SEMESTER : I PART :	22PMCAO17-1: MULTIMEDIA AND ANIMATION	CREDIT : 3 HOURS : 3

Learning Objectives

1. To introduce the fundamental elements of multimedia.
2. Provide an understanding of the fundamental elements in multimedia.
3. The emphasis will be on learning the representations, perceptions and applications of multimedia.
4. To familiarize the students with various approaches, methods and techniques of Animation Technology
5. Exploring different approaches in computer animation.

UNIT-I : Introduction **Hours : 9**

Definition-Taxonomy-Multimedia Information Representation-Text-Images-Audio-Video- Multimedia Architecture-Multimedia Applications-Challenges of Multimedia Systems.

UNIT-II : Video Compression **Hours : 9**

Compression Principles-Need for Compression-Redundancy and Visibility-Text Compression- Binary Image Compression-Color, Gray Scale and Still-Video Image Compression-Audio Compression-Video Compression.

UNIT-III : Data and File Formats **Hours : 9**

Data and File Formats-RTF,TIFF,RIFF,MIDI,JPEG,AVI Video File Formats-MPEG standards- TWAIN Architecture-Digital Audio and Video as Multimedia I/O Technology-Animation.

UNIT-IV : Multimedia Application Design **Hours : 9**

Multimedia Application Design-Virtual Reality-Organizing Multimedia Databases-ApplicationWorkflow Design Issues-Distributed Application Design Issues.

UNIT-V : Multimedia Presentation **Hours : 9**

Multimedia Presentation and Authoring-Hypermedia Messaging-Multimedia in Future : High Definition Television and Desktop Computing-Knowledge Based Multimedia Systems.

Course Outcomes

1. Software skills and hands on work on digital media will also be emphasized.
2. Understand the technologies behind multimedia applications and master the skills for developing multimedia projects.
3. Create quality multimedia software titles.
4. To develop competencies and skills needed for becoming an effective Animator.
5. Mastering traditional & digital tools to produce stills and moving images.

Text Books

1. Prabhat K. Andleigh and Kiran Thakrar, Multimedia System Design, Pearson Education.
2. Ralf Steinmetz and Klara Nahrstedt, Multimedia Computing, Communications and Applications, Pearson Education.
3. Fred Halsall, Multimedia Communications : Applications, Networks, Protocols and Standards, Pearson Education.

Supplementary Readings

1. John F Koegel Buford, Multimedia Systems, Pearson Education.
2. Judith Jeffcoate, Multimedia in Practice – Technology and Applications, Prentice Hall ofIndia, 2001.

OUTCOME MAPPING

	PO1	PO2	PO3	PO4	PO5
CO1	3	3		3	
CO2			3		3
CO3				3	
CO4	3	2			3
CO5		3	2		

SEMESTER : I	22PMCAO17-2: DATA SCIENCE FOR BUSINESS	CREDIT : 3
PART :		HOURS : 3

LEARNING OBJECTIVES

1. Demonstrate knowledge of statistical data analysis techniques utilized in business decision making.
2. Apply principles of Data Science to the analysis of business problems.
3. Use data mining software to solve real-world problems.
4. Apply algorithms to build machine intelligence.
5. Demonstrate use of team work, leadership skills, decision making and organization theory.

Unit – I : Introduction **Hours : 9**

Data-Analytic Thinking - The Ubiquity of Data Opportunities -Data Science, Engineering, and Data-Driven Decision Making - Data Processing and "Big Data" - Data and Data Science Capability as a Strategic Asset. Business Problems and Data Science Solutions - From Business Problems to Data Mining Tasks - Supervised Versus Unsupervised Methods - Data Mining and Its Results - The Data Mining Process - Other Analytics Techniques and Technologies.

Unit – II : Introduction to Predictive Modeling **Hours : 9**

From Correlation to Supervised Segmentation - Models, Induction, and Prediction - Supervised Segmentation -Visualizing Segmentations - Trees as Sets of Rules - Probability Estimation.

Unit – III : Validation **Hours : 9**

Overfitting and Its Avoidance - Generalization - Overfitting - Overfitting Examined - From Holdout Evaluation to Cross-Validation - Learning Curves - Overfitting Avoidance and Complexity Control.

Unit – IV : Business Problem versus Data Exploration **Hours : 9**

Similarity, Neighbors, and Clusters - Similarity and Distance - Nearest-Neighbor Reasoning - Some Important Technical Details Relating to Similarities and Neighbors - Clustering – Stepping Back: Solving a Business Problem versus Data Exploration.

Unit – V : Decision Analytic Thinking **Hours:9**

Characteristics of a Good Model - Visualizing Model Performance - Representing and Mining Text

Course Outcomes

1. Recall data science techniques and methodologies to business environment
2. Demonstrate analytic thinking capacity to address business problems
3. Interpret the findings using visualization techniques
4. Make use of fundamental algorithmic ideas to process data
5. Apply modeling and predictive strategies and make estimation and build models with efficient decision making abilities

Text book

1. Provost, Foster, and Tom Fawcett, "Data Science for Business: What you need to know about data mining and data-analytic thinking", O"Reilly Media, Inc., 2013.

