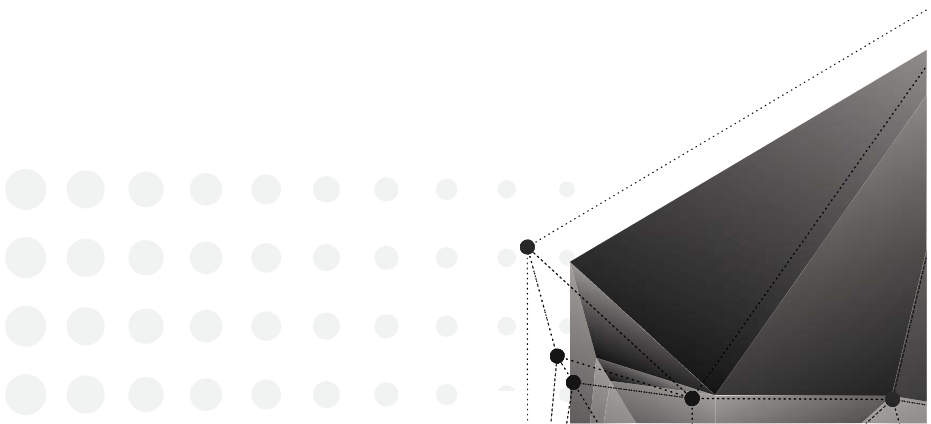


**SIXTH SEMESTER**

**'CYBER FORENSICS  
&  
INFORMATION SECURITY'**





## ETHICAL HACKING

<b>Course Code:</b>	496001
<b>Course Title</b>	Ethical Hacking
<b>No. of Credits</b>	10 (TH:8,T:0,P:4)

**COURSE OUTCOMES:** After learning the course, the students should be able to-

1. Describe and understand the basics of the ethical hacking
2. Perform the foot printing and scanning
3. Demonstrate the techniques for system hacking
4. Determine the signature of different attacks and prevent them
5. Detect and prevent the security attacks in different environments

## **COURSE CONTENTS**

### **1. Fundamentals**

- 1.1 Introduction to Ethical Hacking
- 1.2 Hacking Terminology, Hacker Classifications, Attack Types
- 1.3 Hacking Phases

### **2. Footprinting and Reconnaissance**

- 2.1 Footprinting: Passive, Active
- 2.2 Footprinting Methods and Tools: Search Engines, Website and E-mail Footprinting

### **3. Scanning and Enumeration (Overview Only)**

- 3.1 Scanning Methodology: Identifying Targets, Port Scanning, Evasion, Vulnerability Scanning
- 3.2 Enumeration Techniques: Banner Grabbing, SNMP Enumeration

### **4. Sniffing and Evasion**

- 4.1 Active and Passive Sniffing
- 4.2 Sniffing Tools and Techniques: MAC Flooding, ARP Poisoning, DHCP Starvation, Spoofing
- 4.3 Evasion & It's Techniques: Firewall, Honeypots

### **5. Attacking a System**

- 5.1 Methodology
- 5.2 Hacking Steps: Authentication and Passwords, Password Attacks.

**PRACTICAL OUTCOMES:** After completion of , students would be able to:

1. Understand the core concepts related to different types of Footprinting Methods and Tools.
2. Understand the core concepts related to E-mail tracking.
3. Understand Sniffing and Evasion
4. Exploit the vulnerabilities related to computer system & networks using state of the art tools and technologies.

**List of Practicals :**

1. **Footprinting Methods and Tools** -Google Search String Operators
2. **Website Footprinting** -. Use any of web mirroring tool for footprinting. Tools: HTTrack ([www.httrack.com](http://www.httrack.com)), Black Widow ([http:// softbytelabs.com](http://softbytelabs.com)), The Way Back Machine[www. archive.org](http://www.archive.org)
3. **E-mail tracking** - Use any of E mail tracking tool for footprinting. Tools: GetNotify, ContactMonkey, Yesware, Read Notify, WhoReadMe, MSGTAG, Trace Email, and Zendio
4. **DNS Footprinting** - Using Nslookup command
5. **Scanning** - Use CurrPorts, Zenmap tools and Hping, netstat commandsport scanning
6. **Enumeration Techniques** - Banner Grabbing with telnet command
7. Using Nbtstat and SuperScan ([www.mcafee.com](http://www.mcafee.com)) for NetBIOS enumeration
8. Using Engineer's Toolset ([solarwinds.com](http://solarwinds.com)), SNMP Scanner ([secure- bytes.com](http://secure-bytes.com)), OpUtils5 ([www.manageengine.com](http://www.manageengine.com)), and SN Scan ([mcafee.com](http://mcafee.com)) for SNMP Enumeration

