

Stream/ Specialization: **Business Analytics**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	BA4027	Data Mining for Business Intelligence	PEC	3	0	0	3	3
2.	BA4028	Deep Learning and Artificial Intelligence	PEC	3	0	0	3	3
3.	BA4029	Social media web Analytics	PEC	3	0	0	3	3
4.	BA4030	E-Business Management	PEC	3	0	0	3	3
5.	BA4031	Enterprise Resource Planning	PEC	3	0	0	3	3

COURSE OBJECTIVES:

- To know how to derive meaning from huge volume of data and information
- To understand how knowledge discovering process is used in business decision making.

UNIT I INTRODUCTION **9**
Data mining, Text mining, Web mining, Spatial mining, Process mining, Data ware house and datamarts.

UNIT II DATA MINING PROCESS **9**
Datamining process – KDD, CRISP-DM, SEMMA and Domain-Specific, Classification and Prediction performance measures -RSME, MAD, MAP, MAPE, Confusion matrix, Receiver Operating Characteristic curve & AUC; Validation Techniques - hold-out, k-fold cross-validation, LOOCV, random subsampling, and bootstrapping.

UNIT III PREDICTION TECHNIQUES **9**
Data visualization, Time series – ARIMA, Winter Holts, Vector Autoregressive analysis, Multivariate regression analysis.

UNIT IV CLASSIFICATION AND CLUSTERING TECHNIQUES **9**
Classification- Decision trees, k nearest neighbour, Logistic regression, Discriminant analysis; Clustering; Market basket analysis;

UNIT V MACHINE LEARNING AND AI **9**
Genetic algorithms, Neural network, Fuzzy logic, Support Vector Machine, Optimization techniques – Ant Colony, Particle Swarm, DEA

TOTAL: 45 PERIODS

COURSE OUTCOMES:

1. Learn to apply various data mining techniques into various areas of different domains.
2. Be able to interact competently on the topic of data mining for business intelligence.
Know the basics of data mining processes, algorithms, & systems well enough to interact with CTOs, expert data miners, consultants, etc.
3. Apply various prediction techniques.
4. Learn about supervised and unsupervised learning technique.
5. Develop and implement a basic trainable neural network (or) a fuzzy logic system to design and manufacturing

REFERENCES:

1. Jaiwei Ham and Micheline Kamber, Data Mining concepts and techniques, Kauffmann Publishers 2006
2. Efraim Turban, Ramesh Sharda, Jay E. Aronson and David King, Business Intelligence, Prentice Hall, 2008.
3. W.H.Inmon, Building the Data Warehouse, fourth edition Wiley India pvt. Ltd. 2005.
4. Ralph Kimball and Richard Merz, The data warehouse toolkit, John Wiley, 3rd edition, 2013.
5. Michel Berry and Gordon Linoff, Mastering Data mining, John Wiley and Sons Inc, 2nd Edition, 2011
6. Michel Berry and Gordon Linoff, Data mining techniques for Marketing, Sales and Customer support, John Wiley, 2011
7. G. K. Gupta, Introduction to Data mining with Case Studies, Prentice hall of India, 2011
8. Giudici, Applied Data mining – Statistical Methods for Business and Industry, John Wiley. 2009
9. Elizabeth Vitt, Michael Luckevich Stacia Misner, Business Intelligence, Microsoft, 2011
10. Michalewicz Z., Schmidt M. Michalewicz M and Chiriack C, Adaptive Business Intelligence, Springer – Verlag, 2007
11. Galit Shmueli, Nitin R. Patel and Peter C. Bruce, Data Mining for Business Intelligence – Concepts, Techniques and Applications Wiley, India, 2010.

COURSE OBJECTIVES:

- To expose various algorithms related to Deep Learning and Artificial Intelligence.
- To prepare students to apply suitable algorithm for the specified applications.

UNIT I DEEP NETWORKS**9**

Deep Networks: Modern Practices: Deep Forward Networks: Example: Learning XOR - Gradient-Based Learning - Hidden Units - Architecture Design - Regularization for Deep Learning.

UNIT II MODELS**9**

Optimization for Training Deep Models: How Learning Differs from Pure Optimization - Challenges in Neural Network Optimization - Basic Algorithms - Parameter Initialization Strategies - Algorithms with Adaptive Learning Rates - Approximate Second-Order Methods - Optimization Strategies and Meta-Algorithms.

UNIT III INTELLIGENT SYSTEMS**9**

Introduction to Artificial Intelligence: Intelligent Systems - Foundations of AI - Applications - Tic-Tac-Toe Game Playing - Problem Solving: State-Space Search and Control Strategies: Introduction - General Problem Solving - Exhaustive Searches - Heuristic Search Techniques.

