2. BCA Semester - VI Syllabus

BCA Semester – VI (Third Year)

Subject Title : **Data Warehousing and Data Mining**
Subject Code : **CAM304-3C**
Subject Type : **Major**

Rationale:
The proposed syllabus for Data Warehousing and Data Mining provides a comprehensive and well-structured curriculum that equips students with the essential knowledge and skills to excel in this field. The syllabus covers fundamental concepts, practical implementation, Data Mining techniques and Emerging trends, ensuring that students are well-prepared to contribute to the field of Data Analytics and make informed decisions based on data-driven insights.

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Learning Outcomes:
The Students will be able to:

- Design, implement and manage Data Warehouses effectively.
- Apply Data Mining techniques to extract valuable insights from large datasets.
- Understand the ethical implications of Data Warehousing and Data Mining.

Teaching and Evaluation Scheme:

Credits	Duration in Hours		Maximum Marks		Total
	Theory	Practical	CCE (Formative)	SEE (Summative)	
4	30	60	50	50	100

Course Content:

Unit I **[Weightage=25% approx., Lectures=7, Practicals=14]**

Data Warehousing: Introduction, Define Data Warehouse, differences between OLTP & Data Warehouse, comparative chart between OLTP and OLAP, construct separate Data Warehouse.

Data Warehousing - Architecture: Three Tier Data Warehouse Architecture, components of a Data Warehouse, Data Cube, OLAP operations for multidimensional data, OLAP servers (ROLAP, MOLAP, HOLAP), ETL process overview, data profiling, change data capture, data cleaning, data integration and transformation, Operational Data Store (ODS), metadata for Data Warehouse.

Unit II **[Weightage=25% approx., Lectures=8, Practicals=16]**

Data Warehousing : Design, Dimensional Modeling – introduction, benefits of Dimensional Modeling, fact tables and fact table keys, dimension tables and dimension tables keys, fact table granularity, four step dimensional design process, three fundamental grains, surrogate keys, date

dimension, multiple currencies and units of measures, factless fact tables, consolidated fact tables, slowly changing dimensions and technique for handling SCD, concept hierarchies, degenerate dimension, conformed dimension, Snowflake Schema.

Unit III **[Weightage=25% approx., Lectures=7, Practicals=16]**

Data Mining: Introduction to Data Mining, KDD and Data Mining, Knowledge Discovery Process, Mining frequent patterns and associations, introduction to Association Rules Mining, Market Basket Analysis – an example, Apriori Algorithm.

Unit IV **[Weightage=25% approx., Lectures=8, Practicals=14]**

Classification and Prediction: Introduction to Classification and Prediction, comparison of Classification and Prediction methods, Naïve Bayesian Classification, Linear Regression, Non-Linear Regression.

Cluster Analysis: Introduction to Cluster Analysis, types of data in Cluster Analysis, k-means – partitioning method.

Text Books:

- An Introduction to Building the Data Warehouse - Ghosh, 1st edition. Upper Saddle River, NJ: Prentice Hall, 2000.
- Data Mining Concepts and Techniques - Jiawei Han and Micheline Kamber.
- Building the Data Warehouse - Inmon, W. H. Wiley Computer Publishing.

Reference Books:

- The Data Warehouse Lifecycle Toolkit - Ralph Kimbal, Margy Ross.
- The Data Warehouse Toolkit - Ralph Kimbal, Margy Ross.
- Data Warehousing in the Real World - Sam Anahory, Dennis Murray.
- Data Warehouse Toolkit - ETL process Ralph Kimball.
- Introduction to Data Mining with Case Studies - G. K. Gupta.

Reference Links:

- https://www.geeksforgeeks.org/difference-between-data-warehousing-and-data-mining/
- https://dl.ebooksworld.ir/motoman/Cambridge.University.Press.Data.Mining.and.Data.Warehousing.www.EBooksWorld.ir.pdf
- https://www.cs.waikato.ac.nz/ml/weka
- https://weka.wikispaces.com

Practical List for Data Warehousing and Data Mining:

Explore WEKA

- Downloading and/or installation of WEKA Data Mining toolkit.
- Understand the features of WEKA toolkit such as Explorer, Knowledge Flow interface, Experimenter, command-line interface.
- Navigate the options available in the WEKA. (Example: Select attributes Panel, Preprocess Panel, Classify Panel, Cluster Panel, Associate Panel and Visualize Panel).
- Study the .arff file format.
- Explore the available data sets in WEKA.