9. **Sniffing and Evasion** - Using Wireshark software for sniffing
10. Installing, configuring and testing Snort IDS
11. Configuring Firewall in Windows and Linux systems.

**Reference Books/Resources:**

1. CEH Certified Ethical Hacker All in One Exam Guide by Matt Walker, 4TH EDITION, Mc Graw Hill.
2. CEH V10, Certified Ethical Hacker, Study Guide by Ric Messier, SYBEX, John Wiley & Sons
3. Ethical Hacking and Countermeasures v11, Professional series by EC-Council.

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**‘Open Elective 1-1’  
WEB DESIGNING**

<b>Course Code:</b>	496002
<b>Course Title</b>	Web Designing
<b>No. of Credits</b>	6 (TH:6,T:0,P:0)

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

1. Explain the basics of the Internet, its history, applications, and how to navigate the web using browsers, search engines, and online communication tools.
2. Develop web pages using HTML, including the implementation of lists, links, images, tables, and the utilization of the Document Object Model (DOM) and Cascading Style Sheets (CSS).
3. Gain a foundational understanding of XML, its structure, markup, and validation methods.
4. Apply basic features & functionalities of Dreamweaver software for web development.
5. Get acquainted with the basics of client-side and server-side scripting languages like JSP, ASP, and PHP.

## **COURSE CONTENTS**

### **Unit –1 Introduction to Internet:**

- What is the Internet, its history, and how it works.
- Difference between the Internet and Intranet.
- How the Internet has grown and its uses in science and technology.
- Different ways to connect to the Internet, types of modems, IP addresses, domain names, and Internet service providers.

### **Unit –2 Understanding the World Wide Web:**

- History and workings of the WWW.
- What are web browsers and search engines.
- Basics of sending and receiving emails, FTP, Telnet, chatting (text, voice, video), video conferencing, and e-commerce.

### **Unit –3 HTML Basics:**

- Introduction to HTML and creating HTML documents using a text editor.
- Basic concepts of tags and attributes, structural tags (HTML, HEAD, TITLE, BODY), and formatting tags (SMALL, BIG, B, I, U, EM, BLOCKQUOTE, etc.).
- Creating lists, links, inserting images and music, creating tables, frames, and forms.

### **Unit –4 Advanced HTML:**

- Document Object Model (DOM) and its importance.



- Introduction to Cascading Style Sheets (CSS) and creating styles using STYLE, DIV, SPAN, and LINK tags.
- Introduction to XML, its features, advantages, structure, markup, and Document Type Declaration (DTD) and validation.

**Unit –5 Using Dreamweaver:**

- Basic features and functions of Dreamweaver.
- Introduction to client-side and server-side scripting, JSP, ASP, PHP.

### **RECOMMENDED BOOKS:**

1. Internet and multimedia, E-commerce, and web designing by R. Goel and Ramesh Chandra
2. Internet 6-in-1 by Kraynak and Habraken, Prentice Hall of India Pvt. Ltd; New Delhi
3. Using the Internet IV edition by Kasson, Prentice Hall of India Pvt. Ltd; New Delhi
4. Using the World Wide Web, (II edition) by Wall, Prentice Hall of India Pvt. Ltd; New Delhi
5. HTML-4 for World Wide Web by Castro Addison Wesley (Singapore) Pvt. Ltd; New Delhi
6. Teach yourself HTML 4.0 with XML, DHTML, and JavaScript by Stephanic, Cottrell, Bryant; IDG books India Pvt. Ltd; New Delhi
7. Internet for Everyone - Alexis Leon and Mathews Leon, Vikas Publishing House Pvt. Ltd., New Delhi

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**‘Open Elective 1-2’  
MOBILE APPLICATION SECURITY**

<b>Course Code:</b>	496003
<b>Course Title</b>	Mobile Application Security
<b>No. of Credits</b>	6 (TH:6,T:0,P:0)

**COURSE OUTCOMES:** After successful completion of this course, student will be able to-

1. Understand and analyze the different types of attacks
2. Analyze the Android OS Security.
3. Understand the fundamentals of Web & Mobile Applications Security.
4. Explain the Mobile application security controls.

