SIXTH SEMESTER

'GAMING
&
ANIMATION'
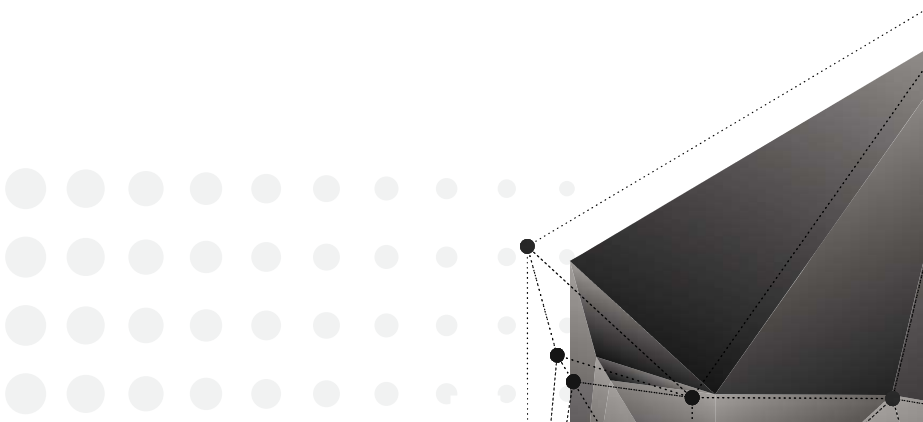
VIRTUAL REALITY

Course Code:	506001
Course Title	Virtual Reality
No. of Credits	8 (TH:6,T:0,P:4)

COURSE OUTCOMES: At the end of the course, the student will be able to:

1. Understand the fundamental concepts and principles of virtual reality (VR) technology.

2. Gain proficiency in using VR hardware, software, and development tools.

3. Develop skills in creating immersive VR experiences for gaming and animation.

4. Apply design principles to optimize user experience in VR environments.

5. Explore emerging trends and advancements in VR technology and its applications in gaming and animation.

COURSE CONTENTS

Unit 1: Introduction to Virtual Reality
- Definition, history, and evolution of virtual reality

Unit 2: VR Hardware & Immersive Technologies
- Overview of VR hardware, including headsets & controllers.
- Different types of VR headsets & their features.
- Introduction to motion tracking and spatial mapping.

Unit 3: VR Design & User Experience
- Design principles for creating immersive VR environments
- Optimizing user experience in VR applications and games

Unit 4: 3D Modeling & Asset Creation for VR
- List of 3D modeling tools for VR environments
- Creating and importing 3D assets for VR experiences

Unit 5: VR Audio & Spatial Sound Design
- Understanding the role of audio in VR experiences
- Implementing spatial audio and sound design for VR

Unit 6: VR Development Platforms
- Introduction to VR development platforms.

Unit 8: VR Performance Optimization and Testing
- Techniques for optimizing performance in VR applications.
- Testing & debugging VR experiences for quality assurance.

Unit 9: VR Game Design and Storytelling
- Game design principles to VR experiences
- Creating compelling narratives and storytelling in VR

PRACTICAL OUTCOMES:

1. Develop familiarity with digital media tools, including audio and video equipment, software, and formats.

2. Master sound design principles, audio mixing, and mastering techniques for improved media quality.

3. Acquire video editing skills encompassing cutting, trimming, transitions, and basic color correction.

4. Explore advanced video editing, including color grading, effects, compositing, and output for diverse platforms.

5. Gain hands-on experience in VR development, creating immersive environments and interactive experiences.

6. Hone optimization and problem-solving abilities, ensuring efficient media production and VR application testing.

List of Practicals :

1. Practical exercises for familiarization with VR Hardware
2. Practical exercises for Basic 3D Modeling for VR Assets
3. Practical exercises for creating Immersive VR Environments
4. Practical exercises for implementing Spatial Audio in VR
5. Practical exercises for advanced 3D Asset Creation for VR
6. Practical exercises for developing a Simple VR Experience
7. Practical exercises for motion Tracking and Real-world Integration
8. Practical exercises for designing VR Game Concepts
9. Practical exercises for performance Optimization for VR
10. Practical exercises for testing and debugging VR Applications