UNIT IV KNOWLEDGE REPRESENTATION**9**

Advanced Problem-Solving Paradigm: Planning: Introduction - Types of Planning Systems - Knowledge Representation: Introduction - Approaches to Knowledge Representation - Knowledge Representation using Semantic Network - Knowledge Representation using Frames.

UNIT V APPLICATIONS**9**

Expert Systems and Applications: Blackboard Systems - Truth Maintenance Systems - Applications of Expert Systems - Machine-Learning Paradigms: Machine-Learning Systems - Supervised and Unsupervised Learnings.

TOTAL : 45 PERIODS**COURSE OUTCOMES:**

1. Knowledge of Algorithms of Deep Learning & Artificial Intelligence.
2. Knowledge of applying Algorithm to specified applications.
3. Ability to understand intelligent systems and Heuristic Search Techniques
4. Understanding of Knowledge Representation, Semantic Networks and Frames
5. Knowledge Of Expert systems, applications and Machine learning

REFERENCES:

1. Ian Goodfellow, YoshuaBengio, Aaron Courville, "Deep Learning", MIT Press, 2016.
2. Li Deng and Dong Yu, "Deep Learning Methods and Applications", Foundations and Trends in Signal Processing.
3. YoshuaBengio, "Learning Deep Architectures for AI", Foundations and Trends in Machine Learning.
4. SarojKaushik, "Artificial Intelligence", Cengage Learning India Pvt. Ltd.
5. Deepak Khemani, "A First Course in Artificial Intelligence", McGraw Hill Education(India) Private Limited, NewDelhi.
6. Elaine Rich, Kevin Night, Shivashankar B Nair, "Artificial Intelligence" Third Edition, McGraw Hill, 2008.

COURSE OBJECTIVE:

- To showcase the opportunities that exist today to leverage the power of the web and social media

UNIT I INTRODUCTION**9**

Evolution of online communities - History and Evolution of Social Media- Social Media vs. traditional media - Social Media Audience and Goals for using Social Media - Understanding Social Media: Strong and weak ties – Influencers - How ideas travel – Viralness - Social theory and social media - technological determinism in popular discourse on social media technologies.

UNIT II COMMUNITY BUILDING AND MANAGEMENT**9**

Science of Social Media - Keys to Community Building - Promoting Social Media Pages- Linking Social Media Accounts-The Viral Impact of Social Media-Digital PR-Encourage Positive Chatter in Social Media - Identity in social media: formation of identities, communities, activist movements, and consumer markets - Social Media as business.

UNIT III SOCIAL MEDIA POLICIES AND MEASUREMENTS**9**

Social Media Policies-Etiquette, Privacy- ethical problems posed by emerging social media technologies - The road ahead in social media- The Basics of Tracking Social Media - social media analytics- Insights Gained From Social Media- Customized Campaign Performance Reports - Observations of social media use.

UNIT IV WEB ANALYTICS**9**

Web Analytics - Present and Future, Data Collection - Importance and Options, Overview of Qualitative Analysis, Business Analysis, KPI and Planning, Critical Components of a Successful Web Analytics Strategy, Web Analytics Fundamentals, Concepts, Proposals & Reports, Web Data Analysis.

UNIT V SEARCH ANALYTICS**9**

Search engine optimization (SEO), non-linear media consumption, user engagement, user-generated content, web traffic analysis, navigation, usability, eye tracking, online security, online ethics, content management system, data visualization, RSS feeds, Mobile platforms, User centered design, Understanding search behaviors.

TOTAL: 45 PERIODS**COURSE OUTCOMES:**

1. The students will be able to enhance the social media skills.
2. The students will be able to develop a mass communication strategy and guide campaigns.
3. To get an idea of social media policies.
4. Understand the fundamentals and concepts of web analytics.
5. How to effectively use the resulting insights to support website design decisions, campaign optimisation, search analytics, etc.

REFERENCES:

1. K. M. Shrivastava, Social Media in Business and Governance, Sterling Publishers Private Limited, 2013
2. Christian Fuchs, Social Media a critical introduction, SAGE Publications Ltd, 2014
3. Bittu Kumar, Social Networking, V & S Publishers, 2013
4. Avinash Kaushik, Web Analytics - An Hour a Day, Wiley Publishing, 2007
5. ric T. Peterson, Web Analytics Demystified, Celilo Group Media and Café Press, 2004
6. TakeshiMoriguchi, Web Analytics Consultant Official Textbook, 7th Edition, 2016

COURSE OBJECTIVE:

- To understand the practices and technology to start an online business.