## **COURSE CONTENTS**

### **1. Mobile Issues and Development Strategies**

1.1 Top Issues Facing Mobile Devices

1.2 Tips for Secure Mobile Application Development

### **2. Android Security**

2.1 Development and Debugging on Android

2.2 Android's Security Model

2.3 Android Permissions Review

2.4 Creating New Manifest Permissions

2.5 Android Security Tools

### **3. WAP and Mobile HTML Security**

3.1 Basics

3.2 Authentication on WAP/Mobile HTML Sites

3.3 Encryption

3.4 Application Attacks on Mobile HTML Sites

3.5 WAP and Mobile Browser Weaknesses

### **4. Bluetooth Security**

4.1 Overview of the Technology

4.2 Bluetooth Security Features

4.3 Threats to Bluetooth Devices and Networks

### **5. SMS Security**

5.1 Overview of SMS and MMS

5.2 Protocol Attacks

5.3 Application Attacks

## **6. Enterprise Security on The Mobile OS**

6.1 Device Security Options

6.2 Secure Local Storage

6.3 Security Policy Enforcement

6.4 Encryption

6.5 Application Sandboxing, Signing and Permissions

6.6 Buffer Overflow Protection

### **Reference Books:**

1. Mobile Application Security by Himanshu Dwivedi, Chris Clark & David Thiel, Mc Graw Hill Publication
2. Android Security: Attacks and Defenses by Abhishek Dubey and Anmol Mishra, CRC Press, Taylor & Francis Group

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**‘Open Elective 2-1’  
PROJECT MANAGEMENT**

<b>Course Code:</b>	456005
<b>Course Title</b>	Project Management
<b>No. of Credits</b>	6 (TH:6,T:0,P:0)

**COURSE OUTCOME :-** At the end of the course, the student will be able to:

1. Understand the importance of projects and its phases.
2. Analyze projects from marketing, operational and financial perspectives.
3. Evaluate projects based on discount and non-discount methods.
4. Develop network diagrams for planning and execution of a given project.
5. Apply crashing procedures for time and cost optimization.

## **COURSE CONTENTS**

### **Unit - I : Concept of a project:**

Classification of projects, importance of project management, The project life cycle.

### **Unit - II : Capital budgeting process:**

Planning, Analysis, Selection, Financing, Implementation, Review; Generation and screening of project ideas; market and demand analysis.

### **Unit - III : Financial Estimates and Projections:**

Cost of projects, means of financing, estimates of sales and production cost, working capital requirement, balance sheet.

### **Unit - IV : Project administration:**

Progress payments, expenditure planning, project scheduling and network planning, use of Critical Path Method (CPM), schedule of payments and physical progress, time-cost trade off. Concepts and uses of PERT cost as a function of time, Project Evaluation and Review Techniques/cost mechanisms. Determination of least cost duration. Post project evaluation. Introduction to various Project management software.

**Text & Reference Books :**

1. Project planning, analysis, selection, implementation and review – Prasannachandra – Tata McGraw Hill
2. Project Management – the Managerial Process – Clifford F. Gray & Erik W. Larson – McGraw Hill
3. Project management - David I Cleland - McGraw Hill International Edition, 1999
4. Project Management – Gopala krishnan – Mcmillan India Ltd.
5. Project Management-Harry-Maylor-Pearson Publication

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**‘Open Elective 2-2’  
INDUSTRIAL ENGINEERING & MANAGEMENT**

<b>Course Code:</b>	456006
<b>Course Title</b>	Industrial Engineering & Management
<b>No. of Credits</b>	6 (TH:6,T:0,P:0)