SUGGESTED BOOKS:

1. "Virtual Reality (MIT Press Essential Knowledge Series)" by Jaron Lanier
2. "Unity Virtual Reality Projects" by Jonathan Linowes
3. "Learning Virtual Reality: Developing Immersive Experiences and Applications for Desktop, Web, and Mobile" by Tony Parisi
4. "Virtual Reality Insider: Guidebook for the VR Industry" by Sky Nite
5. "The VR Book: Human-Centered Design for Virtual Reality" by Jason Jerald
6. "Designing Virtual Worlds" by Richard Bartle

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3D SCULPTURING (Z BRUSH, MUD BOX)

Course Code:	506002
Course Title	3D Sculpturing (Z Brush, Mud Box)
No. of Credits	4 (TH:4,T:0,P:0)

COURSE OUTCOMES: At the end of the course, the student will be able to:

1. Gain proficiency in using ZBrush and Mudbox for 3D sculpturing and digital sculpturing workflows.

2. Understand the principles and techniques of 3D sculpturing for creating realistic and stylized characters, creatures, and objects.

3. Develop skills in detailing, texturing, and refining 3D sculpts to achieve high-quality results.

4. Explore the use of digital sculpturing tools in the gaming and animation industry.

5. Apply sculpturing techniques to enhance the visual appeal and aesthetics of 3D models.

COURSE CONTENTS

Unit 1: Introduction to Digital Sculpturing

- Overview of digital sculpturing software (ZBrush and Mudbox).
- Introduction to sculpturing brushes, tools & user interface.
- Overview of sculpturing workflows and techniques.

Unit 2: Sculpturing Fundamentals

- Anatomy & proportions for character sculpturing.
- Blocking out and refining basic forms and shapes.
- Sculpturing details like muscles, wrinkles & facial features.

Unit 3: Organic and Character Sculpturing

- Creating organic forms and sculpturing creatures.
- Sculpturing stylized characters and creatures.
- Incorporating expressions & emotions into character sculpts.

Unit 4: Hard Surface Sculpturing

- Techniques for sculpturing hard surface objects.
- Creating intricate details and mechanical parts.
- Combining organic and hard surface elements in sculpts.

Unit 5: Texturing and Painting

- Understanding UV mapping for 3D sculpts
- Painting textures and materials onto sculpts
- Using polypainting and texture projection techniques

Unit 6: Refining and Detailing
- Refining sculpts with advanced brush techniques
- Adding finer details and remove surface imperfections

Suggested Books:
1. "ZBrush Character Sculpturing: Volume 1" by Rafael Grassetti
2. "Introducing ZBrush 4" by Eric Keller
3. "Digital Sculpturing with Mudbox: Essential Tools and Techniques for Artists" by Mike de la Flor
4. "The Beginner's Guide to ZBrush" by 3DTotal Publishing
5. "ZBrush Creature Design: Creating Dynamic Concept Imagery for Film and Games" by Scott Spencer
6. "Mudbox 2019 Cookbook: Over 60 recipes to sculpt digital masterpieces like a modern Michelangelo" by Termeh Shafie

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ADVANCED GAME DEVELOPMENT LAB (UNITY 3D)

Course Code:	506003
Course Title	Advanced Game Development Lab (Unity 3D)
No. of Credits	2 (TH:0,T:0,P:4)

• **Practical Outcomes :**

1. Gain practical experience in using Unity 3D game engine to develop interactive game environments.

2. Understand and apply fundamental game design principles to create engaging gameplay mechanics and systems.

3. Acquire proficiency in C# scripting for game development, including handling game events and player interactions.

4. Design and implement user interfaces that enhance the player experience and provide essential information.

5. Analyze and troubleshoot common game development issues using Unity 3D, including debugging and resolving bugs.

6. Collaborate effectively in teams to develop polished and engaging game projects, managing tasks and integrating different components.