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- Load a data set (Example: Weather dataset, Iris dataset, etc.)
- Load each dataset and observe the following:
    - List the attribute names and their types.
    - Number of records in each dataset.
    - Identify the Class Attribute (if any).
    - Plot Histogram.
    - Determine the number of records for each class.
    - Visualize the data in various dimensions.

Perform data preprocessing tasks and Demonstrate performing Association Rule Mining on data sets

- Explore various options available in WEKA for preprocessing data and apply unsupervised filters like Discretization, Resample filter, etc. on each dataset.
- Load Weather, Nominal, Iris, Glass datasets into WEKA and run Apriori algorithm with different support and confidence values. Study the rules generated.
- Apply different discretization filters on numerical attributes and run the Apriori Association Rule algorithm. Study the rules generated. Derive interesting insights and observe the effect of discretization in the rule generation process.

Demonstrate performing Classification on data sets

- Load each dataset into WEKA and run 1d3, J48 classification algorithm. Study the classifier output.
- Extract if-then rules from the decision tree generated by the Classifier.
- Load each dataset into WEKA and perform Naïve-bayes Classification.

Demonstrate performing clustering of datasets

- Load each dataset into WEKA and run simple k-means clustering algorithm with different values of k (number of desired clusters). Study the clusters formed. Observe the sum of squared errors and centroids and derive insights.
- Explore other Clustering techniques available in WEKA.
- Explore visualization features of WEKA to visualize the clusters.

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BCA SEMESTER : VI
SUBJECT CODE : CAM304-3C
SUBJECT NAME : DATA WAREHOUSING AND DATA MINING

Cos	Course Outcome	POs/PSOs	CL Cognitive level	KC Knowledge Category	Class Sessions	Lab Session
CO1	Understand what a data warehouse is and how it differs from OLTP systems.	PO1, PO3, PSO2	U	C	5	8
CO2	Learn to design data warehouse models using facts and dimensions.	PO2, PO3, PSO1	Ap	P	6	12
CO3	Understand how ETL works and how to clean and integrate data.	PO1, PO7, PSO1	U	C	5	10
CO4	Use OLAP tools to analyze data from different perspectives.	PO2, PO4, PSO2	Ap	P	4	8
CO5	Find patterns in data using data mining methods like Apriori.	PO3, PO9, PSO2	Ap	C	5	10
CO6	Classify and group data using techniques like Naïve Bayes and k-means.	PO2, PO10, PSO3	An	P	5	12

Mapping of COs with POs & PSOs

Course CAM304-3C	POs										PSOs		
	1	2	3	4	5	6	7	8	9	10	1	2	3
CO1	2	-	3	-	-	-	-	-	-	-	-	2	-
CO2	-	3	3	-	-	-	-	-	-	-	2	-	-
CO3	2	-	-	-	-	-	1	-	-	-	2	-	-
CO4	-	3	-	1	-	-	-	-	-	-	-	2	-
CO5	-	-	3	-	-	-	-	-	1	-	-	2	-
CO6	-	3	-	-	-	-	-	-	-	1	-	-	1

3: High, 2: Medium, 1: Low

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BCA Semester –VI (Third Year)

Subject Title : Mobile Application Development
Subject Code : CAM305-3C
Subject Type : Major

Rationale:
The subject aims to equip students with the essential skills to create, design and deploy Mobile Applications in today's rapidly evolving Tech landscape. Understanding system requirements is critical for developing optimized and user-friendly mobile solutions. Students learn to generate appropriate designs using Mobile Development Frameworks, ensuring they can create robust and scalable applications. By implementing these designs using industry-standard tools, students gain hands-on experience in app development. Finally, deploying these applications to market places helps students understand the full life cycle of app development, from conception to distribution.

Learning Outcomes:
The Students will be able to:

- Identify and describe the requirements for Mobile Applications.
- Understand and explain the challenges involved in Mobile Application design and development.
- Develop appropriate designs for Mobile Applications based on specific requirements.
- Implement these designs using the Android SDK.
- Deploy Mobile Applications to the Android market place for distribution.