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

1. Explain the different types of layouts and plant maintenance with safety
2. List and explain the need of method study and work measurements
3. Explain the production planning and quality control, and its functions
4. Understand the basic principles, approaches and functions of management and identify concepts to specific situations
5. List and explain the different financial sources and methods of inventory management

## **COURSE CONTENTS**

### **Unit - 1 : Plant Engineering**

- Selection of site of industry;
- Plant layout, Principles of a good layout, Types of layout, Techniques to improve Layout;
- Process; Product;

### **Unit 2 - Work Study**

- Productivity;
- Standard of living;
- Method of improving Productivity;
- Importance of good working conditions;
- Method Study: Definition, Objectives, Basic procedure;
- Work Measurement: Definition, Basic procedure;
- Numerical Problems;
- Basic concept of production study;

### **Unit - 3 : Production Planning and Control**

- Introduction, Major functions;
- Pre planning;
- Methods of forecasting;
- Routing and Scheduling;
- Dispatching and Controlling;
- Concept of Critical Path Method (CPM);
- Types of Production;
- Economic Batch Quantity (EBQ);
- Principles of Product and Process Planning;
- Make or Buy decision;
- Numerical problems;
- Quality Control: Types of inspection;
- Basic Concept of ISO standards

#### **Unit - 4 : Principles of Management**

- Definition of Management;
- Administration; Organization;
- Taylor's and Fayol's Principles of Management;
- Functions of Manager;
- Types of Organization
- Leadership: Styles of Leadership, Qualities of a good leader;
- Motivation
- Management Information Systems;
- Personnel Management
- Responsibility of Human Resource Management;
- Selection Procedure;
- Training of Workers;
- Apprentice Training;
- On the Job training (OJT);

**Text & Reference Books:**

1. Industrial Engineering & Management, S.C. Sharma, Khanna Book Publishing Co. (P) Ltd., Delhi.
2. Industrial Engineering and Management, O.P. Khanna, Revised Edition, Dhanpat Rai Publications (P) Ltd., New Delhi – 110002.
3. Management, A global perspective, Heinz Wehrich, Harold Koontz, 10th Edition, McGraw Hill International Edition 1994.
4. Essentials of Management, 4th Edition, Joseph L.Massie, Prentice-Hall of India, New Delhi 2004.
5. Principles and Practices of Management, Premvir Kapoor, Khanna Publishing House, N. Delhi

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**‘Program Elective 1-1’  
NETWORK FORENSICS**

<b>Course Code:</b>	496004
<b>Course Title</b>	Network Forensics
<b>No. of Credits</b>	6 (TH:6,T:0,P:0)

**COURSE OUTCOMES:** Upon completion of the course students will be able to:

1. Understand the fundamentals of network forensics and its role in investigating cyber incidents.
2. Familiarize with various network forensic tools and techniques for capturing and analyzing network traffic.
3. Gain proficiency in using tools like Wireshark, TCP Dump, Syslog, NMS, etc., for network data examination.
4. Learn to interpret and analyze data link and network layer logs to identify suspicious activities.
5. Develop skills in auditing server logs, user activities, and application logs for forensic analysis.
6. Identify the limitations and challenges of network forensics, including encryption, spoofing, and privacy laws.
7. Apply knowledge gained in real-world scenarios to investigate and solve network security incidents.
8. Improve critical thinking and problem-solving abilities related to network forensics investigations.

## **COURSE CONTENTS**

### **Unit - 1 : Introduction to Network Forensics**

- 1.1 Review of Networking Concepts and Protocols
- 1.2 Introduction to Network Forensics
- 1.3 Various Aspects of Network Forensics

### **Unit - 2 : Network Forensic Tools and Techniques**

- 2.1 Introduction to Network Forensic Tools and Techniques
- 2.2 Wireshark
- 2.3 TCP Dump
- 2.4 Syslog
- 2.5 NMS (Network Management System)
- 2.6 Promiscuous Mode
- 2.7 Network Port Mirroring
- 2.8 Snooping
- 2.9 Scanning Tools

### **Unit - 3 : Data Link Layer Examination**

- 3.1 Understanding and Examining Data Link Layer
  - 3.1.1 Physical Layer
  - 3.1.2 Ethernet Switch Logs
  - 3.1.3 MAC Table
  - 3.1.4 ARP Table, etc.