Practical Exercises:

1. Implement a basic player movement system using Unity's input handling and physics components.

2. Develop a scoring system that increments when the player collects in-game items or achieves specific objectives.

3. Create a main menu with interactive buttons that allow the player to start the game, access options, and exit.

4. Design a game level using Unity's scene editor, including obstacles, platforms, and environmental interactions.

5. Add background music that plays throughout the game, and trigger sound effects when the player interacts with certain objects.

6. Implement a player health system that decreases when the player collides with obstacles or enemies, and ends the game when health reaches zero.

7. Create transitions between different UI screens, such as transitioning from the main menu to the gameplay screen.

8. Apply techniques like object pooling and efficient collision detection to optimize game performance.

9. Identify and fix common issues like collisions not registering or UI elements not displaying properly.

10. Work in teams to develop a polished game project, assigning tasks, integrating various components, and ensuring a cohesive final product.

SUGGESTED BOOKS:

1. "Unity in Action: Multiplatform Game Development in C#" by Joe Hocking

2. "Mastering Unity 2D Game Development" by Simon Jackson

3. "Unity Game Development Cookbook" by Paris Buttfield-Addison, Jon Manning, and Tim Nugent

4. "Learning C# by Developing Games with Unity" by Harrison Ferrone

5. "Unity Virtual Reality Projects" by Jonathan Linowes

6. "Unity UI Cookbook" by Francesco Sapio

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'Open Elective 1-1'
INFORMATION SECURITY

Course Code:	436006
Course Title	Information Security
No. of Credits	4 (TH:4,T:0,P:0)

COURSE OUTCOMES :

1. Identify and evaluate security features of operating systems and understand their role in ensuring information security.

2. Analyze security weaknesses in popular networking protocols and devices, and implement security solutions to mitigate the associated risks.

3. Understand the basics of cryptography to secure data and communication.

4. Evaluate and select appropriate network security products for effective protection against cyber threats.

COURSE CONTENTS

Unit - 1 :

Introduction to Information Security, Various aspects of information security, Security Features of Operating Systems – Authentication, Logs, Audit Features, File System Protection, User Privileges, RAID options, Anti-Virus Software, etc.

Unit - 2 :

Security weaknesses in popular networking protocols – IP, TCP, UDP, RIP, OSPF, HTTP, SMTP, etc.; security weaknesses in common networking devices – Hub, switch, router, WiFi; Security solutions to mitigate security risk of networking protocols (IPSec, HTTPS, etc) and devices (VLAN, VPN, Ingress Filtering, etc).

Unit - 3 :

Basics of Cryptography, Public Key Infrastructure Fundamental.

Unit - 4 :

Network Security Products – Firewall, IDS/IPS, VPN Concentrator, Content Screening Gateways etc.

Unit - 5 :

Introduction to Security Standards – ISO 27001, Indian IT Act, IPR Laws, Security Audit.

Reference Books :

1. Information Security and Cyber Laws, Sarika Gupta, Khanna Publishing House

2. RFCs of protocols listed in content (https://www. ietf.org)

3. Various Acts, Laws and Standards (IT Act, ISO27001 Standard, IPR and Copyright Laws, etc.)

4. Security Guideline documents of Operating Systems (OS Manual, Man Pages, etc)

5. https://www.cert-in.org.in/

6. https://www.sans.org/

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'Open Elective 1-2'
NETWORK SECURITY

Course Code:	476002
Course Title	Network Security
No. of Credits	4 (TH:4,T:0,P:0)

COURSE OUTCOME :

1. Develop Concept of Security needed in Communication of data through computers and networks along with Various Possible Attacks.

2. Understand Various Encryption mechanisms for secure transmission of data and management of key required for required for encryption.