Teaching and Evaluation Scheme:

Credit	Duration in Hours		Maximum Marks		
	Theory	Practical	CCE (Formative)	SEE (Summative)	Total
4	30	60	50	50	100

Course Content:

Unit I **[Weightage=25% approx., Lectures=7, Practicals=16]**

Introduction to Mobile Computing and Applications: Overview of Mobile Computing and its importance, Types of mobile applications: Native, Web and Hybrid apps, Introduction to Android platform, Mobile application development life cycle basics.

Getting Started with Android: Introduction to Android Operating System and its Architecture, Setting up the development environment (Android Studio, SDK), basic structure of an Android based Mobile Application Development project, overview of the Android Manifest file and Application components.

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Unit II **[Weightage=25% approx., Lectures=7, Practicals=14]**

XML: Basics, structure of XML data, XML Elements, XML Document, Data Storing and Extracting to/from XML document.

User Interface (UI) Design in Android: Understanding basic UI components (TextView, Button, ImageView, etc.).

Unit III **[Weightage=25% approx., Lectures=8, Practicals= 16]**

Introduction to Layouts: LinearLayout, RelativeLayout and ConstraintLayout, Designing simple user interfaces, Handling user input using buttons and text fields.

Activities and Intents: Introduction to Activities and the Activity Lifecycle, navigating between activities using Intents, Implicit and Explicit Intents, passing data between activities.

Basic Database: Introduction to SQLite database for local data storage.

Unit-IV **[Weightage=25% approx., Lectures=8, Practicals= 14]**

Simple Networking in Android: Basics of making network requests in Android, Introduction to WebView for displaying web content.

Introduction to Multimedia: Playing audio and video in Mobile Applications, displaying images in an app, basics of using the camera to capture images.

Application Testing and Debugging: Basic debugging techniques in Android Studio, Using Logcat to track errors, Testing apps on the emulator and real devices.

Publishing and Distributing Mobile Applications: Preparing an app for release, Introduction to APK generation and signing the app, basics of publishing an app to the Google Play Store. Introduction to app updates and versioning.

Text Book:

Beginning Android4 Application Development - Wei-Meng Lee WILEY India Edition WROX Publication Edition Published January 2012.

Reference Books:

- Beginning Android Programming - Jerome DiMarzio.
- Head First Android Development - Dawn Griffiths and David Griffiths.

Reference Links:

- https://developer.android.com/training/index.html
- https://developer.android.com/develop/index.html
- https://www.javatpoint.com/android-tutorial
- https://www.tutorialspoint.com/android
- https://kotlinlang.org

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Practical List:

- Setting up Android Development Environment using JAVA: Install Android Studio and configure SDK and AVD (Android Virtual Device).
- Create a Simple "Hello World" Android Application.
- Create a simple UI using different layouts (LinearLayout, RelativeLayout, ConstraintLayout).
- Create an app with a Button and EditText. Display the user's input when the button is clicked.
- Create an app with multiple activities. Use explicit intents to navigate between them.
- Pass data (e.g. a string) from one activity to another using intents.
- Create an app to store and retrieve data (e.g. a contact list) using SQLite database.
- Develop an app that allows users to capture an image using the device's camera and display it.
- Create a simple app that displays a Google Map with the user's current location.
- Develop an app that loads a webpage using WebView.
- Build the Android app in release mode and generate an APK file for distribution.
- Create a login application that requires email (username) validation. Ensure the login button remains disabled until both the username and password are validated.
- Create an application that displays a Toast message at specific time intervals.
- Implement a spinner populated with strings from the resource folder (res >> values). Change the displayed image based on the selected spinner value.

