and map baking
- Exporting maps for games or animation
- Rendering turntables and presentation in ZBrush
- Creating an industry-standard sculpting portfolio

4. Learning Experience

- Hands-On Projects: Each student will complete multiple sculpts culminating in a polished character bust or asset.
- Industry Review: Mid-semester and final critiques by industry professionals or alumni working in sculpting/VFX studios.
- Tool Exposure: ZBrush (Primary), Blender Sculpt Mode (Secondary), Substance Painter (for texturing preview).

Textbooks: - ***Getting Started in ZBrush: An Introduction to Digital Sculpting and Illustration*** by Gregory S. Johnson (CRC Press, 2024)
Readings: - ***ZBrush Digital Sculpting: Human Anatomy*** by Scott Spencer (Wiley, 2011)

Open Educational Resources (OER):
Title: *ZBrushClassroom – Free Tutorials by Pixologic*
Link:
https://pixologic.com/zclassroom/

Evaluation Scheme

	Evaluation Components	Weightage
INTERNAL (50 Marks)	**Continuous Assessment** (Projects, Assignments, Presentation, Case Studies, etc.)	20 Marks
	Internal Jury	30 Marks
EXTERNAL (50 Marks)	**End-Term Studio Exam**	20 Marks
	External Jury	30 Marks

ADGAPF801	DEGREE PROJECT/INTERNSHIP	L	T	S	P	C

	/FREELANCING					
Version 1.0		**0**	**0**	**0**	**0**	**14**
Category of Course	Major					
Total Contact Hours						
Pre-Requisites/ Co-Requisites						

Course Perspective

The **Course Perspective** for Degree Project/Internship/Freelancing focuses on bridging academic learning with real-world experience.

- **Degree Project**: Emphasizes integrating and applying knowledge from various courses to tackle a substantial, real-world problem. It allows students to demonstrate their skills through a comprehensive project that showcases their abilities and understanding.
- **Internship**: Highlights gaining practical, hands-on experience in a professional environment. It provides students with exposure to industry practices, networking opportunities, and insights into their chosen field, enhancing their career readiness.
- **Freelancing**: Focuses on independent work and client management, offering students the chance to build a diverse portfolio and develop entrepreneurial skills. It provides flexibility and practical experience in managing projects and client relations.

Overall, the course perspective aims to equip students with practical experience, enhance their employability, and prepare them for successful careers by applying their academic knowledge in real-world contexts.

Course Outcomes

Upon completion of the course the learner will be able to:

CO1: Students will develop employer-valued skills such as strategic management, analytic thinking, teamwork and communications.

CO2: Students will observe and participate in business operations and learn decision-making from mentors and experience.

CO3: Students will get hands-on exposure in the domain in which they are performing their job.

CO4: Students will expand their network of professional relationships and contacts.

Course Content

Students must undergo practical training of a minimum of three months in game design and animation related industries/ training centers/ co-operate offices so that they become aware of the practical application of theoretical concepts studied in the classrooms.

Learning Experience

The Learning Experience for Degree Project/Internship/Freelancing offers a range of practical, hands-on opportunities:

- Degree Project: Students will engage in a comprehensive project that requires applying theoretical knowledge to solve real-world problems. This involves research, design, development, and presentation, allowing students to demonstrate their skills and creativity.
- Internship: Students will work directly with industry professionals, gaining practical experience and exposure to professional practices. They will be involved in day-to- day operations, contributing to real projects, and receiving feedback that enhances their skills and career readiness.
- Freelancing: Students will take on independent projects for clients, managing their own workflow and deadlines. This experience includes client interaction, project management, and self-directed work, helping students build a diverse portfolio and entrepreneurial skills.

Each component provides valuable experience, preparing students for their future careers by applying their academic knowledge in professional and practical settings.