3. Understand authentication requirements and study various authentication mechanisms.

3. Understand network security concepts and study different Web security mechanisms.

COURSE CONTENTS

Unit - I : Introduction:

1. Network Security: Definitions & Concepts
2. Access Control
3. Risk Vs Vulnerability
4. Security Threats and Attacks Types

Unit II : Network Security Methods:

1. Firewalls
2. IP Security
3. VPN
4. Intrusion Detection
5. Web Security
6. SSL
7. TLS

Unit- III : Network Threats:

1. Attack Sources: Classification with brief description
2. Attack in different layers of network

Unit - IV : Authentication:

1. Authentication Requirements
2. Message Authentication Codes
3. User Authentication: Password, Certificate based & Biometric Authentication

SUGGESTED BOOKS:

1. "Cryptography & Network Security", PHI William Stalling

2. "Cryptography & Network Security", Mc Graw Hill Atul Kahate

3. "Cryptography & Network Security", PHI 4 Forouzan

4. "Computer Security", Pearson Education. Matt Bishop

5. Vlabs, "Cryptography Lab" http://cse29-iiith.vlabs.ac.in/

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│  'Open Elective 2-1'    │
│   C# AND JAVA           │
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Course Code:	506005
Course Title	C# and Java
No. of Credits	4 (TH:4,T:0,P:0)

COURSE OUTCOMES:- After completion of the course the student will be able to-

1. Gain a comprehensive understanding of the C# and Java programming languages and their features.

2. Develop proficiency in writing efficient and robust code using C# and Java for various applications.

3. Acquire knowledge of object-oriented programming (OOP) concepts and apply them effectively in software development.

4. Understand the fundamentals of application development using C# and Java frameworks and libraries.

5. Demonstrate the ability to design, implement, and debug programs in C# and Java, adhering to best practices.

6. Collaborate effectively in a team environment, demonstrating strong communication and problem-solving skills in programming projects.

COURSE CONTENTS

1. **Introduction to C# and Java:**
   - Overview of C# and Java programming languages
   - Environment setup and development tools
   - Basic syntax, data types, variables, and operators

2. **Control Structures and Flow Control:**
   - Decision-making statements (if, switch)
   - Looping constructs (for, while, do-while)
   - Exception handling and error management

3. **Object-Oriented Programming (OOP) Concepts:**
   - Classes, objects, and instances
   - Inheritance, polymorphism, and encapsulation
   - Abstract classes, interfaces, and packages

4. **Data Structures and Algorithms:**
   - Arrays, lists, and collections
   - Sorting and searching algorithms
   - Recursion and dynamic programming

5. **File Handling and Input/Output Operations:**
   - Reading from and writing to files
   - Serialization and deserialization of objects
   - Command-line input and output

6. **Database Connectivity and SQL:**
   - Introduction to database management systems
   - Database connectivity using C# and Java
   - Querying and manipulating data using SQL

7. **GUI Application Development:**
   - Graphical User Interface (GUI) design principles
   - GUI component libraries and frameworks

SUGGESTED BOOKS:

1. "C# Programming Yellow Book" by Rob Miles
2. "Head First Java" by Kathy Sierra and Bert Bates
3. "C# 9.0 in a Nutshell: The Definitive Reference" by Joseph Albahari and Ben Albahari
4. "Effective Java" by Joshua Bloch
5. "Java: A Beginner's Guide" by Herbert Schildt
6. "C# 8.0 and .NET Core 3.0 - Modern Cross-Platform Development" by Mark J. Price

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'Open Elective 2-2'
OPERATIONS RESEARCH

Course Code:	436002
Course Title	Operations Research
No. of Credits	4 (TH:4,T:0,P:0)

COURSE OUTCOMES: At the end of the course, the student will be able to:

1. Understand the formulation of Liner Programming (LP).

2. Analyze and Convert the problem into a mathematical model.

3. Understand and implement the transportation problems at workplace.

4. Understand sequencing to optimize the process time for n- job and m-machine.

5. Identify and select suitable methods for various games and apply the LP.

COURSE CONTENTS

Unit - I :

Development of operation research and its definition, characteristics & phases of scientific method, Type of models, General methods for solving operations research models.