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BCA SEMESTER : VI
SUBJECT CODE : CAM305-3C
SUBJECT NAME : MOBILE APPLICATION DEVELOPMENT

COs	Course Outcome	POs/PSOs	CL Cognitive level	KC Knowledge Category	Class Sessions	Lab Sessions
CO1	Identify and explain mobile computing concepts and types of Mobile apps.	PO1, PO7, PSO1	U	C	5	4
CO2	Set up Android environment and create basic apps using XML and UI components.	PO2, PO5, PSO1, PSO2	AP	P	5	10
CO3	Design user interfaces using layouts and handle user inputs.	PO3, PO4, PSO2	AP	P	5	10
CO4	Implement activities, intents and use SQLite for local storage.	PO2, PO3, PO5, PSO1, PSO2	AP	P	5	12
CO5	Use multimedia, networking and test/debug apps on emulator/devices.	PO4, PO6, PO7, PSO2, PSO3	AP	P	5	12
CO6	Generate APKs and publish Android apps with versioning.	PO6, PO8, PO9, PSO1, PSO3	C	M	5	12

Mapping of COs with POs & PSOs

Course CAM305-3C	POs										PSOs		
	1	2	3	4	5	6	7	8	9	10	1	2	3
CO1	3	-	-	-	-	-	2	-	-	-	3	-	-
CO2	3	2	-	-	2	-	-	-	-	-	3	3	-
CO3	-	-	2	2	-	-	-	-	-	-	-	3	-
CO4	3	2	2	-	2	-	-	-	-	-	3	3	-
CO5	-	-	-	2	-	2	2	-	-	-	-	3	2
CO6	3	-	-	-	-	2	-	1	1	-	3	-	2

3: High, 2: Medium, 1: Low

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BCA Semester – VI (Third Year)

Subject Title : **Network Security**
Subject Code : **CAM306-3C**
Subject Type : **Major**

Rationale:
The subject provides a comprehensive framework for understanding how to protect Networks and data from security threats. The syllabus begins with foundational principles like confidentiality, integrity and availability. Students learn the importance and challenges of Securing Networks, Cryptographic Techniques, algorithms and methods to safeguard data. It also includes critical security protocols and compliance regulations to manage secure communications and meet Industry standards.

Learning Outcomes:
The Students will be able to:

- Understand the basics of Network Security, its goals, challenges and threats.
- Learn about Cryptographic concepts, Ciphers and Key Exchange Mechanisms.
- Identify and Mitigate Security Threats.
- Differentiate between Symmetric and Asymmetric Encryption, understand Key Management and explore Encryption algorithms like DES.
- Study Network Security protocols, Email Security, VPNs and regulatory compliance requirements.
- Implement Security Protocols and Ensure Compliance.

Teaching and Evaluation Scheme:

Credits	Duration in Hours		Maximum Marks		Total
	Theory	Practical	CCE (Formative)	SEE (Summative)	
4	60	-	50	50	100

Course Content:

Unit 1 **[Weightage=25% approx., Lectures=15]**

Introduction to Network Security:

Basics of Network Security: Definition and importance, Goals of Network Security (confidentiality, integrity and availability), Challenges of Computer Security, Security Services VS. Security Mechanisms, Network Security Models, OSI and TCP/IP models.

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Unit II **[Weightage=25% approx., Lectures=15]**

Cryptography: Cryptography, Cryptanalysis, Substitution Techniques, Simple Substitution Cipher, Caesar Cipher, Monoalphabetic Cipher, Polyalphabetic Cipher, Steganography, Symmetric VS. Asymmetric Encryption.

Unit III **[Weightage=25% approx., Lectures=15]**

Security Threats:

Intruders: Intrusion Detection, Password Management.

Malicious Software: Viruses and Related Threats, Virus Countermeasures, Worms, Distributed Denial of Service Attacks.

Unit IV **[Weightage=25% approx., Lectures=15]**

Network Security Protocols:

Secure communication protocols (SSL/TLS, SSH, HTTPS, IPsec), Email security protocols (PGP, S/MIME), Virtual Private Networks - VPNs Overview.

Firewalls: Need for Firewalls, Firewall Characteristics, Types of Firewalls, Firewall Basing.

Text Book:

Network Security Essentials: Applications and Standards - W. Stallings, 4th Edition. Pearson Education.

Reference Books:

- Cryptography and Network Security: Principles and Practice - W. Stallings, 6th Edition. Pearson Education.
- Cryptography and Network Security - Kahate, McGraw Hill Education.
- Cryptography and Network Security - Forouzan, McGraw Hill Education.
- Network Security Bible - Cole, Krutz and conley, Wiley.
- Mastering Network Security - Chris Branton, BPB.