UNIT I	INTRODUCTION TO e-BUSINESS	8
e-business, e-business vs e-commerce, Economic forces – advantages – myths – e-business models, design, develop and manage e-business, Web 2.0 and Social Networking, Mobile Commerce, S-commerce		
UNIT II	TECHNOLOGY INFRASTRUCTURE	10
Internet and World Wide Web, internet protocols - FTP, intranet and extranet, information publishing technology- basics of web server hardware and software.		
UNIT III	BUSINESS APPLICATIONS	10
Consumer oriented e-business – e-tailing and models - Marketing on web – advertising, e-mail marketing, affiliated programs - e-CRM; online services, Business oriented e-business, e-governance, EDI on the internet, Delivery management system, Web Auctions, Virtual communities and Web portals – social media marketing		
UNIT IV	e-BUSINESS PAYMENTS AND SECURITY	9
E-payments - Characteristics of payment of systems, protocols, e-cash, e-cheque and Micro payment systems- internet security – cryptography – security protocols – network security.		
UNIT V	LEGAL AND PRIVACY ISSUES	8
Legal, Ethics and privacy issues – Protection needs and methodology – consumer protection, cyber laws, contracts and warranties, Taxation and encryption policies.		

TOTAL: 45 PERIODS**COURSE OUTCOMES:**

1. Ability to build and manage an e-business.
2. Knowledge about Technology Infrastructure
3. Understanding of customer oriented business applications
4. Knowledge of e business payment protocols and security
5. Understanding of ethical, legal, privacy issues and encryption policies

REFERENCES:

1. Harvey M. Deitel, Paul J. Deitel, Kate Steinbuhler, e-business and e-commerce for managers, Pearson, 2011.
2. Efraim Turban, Jae K. Lee, David King, Ting Peng Liang, Deborrah Turban, Electronic Commerce – A managerial perspective, Pearson Education Asia, 2010.
3. Parag Kulkarni, Sunita Jahirabadkao, Pradeep Chande, e business, Oxford University Press, 2012.
4. Henry Chan & el, E-Commerce – fundamentals and Applications, Wiley India Pvt Ltd, 2007.
5. Gary P. Schneider, Electronic commerce, Thomson course technology, Fourth annual edition, 2007
6. Bharat Bhasker, Electronic Commerce – Frame work technologies and Applications, 3rd Edition. Tata McGrawHill Publications, 2009
7. Kamlesh K. Bajaj and Debjani Nag, Ecommerce- the cutting edge of Business, Tata McGraw Hill Publications, 7th reprint, 2009.
8. Kalakota et al, Frontiers of Electronic Commerce, Addison Wesley, 2004
9. Micheal Papaloelon and Peter Robert, e-business, Wiley India, 2006.

COURSE OBJECTIVES:

- To exhibit the theoretical aspects of Enterprise Resource Planning.
- To provide practical implication on ERP Suite implementation.

UNIT I INTRODUCTION**8**

Overview of enterprise systems – Evolution - Risks and benefits - Fundamental technology - warehouse management.

UNIT II ERP SOLUTIONS AND FUNCTIONAL MODULES**10**

Overview of ERP software solutions, BPR, Project management, Functional modules - Organisational data, master data and document flow.

UNIT III ERP IMPLEMENTATION**10**

Planning Evaluation and selection of ERP systems - Implementation life cycle - ERP implementation, Methodology and Frame work- Training – Data Migration. People Organization in implementation- Consultants, Vendors and Employees.

UNIT IV POST IMPLEMENTATION**8**

Maintenance of ERP- Organizational and Industrial impact; Success and Failure factors of ERP Implementation.

UNIT V EMERGING TRENDS ON ERP**9**

Extended ERP systems and ERP add-ons -CRM, SCM, Business analytics - Future trends in ERP systems-web enabled, Wireless technologies, cloud computing and Augmented reality.

TOTAL: 45 PERIODS**COURSE OUTCOMES:**

1. Knowledge of risk and benefits associated with Enterprise Resource Planning.
2. Knowledge of ERP solutions and functional modules
3. Exposure to the implementation environment
4. Understanding of post implementational impact and maintenance of ERP
5. Knowledge of emerging trends on ERP

REFERENCES:

1. Alexis Leon, ERP demystified, second Edition Tata McGraw-Hill, 2008.
2. Simha R. Magal , Jeffrey Word, Integrated Business processes with ERP systems, John Wiley & Sons, 2012.
3. Jagan Nathan Vaman, ERP in Practice, Tata McGraw-Hill, 2008
4. Alexis Leon, Enterprise Resource Planning, second edition, Tata McGraw-Hill, 2008.
5. Mahadeo Jaiswal and Ganesh Vanapalli, ERP Macmillan India, 2009
6. Vinod Kumar Grag and N.K. Venkitakrishnan, ERP- Concepts and Practice, Prentice Hall of India, 2006.
7. Summer, ERP, Pearson Education, 2008.