Unit - II :

Allocation: Introduction to linear programming formulation (Basic idea only), Various analysis methods.

Unit - III :

Transportation problem, Unbalanced transportation problems, Degeneracy, Assignment problem, Formulation optimal solution.

Unit - IV :

Sequencing: Introduction, Terminology, notations and assumptions, Case study of problems with n-jobs and two machines, optimal sequence algorithm, Case study of problems with n-jobs and three machines.

Reference Books:

1. Operations Research: an introduction, Hamdy A. Taha, Pearson Education.
2. Operations. Research: theory and application, J.K. Sharma, Macmillan Publishers.
3. Introduction to Operations Research: concept and cases, Frederick S. Hillier and Gerald J. Lieberman, Tata McGraw-Hill

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Course Code:	506006
Course Title	Digital Audio & Video Production
No. of Credits	4 (TH:4,T:0,P:0)

COURSE OUTCOMES: At the end of the course, the student will be able to:

1. Understanding digital audio and video concepts, including file formats, codecs, and compression, and how they apply to media production.

2. Familiarity with audio and video equipment and software used in production, including recording and editing techniques.

3. Basic principles and techniques of audio and video editing, including cutting, trimming, and transitions.

4. Knowledge of sound design principles and techniques, including Foley and sound effects creation, as well as mixing and mastering techniques for audio.

5. Understanding of video editing principles and techniques, including color correction and grading, video effects and compositing, and outputting and exporting files for various media platforms.

COURSE CONTENTS

Unit - I :

Introduction to digital audio and video concepts, file formats, codecs, and compression.

Unit - II :

Different types of audio and video equipment and software used in production.

Unit - III :

Basic audio and video techniques for recording and editing such as cutting, trimming, and transitions (Overview Only).

Unit - IV :

Sound design principles and techniques, including Foley and sound effects creation.

Unit - V :

Mixing and mastering techniques for audio, Color correction and grading techniques for video, Video effects, export of files for various media platforms, including web and broadcast.

Note :- Digital Audio and Video Production is a subject that focuses on the creation and manipulation of digital audio and video files using computer software.

SUGGESTED BOOKS:

1. "The Filmmaker's Handbook: A Comprehensive Guide for the Digital Age" by Steven Ascher and Edward Pincus

2. "In the Blink of an Eye: A Perspective on Film Editing" by Walter Murch

3. "Audio Postproduction for Film and Video" by Jay Rose

4. "The Art of Foley" by Vanessa Theme Ament

5. "Mixing Audio: Concepts, Practices, and Tools" by Roey Izhaki

6. "Color Correction Handbook: Professional Techniques for Video and Cinema" by Alexis Van Hurkman

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'Program Elective 1-2'
ADVANCED WEB TECHNOLOGIES

Course Code:	506007
Course Title	Advanced Web Technologies
No. of Credits	4 (TH:4,T:0,P:0)

COURSE OUTCOMES: At the end of the course, the student will be able to:

1. Understand advanced web technologies and their applications in gaming and animation.

2. Develop proficiency in web development tools, frameworks, and languages.

3. Gain practical experience in creating interactive web applications for gaming and animation.

4. Explore emerging trends in web technologies and their impact on the gaming and animation industry.

5. Apply web technologies to enhance user experience and optimize performance in gaming and animation projects.

COURSE CONTENTS

Unit 1: Introduction to Advanced Web Technologies
- Overview of advanced web technologies in gaming and animation
- Web development tools and frameworks

Unit 2: Advanced JavaScript & Frameworks (overview only):
- Introduction to advanced JavaScript concepts
- Introduction to JavaScript frameworks (e.g., React, Vue.js)