Reference Links:

- https://www.fortinet.com/resources/cyberglossary/what-is-network-security
- https://www.esecurityplanet.com/networks/network-security/
- https://heimdalsecurity.com/blog/network-security-101/
- https://flylib.com/books/en/3.190.1.30/1/
- https://www.geeksforgeeks.org/caesar-cipher-in-cryptography/

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BCA SEMESTER : VI
SUBJECT CODE : CAM306-3C
SUBJECT NAME : NETWORK SECURITY

COs	Course Outcome	POs / PSOs	CL Cognitive level	KC Knowledge Category	Class Sessions
CO1	Understand the fundamentals, goals and models of network security, including the OSI and TCP/IP models.	PO1, PO2, PSO2	U, An	F, C	15
CO2	Apply classical cryptographic techniques such as Caesar Cipher, Monoalphabetic Cipher and differentiate between symmetric and asymmetric systems.	PO1, PO3, PSO1	U, An, Ap	C , P	15
CO3	Identify and analyze various security threats including intruders, malware and denial-of-service attacks.	PO2, PO4, PSO2	U, An	F , C	15
CO4	Explain secure communication protocols such as SSL/TLS, HTTPS, SSH and IPsec.	PO1, PO2, PSO2	U, An	C	7
CO5	Describe and evaluate email security protocols (PGP, S/MIME) and virtual private networks (VPNs).	PO5, PO7, PSO3	U, E	C	5
CO6	Examine the need, types and functions of firewalls in network security.	PO6, PO8, PSO3	An, E	C , M	3

Mapping of COs with POs & PSOs

Course CAM306-3C	POs										PSOs		
	1	2	3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	3	3	-	-	-	-	-	-	-	-	-	3	-
CO2	3	-	3	-	-	-	-	-	-	-	3	-	-
CO3	-	3	-	3	-	-	-	-	-	-	-	3	-
CO4	3	3	-	-	-	-	-	-	-	-	-	2	-
CO5	-	-	-	-	1	-	1	-	-	-	-	-	1
CO6	-	-	-	-	-	1	-	1	-	-	-	-	1

3: High, 2: Medium, 1: Low

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BCA Semester – VI (Third Year)

Subject Title : Digital Marketing Management
Subject Code : CAE303-3C
Subject Type : Minor

Rationale:

This course equips students with essential skills to navigate the evolving field of Digital Marketing. As businesses increasingly rely on digital platforms, understanding strategies and tools is essentials. The course covers key concepts and practical applications to prepare students for successful Digital Marketing careers.

Learning Outcomes:

The Students will be able to:

- Define Digital Marketing and its significance in business.
- Differentiate between earned, owned and paid digital media.
- Understand the evolution of the digital ecosystem and its marketing implications.
- Apply SEO, SEM, Social Media and Email Marketing strategies.
- Use digital analytics to measure marketing performance.
- Develop and manage digital marketing campaigns.
- Create content for various Digital Media platforms.
- Implement brand-building and customer engagement strategies.
- Continuously improve marketing through Data-Driven Analysis.

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Teaching and Evaluation Scheme:

Credits	Duration in Hours		Maximum Marks		Total
	Theory	Practical	CCE (Formative)	SEE (Summative)	
4	60	-	50	50	100

Course Content:

Unit I **[Weightage=25% approx., Lectures=15]**

Introduction to Digital Marketing:

Definition and Scope of Digital Marketing: Understand digital marketing, relevance in modern business.

Types of Digital Media: Earned, owned and paid media and their roles in Digital Marketing strategies.

Evolution of the Digital Ecosystem: Exploring evolution of Digital Marketing alongside technological advancements.

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Key components of Digital Marketing: SEO, SEM, Social Media Marketing, Email Marketing etc.

Introduction to Digital Analytics: Tools and techniques to measure Digital Marketing performance.

Unit II **[Weightage=25% approx., Lectures=15]**

Marketing Using Digital Forms:

Search Engine Optimization (SEO): On-site and off-site SEO techniques, keyword research and optimizing web content for better visibility.

Search Engine Marketing (SEM): Introduction to paid search marketing, including Google AdWords and campaign creation.