### **Unit - 4 : Network Layer Examination**

- 4.1 Understanding and Examining Network Layer
- 4.2 Router Logs
- 4.3 WiFi Device Logs
- 4.4 Firewall Logs

## **Unit - 5 : OS and Application Audit**

5.1 Understanding Audit Features of OS and Applications 5.2

Enabling and Examining Server Logs

5.3 User Activity Logs

5.4 Browser History Analysis

5.5 Proxy Server Logs

5.6 Antivirus Logs

5.7 Email Logs

## **Unit-6: Limitations and Challenges in Network Forensics**

6.1 Encryption and its Impact on Network Forensics

6.2 Spoofing and its Implications for Network Forensics

6.3 Mobility Challenges in Network Forensics

6.4 Storage Limitations in Network Forensics

6.5 Privacy Laws and Their Impact on Network Forensics

### **Reference Books :**

1. Manuals of OS, application software, network devices
2. RFCs of various networking protocols (<https://www.ietf.org/>)
3. <https://www.sans.org/>
4. <https://www.cert-in.org.in/>
5. Handbook of Digital Forensics and Investigation, Eoghan Casey, Elsevier Academic Press
6. Cyber Forensics, Albert Marcella and Doug Menendez, CRC Press
7. Computer Forensics (5 volume Set) mapping to CHFI (Certified Hacking Forensics Investigator), by EC-Council

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**‘Program Elective 1-2’  
DATABASE SECURITY**

<b>Course Code:</b>	496005
<b>Course Title</b>	Database Security
<b>No. of Credits</b>	6 (TH:6,T:0,P:0)

**COURSE OUTCOMES:** After completion of this course, the students will be able to-

1. Understand and characterize modern techniques of database information security threats and techniques for database security assessment.
2. Analyze information in a database to identify information security incidents
3. Understand and use the main tools for database management systems monitoring.
4. Apply new methods of a database protection and use tools for database security assessment

## **COURSE CONTENTS**

### **1. Introduction**

- 1.1 Introduction to Access Control
- 1.2 Purpose and fundamentals of access control

### **2. Access Control: Properties & Policies**

- 2.1 Policies of Access Control, Models of Access Control, and Mechanisms
- 2.2 Types of Access Control
- 2.3 Mandatory Access Control (MAC)
- 2.4 Capabilities and Limitations of Access Control Mechanisms

### **3. Core RBAC Features**

- 3.1 Role-Based Access Control (RBAC) and Limitations
- 3.2 Types of RBAC, Limitations of RBAC
- 3.3 Comparing RBAC to DAC and MAC Access Control policy

### **4. Security in Cloud**

- 4.1 Cloud Data Security: Recent trends in Database security and access control mechanisms
- 4.2 Cloud Data Audit: Introduction, Audit, Best Practices, Key management

**Reference Books:**

1. Role Based Access Control: David F. Ferraiolo, D. Richard Kuhn, Ramaswamy Chandramouli.
2. Advanced System Security Topics, <https://www.coursera.org/lecture/advanced-system-security-topics/role-based-access-control-rbac-bYvzS>.

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**‘AUDIT COURSE’  
INDIAN CONSTITUTION**

<b>Course Code:</b>	AS601
<b>Course Title</b>	Indian Constitution (Audit Course)
<b>No. of Credits</b>	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)**

<b>Course Code:</b>	AS602
<b>Course Title</b>	Entrepreneurship and Start-ups
<b>No. of Credits</b>	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**

<b>Course Code:</b>	AS603
<b>Course Title</b>	Major Project - II
<b>No. of Credits</b>	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

<b>Course Code:</b>	AS604
<b>Course Title</b>	Seminar
<b>No. of Credits</b>	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:

<b>S.N.</b>	<b>Evaluation Parameter</b>	<b>Weightage (%)</b>
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
	<b>Total</b>	<b>100</b>

**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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