Unit 3: Web APIs and Interactive Web Graphics
- Working with the Canvas API for interactive graphics
- Introduction to WebGL for 3D graphics in the browser

Unit 4: Server-Side Development & Database Integration
- Introduction to server-side web development (e.g., Node.js)
- Building APIs and handling data in web applications

Unit 7: Web Security and Authentication
- Fundamentals of web security
- Need of authentication and authorization in web applications

Suggested Books:

1. "Eloquent JavaScript: A Modern Introduction to Programming" by Marijn Haverbeke
2. "React: Up and Running" by Stoyan Stefanov
3. "HTML5 Canvas" by Steve Fulton and Jeff Fulton
4. "Node.js in Action" by Mike Cantelon, Marc Harter, TJ Holowaychuk, and Nathan Rajlich
5. "CSS Animations and Transitions for the Modern Web" by Steven Bradley
6. "High Performance Web Sites: Essential Knowledge for Front-End Engineers" by Steve Souders

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'AUDIT COURSE'
INDIAN CONSTITUTION

Course Code:	AS601
Course Title	Indian Constitution (Audit Course)
No. of Credits	0 (TH:2,T:0,P:0)

COURSE OUTCOMES: After completion of the course the students are able to:

1. Understand the historical background and significance of the Indian Constitution, including the process of its making and the principles enshrined in it.

2. Analyze and interpret key elements of the Constitution.

3. Describe the structure and functioning of the Union Government.

4. Explain the roles and powers of the State Government.

5. Examine the structure and responsibilities of local administration, such as District Administration, Municipal Corporations, and Zila Panchayats.

6. Understand the role and functioning of the Election Commission.

COURSE CONTENTS

1. **The Constitution :**
   1.1 Introduction
   1.2 The History of the Making of the Indian Constitution
   1.3 Preamble & the Basic Structure.
   1.4 Fundamental Rights & Duties.
   1.5 Directive Principles of State Policy (DPSP).

2. **Union Government :**
   2.1 Structure of the Indian Union
   2.2 President– Role and Power
   2.3 Prime Minister and Council of Ministers
   2.4 Lok Sabha and Rajya Sabha

3. **State Government :**
   3.1 Governor– Role and Power
   3.2 Chief Minister and Council of Ministers

4. **Local Administration :**
   4.1 District Administration
   4.2 Municipal Corporation
   4.3 Zila Panchayat

5. **Election Commission :**
   5.1 Composition, Role and Functioning of :
       5.1.1 Chief Election Commission
       5.1.2 State Election Commission

Suggested Learning Resources :

1. Ethics and Politics of the Indian Constitution, Rajeev Bhargava, Oxford University Press, New Delhi,

2. The Constitution of India, B.L. Fadia, Sahitya Bhawan; New edition (2017)

3. Introduction to the Constitution of India, D.D. Basu, Lexis Nexis; Twenty-Third 2018 edition

Suggested Software / Learning Websites :

1. https://www.constitution.org/cons/india/const.html

2. http://www.legislative.gov.in/constitution-of-india

3. https://www.sci.gov.in/constitution

4. https://www.toppr.com/guides/civics/the-indian-constitution/the-constitution-of-india/

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ENTREPRENEURSHIP AND START-UPS
(Common in all branches of Engineering)

Course Code:	AS602
Course Title	Entrepreneurship and Start-ups
No. of Credits	4 (TH:4,T:0,P:0)

COURSE OUTCOMES: At the end of the course, the student will be able to:

1. Develop an understanding of the concept of entrepreneurship and its relevance in the engineering field, including the importance of creativity, innovation, and problem-solving.

2. Generate and evaluate entrepreneurial ideas, identifying market opportunities and target customers, and assessing the feasibility of a start-up venture.

3. Create a comprehensive business plan and formulate effective strategies for a start-up venture, encompassing marketing, operations, finance, and growth.

4. Comprehend the legal and regulatory considerations involved in establishing and operating a business, ensuring compliance and mitigating legal risks.