Email and Mobile Marketing: Strategies for effective email campaigns and leveraging mobile platforms for marketing.

Digital Advertising Channels: Explore different digital ad formats, such as display ads, video ads and social media ads.

Conversion Optimization: Techniques to turn website visitors into paying customers.

Unit III **[Weightage=25% approx., Lectures=15]**

Managing Digital Media:

Social Media Platforms: Overview of major social media platforms like Facebook, Instagram, Twitter, LinkedIn and YouTube.

Content Creation: Creating engaging, relevant content for different digital platforms.

Social Media Advertising: Creating and managing paid campaigns on social platforms.

Campaign Monitoring & Analysis: Learning track social media campaign performance and optimize for better results.

Digital Media Strategies: Building long-term strategies for sustained digital media success.

Unit IV **[Weightage=25% approx., Lectures=15]**

Managing Tools for Brand Building and Marketing:

Digital Marketing Tools: Tools for SEO, SEM, Social Media Management, email marketing and Web Analytics.

Data Analytics & Reporting: Utilizing Google Analytics and other tools to analyze data and make informed decisions.

Brand Building through Digital Platforms: Strategies to enhance brand visibility and customer engagement.

Monitoring Digital Performance: Techniques for tracking marketing performance across all platforms.

Improving Digital Marketing Efforts: Continuous improvement strategies for maintaining a strong digital presence.

Textbooks:

- Digital Marketing Analytics, Second Edition - Chuck Hemann, Pearson.
- eMarketing: The Essential Guide to Digital Marketing - Rob Stokes.
- Digital Marketing Analytics: Making Sense of Consumer Data in a Digital World - Chuck Hemann, Ken Burbary, QUE.

Reference Books:

- Understanding Digital Marketing - Damian Ryan, 3rd Edition, Kogan Page.
- Essential Digital Marketing Tools - Smart Insights.
- Successful SEO and Search Marketing in a Week - Nick Smith, Hodder & Stoughton.
- 500 Social Media Marketing Tips - Andrew Macarthy, Createspace Independent Publishing.
- E-Marketing Excellence: Planning and Optimizing Your Digital Marketing - P. R. Smith, Routledge.
- Digital Marketing Analytics: Making Sense of Consumer Data in a Digital World - Chuck Hemann, Ken Burbary, QUE.

Reference Links:

- https://www.wrike.com/digital-marketing-guide/faq/what-is-digital-marketing-management/
- https://en.wikipedia.org/wiki/Search_engine_marketing
- https://www.tutorialspoint.com/digital_marketing/index.htm
- https://www.geeksforgeeks.org/what-is-digital-marketing/

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BCA SEMESTER : VI
SUBJECT CODE : CAE303-3C
SUBJECT NAME : DIGITAL MARKETING MANAGEMENT

COs	Course Outcome	POs/PSOs	CL Cognitive level	KC Knowledge Category	Sessions
CO1	Define digital marketing concepts and explain the role and significance of earned, owned and paid media in the digital ecosystem.	PO1, PO5, PO8, PSO2	U	C	10
CO2	Demonstrate understanding of core digital marketing components including SEO, SEM, social media and email marketing.	PO1, PO2, PO3, PSO1	U	C	10
CO3	Apply SEO and SEM techniques to improve online visibility and design effective email and mobile marketing strategies.	PO2, PO3, PO7, PSO1, PSO2	Ap	P	10
CO4	Create and manage social media campaigns across various platforms and evaluate their performance using analytics tools.	PO2, PO4, PO7, PO9, PSO1	Ap	P	10
CO5	Utilize content creation, digital tools and advertising channels to build brand identity and drive customer engagement.	PO1, PO5, PO7, PO8, PSO3	Ap	C	10
CO6	Use data analytics tools for monitoring, reporting and continuous improvement of digital marketing performance.	PO3, PO9, PO10, PSO2, PSO3	An	M	10

Mapping of COs with POs & PSOs

Course CAE303-3C	POs										PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	3	-	-	-	2	-	-	2	-	-	-	3	-
CO2	3	3	3	-	-	-	-	-	-	-	3	-	-
CO3	-	3	3	-	-	-	3	-	-	-	3	3	-
CO4	-	3	-	1	-	-	3	-	2	-	3	-	-
CO5	3	-	-	-	2	-	3	2	-	-	-	-	2
CO6	-	-	3	-	-	-	-	-	2	1	-	3	2

3: High, 2: Medium, 1: Low

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BCA Semester – VI (Third Year)

Subject Title : **Communication and Soft Skills for Professional Success**
Subject Code : **AEC301-3C**
Subject Type : **AEC**

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Rationale:

- Preparing students for trainings, internships, employment purpose
- Enabling students to understand the requirements of the professional set up
- To help students groom their expressional skills
- To help develop basic idea about research and to be aware of the skills required for the same.