Supplementary Readings

1. Foster Provost and Tom Fawcett, "Data Science for Business", Published by O"Reilly Media, Inc., 1005 Gravenstein Highway North, Sebastopol, CA 95472, 2013, ISBN: 978-1-449-36132- 7.
2. Asllani, Arben, "Business Analytics with Management Science Models and Methods", FT Press, 2014.
2. Igual, Laura, and SantiSeguí, "Introduction to Data Science", In Introduction to Data Science, pp. 1-4. Springer, Cham, 2017.

OUTCOME MAPPING

	PO1	**PO2**	**PO3**	**PO4**	**PO5**
CO1	3	3		3	
CO2			3		3
CO3				3	
CO4	3	2			3
CO5		3	2		

SEMESTER : I	22PMCAO17-3: DIGITAL MARKETING	CREDIT : 3
PART :		HOURS : 3

Learning Objectives

1. provide students with the essential philosophies and practices of marketing and digital marketing technologies.
2. equip students with specific knowledge in the areas of digital marketing communications
3. familiarise students to methodologies, tools and technologies involved in digital marketing.
4. provide students with sufficient background that will allow them to pursue their careers in the Digital Marketing area.
5. outline an approach to developing a digital marketing plan

UNIT- I : Introduction to Digital Marketing **Hours : 9**

Evolution of Digital Marketing - From Traditional to Modern Marketing – Growth of 'E' Concepts: from E-Business to Advanced E-Commerce – Digital, The next wave of marketing – Digital Marketing: Emergence of Digital Marketing as a Tool – Digital Marketing Channels – Types and Business Models – Digital Marketing Applications and Benefits. Internet Marketing: Underlying Technology and Frameworks – Digital Marketing Framework.

UNIT –II : Digital Marketing Models Creation **Hours : 9**

Factors Impacting Digital Marketplace – Value Chain Digitization- Digital Marketing Business Models, Understanding Digital Value Elements – Digital Value – Led Marketing Approach – Digital Marketing Models Creation – Application of Digital Marketing Models. Consumer for Digital Marketing: Consumer Behaviour on the Internet – Evolution of Consumer Behaviour Models – Brand Building on the Web – Web Tracking Audits and Forecasting – Integrated Marketing Communications – Basics of Integrated Marketing Communications – Four Pillers of IMC Construct – Impact of Digital Channels on IMC.

UNIT- III : Digital Marketing Assessment Phase **Hours : 9**

Elements of the Assessment Phase – Marketing Strategy and its Digital Shifts – The assessment Phase Elements – Macro-Micro Environment Analysis – Marketing Situation Analysis – Digital Marketing Internal Assessment – Analyzing Present Offerings Mix – Marketing Mix Analysis – Internal Resource Mapping – Core Competencies Analysis – Digital Marketing Objectives Planning – Digital Presence Analysis – Digital Presence Analysis Matrix – Digital Marketing Objectives Development – Digital Marketing Objectives Review.

UNIT- IV : Digital Marketing Strategy **Hours : 9**

Groundwork – Understanding Digital Business Strategy – Emerging Digital Business Structures – Digital Core Competency Alignment – Customer Development Strategy – Defining the Digital Marketing Mix – Offering Mix for Digital – Digital Pricing Models – Channels of purchasing, Reaching the E-consumer – Managing Promotional Channels – Digital Marketing Strategy Roadmap – The 6S Digital Marketing Implementation Strategy – PLC Concept.

UNIT- V : Digital Marketing Operations Set-up **Hours : 9**

Understanding Digital Marketing Conversion – Basics of Lead Generation and Conversion Marketing – Setting up for conversion – Lead Management across Channels – Basics of Web Development and Management – Pre Planning for Web Development – Website Development Stages – Developing Site Diagrams and Wireframes – Website Content Development and Management – User Experience, Usability and Service Quality Elements – Understanding Elements of User Experience – Implementation of Interaction Design – Understanding Web Usability and Evaluation – Measuring Service Quality Elements- Introductionto Search Engine Optimization.

Cours Outcomes

1. Recall the basic elements and factors of digital marketing
2. Classify the technology and frameworks in which digital marketing operates
3. Choose the key internal analysis elements for the relevant applications of underlying frameworks of digital marketing
4. Analyze different digital marketing strategies for the real time business applications
5. Determine technical specifications and to develop site/portal to promote digital marketing

Text Book

1. Puneet Bhatia, “Fundamentals of Digital Marketing, 2/e”, Pearson India Publications,New York, 2019.

Supplementary Readings

1. Vandana Ahuja “Digital Marketing”, Oxford University Press, 2015.
2. Marjolein Visser, Berend Sikkenga, Mike Berry, “Digital Marketing Fundamentals: From Strategy to ROI”, Noordhoff Groningen / Utrecht, Netherlands, 2018.
3. Jeremy Kagan, Siddharth Shekhar Singh, “Digital Marketing: Strategy & Tactics”, Wiley Publications, 2020.

OUTCOME MAPPING

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CO5		3	2		