5. Design and implement marketing and sales strategies to effectively position and promote the start-up, considering market segmentation, branding, and customer acquisition.

6. Apply financial management principles to plan and manage the financial aspects of a start-up, including budgeting, financial forecasting, and resource allocation.

COURSE CONTENTS

1. **Introduction to Entrepreneurship**
   - Concept of entrepreneurship
   - Importance of entrepreneurship in the engineering field
   - Traits and characteristics of successful entrepreneurs

2. **Ideation and Opportunity Identification**
   - Generating entrepreneurial ideas
   - Evaluating market opportunities
   - Conducting market research and feasibility analysis
   - Identifying target customers and their needs

3. **Business Planning and Strategy**
   - Business objectives and goals
   - Need of Business plan
   - Formulating business strategies
   - Assessing risk and managing uncertainty

4. **Legal and Regulatory Considerations**
   - Legal forms of business entities
   - Compliance with regulations and licenses
   - Contracts and agreements in entrepreneurship

5. **Marketing and Sales Strategies**
   - Need of marketing plan
   - Methods for marketing
   - Pricing strategies
   - Sales and distribution

6. **Financial Management for Start-ups**
   - Financial planning and budgeting
   - Funding sources and raising capital

7. **Operations and Supply Chain Management**
   - Designing efficient operations processes
   - Supply chain management for start-ups
   - Quality management and control
   - Logistics and inventory management

8. **Human Resource Management**
   - Leadership and organizational culture
   - Performance management and motivation

9. **Entrepreneurial Mindset and Growth**
   - Nurturing creativity and innovation
   - Overcoming challenges and failures

Reference Books:

1. "The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses" by Eric Ries

2. "The Startup Owner's Manual: The Step-By-Step Guide for Building a Great Company" by Steve Blank and Bob Dorf

3. "Disciplined Entrepreneurship: 24 Steps to a Successful Startup" by Bill Aulet

4. "Zero to One: Notes on Startups, or How to Build the Future" by Peter Thiel and Blake Masters

5. "The Art of Startup Fundraising: Pitching Investors, Negotiating the Deal, and Everything Else Entrepreneurs Need to Know" by Alejandro Cremades

6. "Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers" by Alexander Osterwalder and Yves Pigneur

7. "Venture Deals: Be Smarter Than Your Lawyer and Venture Capitalist" by Brad Feld and Jason Mendelson

8. "The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail" by Clayton M. Christensen

9. "Founders at Work: Stories of Startups' Early Days" by Jessica Livingston.

10. "Start with Why: How Great Leaders Inspire Everyone to Take Action" by Simon Sinek.

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MAJOR PROJECT-II

Course Code:	AS603
Course Title	Major Project - II
No. of Credits	3 (TH:0,T:0,P:6)

Introduction : Major Project-II represents the pinnacle of the diploma program, where students demonstrate their acquired knowledge and skills through the execution of a practical project. This capstone experience focuses on project implementation, problem-solving, data analysis, and effective communication. It challenges students to tackle real-world issues and apply their learning to find innovative solutions. Major Project-II nurtures responsibility, autonomy, and professionalism, preparing students for a successful transition into their future careers.

1. **Project Execution (20%):**
   - Successful implementation of the project plan, adhering to the approved methodology.
   - Demonstrating practical skills, technical knowledge, and attention to detail during project execution.

2. **Regular Monitoring (10%):**
   - Providing periodic progress updates to project advisors and faculty mentors, showcasing responsibility and timely communication.
   - Ability to adapt and make necessary adjustments to the project timeline as needed.

3. **Data Analysis (15%):**
    - Applying appropriate techniques and tools to analyze collected data.
    - Deriving meaningful insights and drawing well-supported conclusions.

4. **Problem-Solving (15%):**
    - Identifying and addressing challenges and hurdles encountered during project execution.
    - Demonstrating innovative thinking and resourcefulness in problem-solving.

5. **Report Writing (15%):**
    - Preparing a comprehensive project report with a well-structured and organized presentation of the project journey.
    - Clearly explaining the methodology, findings, and conclusions in a coherent manner.

6. **Presentation (15%):**
    - Delivering a compelling and engaging project presentation to a panel of faculty members & experts.
    - Demonstrating effective communication skills and confidence during the project defense.

7. **Final Evaluation (10%):**
    - Punctuality and adherence to project deadlines.
    - Demonstrating initiative and taking ownership of the project.
    - Overall professionalism and commitment exhibited throughout the project.

Conclusion: Major Project-II serves as a significant milestone in the academic journey of diploma students. By incorporating marks distribution, the evaluation becomes more transparent, allowing students to understand the weighting of each aspect. Through project execution, problem-solving, data analysis, and effective communication, students will not only showcase their academic prowess but also their readiness to embrace real-world challenges. This capstone experience equips students with the skills and confidence needed to thrive in their chosen professions, paving the way for a successful and rewarding future.

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SEMINAR

Course Code:	AS604
Course Title	Seminar
No. of Credits	1 (TH:2,T:0,P:0)

Guidelines for Seminar Presentation:

1. Topic Selection:

Choose a topic that is relevant to the field of gaming and animation, and that interests both the speaker & the audience. Consider emerging trends, technological advancements, or specific areas of expertise within the industry.

2. Research and Information Gathering:

Conduct thorough research on your chosen topic to gather relevant information, statistics, case studies, and examples. Utilize reputable sources such as academic journals, industry publications, and credible websites to ensure the accuracy of information gathered.

3. Presentation Structure:

Organize your seminar presentation into clear sections, including an introduction, main content, and conclusion. Use headings, sub-headings, and bullet points to help the audience follow your presentation easily.

4. Audience Engagement:

Incorporate interactive elements into your presentation to keep the audience engaged. This may include questions, quizzes, demonstrations, or multimedia components such as videos, images, or animations related to your topic.

5. Visual Support:

Create visually appealing slides to support your presentation. Use a clear and readable font, include relevant visuals, and avoid overcrowding slides with excessive texts. Visuals should be used to enhance understanding and highlight key points.

6. Explanation of Technical Concepts:

If your topic involves technical concepts or terminology, explain them in simple and concise terms. Use analogies or real-life examples to help the audience grasp complex ideas.

7. Use of Examples and Case Studies:

Include real-world examples or case studies to illustrate the application of concepts or technologies in the relevant. This will help the audience connect theory to practice and understand the practical implications of your topic.

8. Delivery and Rehearsal:

Practice your presentation multiple times to ensure a smooth and confident delivery. Time yourself to ensure that your presentation fits within the allotted time. Rehearsing will help you become familiar with the content and enhance your overall presentation skills.

9. Q & A and Discussion:

Reserve time at the end of your presentation for questions and discussion. Encourage the audience to ask questions or share their thoughts. Be prepared to answer questions and engage in meaningful dialogue with audience related to the selected topic.

10. Professionalism and Enthusiasm:

Dress appropriately for the occasion and maintain a confident and professional demeanor throughout your presentation. Maintain eye contact with the audience, speak clearly and audibly, and exhibit enthusiasm for your topic.

Evaluation Strategy: The performance of Seminar should be evaluated on the basis of following criteria:

S.N.	Evaluation Parameter	Weightage (%)
1.	Relevance of Topic	10
2.	Content Selection	20
3.	Presentation & Communication Skills	15
4.	Audience Engagement	10
5.	Explanation of Technical Concepts	20
6.	Use of Examples and Case Studies	10
7.	Q&A and Discussion	15
	Total	**100**

Remember, seminars are not just about sharing information but also about connecting with the audience and creating a memorable experience. Tailor your seminar presentation to cater to the interests and knowledge level of the audience, and aim to inspire and educate them about the concerned technology or topic.

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