Learning Outcomes:

The Students will be able to:

- The knowledge and understanding of the skills required for employment.
- The clarity on the requirements of a professional setup in terms of communication.
- The practical and theoretical exposure to the written as well as oral communication at the professional front and the skills required for the same.
- Acquisition of the basic idea of research and the subskills required for carrying it out efficiently

Teaching and Evaluation Scheme:

Credits	Duration in Hours		Maximum Marks		Total
	Theory	Practical	CCE (Formative)	SEE (Summative)	
2	30	-	25	25	50

Course Content:

Unit I **[Weightage=46% approx., Lectures=14]**

Preparing for the world of work: Application letter and Cover letter.

Resume crafting- types of layouts, Components, Preparing resume based on a relevant job notification.

Group discussion: Difference between GD and debate, Importance of GD, Process of GD, Do's and Don'ts of participating in GD.

Personality traits to be evaluated, Dynamics of group behavior / group etiquette and mannerism, types, opening, summarizing and some tips.

Job interview, Stages & types of Job Interviews.

Preparation, performance and follow-up (Includes some group practice and role play).

Body language, Do's and Don'ts of body language, Body language in an interview. Negotiation.

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Unit II **[Weightage=27% approx., Lectures=8]**

Professional skills:

Communication by writing and speaking: Case study , Task Based Expressional Skills check, Overview of written and spoken expressions.

Steps to be followed for written and oral expressions (10 steps).

Critical thinking: case study, Task Based Expressional Skills check.

Definition, importance and seven-step plan for critical-thinking.

Leadership Skills , Trust & Empowerment, Connection & Learning, Leadership & Culture.

Unit III **[Weightage=27% approx., Lectures=8]**

Basic skills in research and documentation:

Characteristics of Research, Various data collection tools and techniques. Proposals, Purpose of writing a proposal, Importance and types of Technical Proposals, Structure of a proposal. Preparing and using questionnaires and schedules, Advantages, difference between the Two. Using graphics in presentations and research (includes practical graphics and their interpretation), Common terms, reasons to use, general guidelines for using them.

Table, bar graph, pie chart.

Organizational chart graphics and writing and presenting their summary, Practical tasks of generating the graphics with the help of AI.

Reference Books:

- Communication Skills - Kumar, Sanjay and Pushpa Lata, Oxford UP, 2011.
- T. V. S. Technical Communication: A Practical Approach – Padmaja, Pearson, 2009.
- Personality Development and Soft Skills - Mitra, Barun, Oxford UP, 2012.
- Cornerstone: Developing Soft Skills - Sherfield, Robert, Rhonda Montgomery and Patricia Moody, Pearson, 2018.
- C. R. Research Methodology: Methods and Techniques – Kothari, 2nd ed., New Age International, 2004.
- The Official Cambridge Guide to IELTS Academic - Cullen, Pauline, Vanessa Jakeman and Michael French, Cambridge UP, 2014.

Reference Links:

- https://hbr.org/2016/03/the-most-important-leadership-competencies-according-to-leaders-around-the-world
- The Most Important Leadership Competencies, According to Leaders Around the World by Sunnie Giles, March 201, Harvard Business Review.
  https://www.researchgate.net/profile/Sunnie-Giles/publication/323229010_The_Most_Important_Leadership_Competencies_According_to_Leaders_Around_the_World/links/5a876a6daca272017e5aba03/The-Most-Important-Leadership-Competencies-According-to-Leaders-Around-the-World.pdf?origin=publication_detail&_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6Il9kaXJlY3QiLCJwYWdlIjoicHVibGljYXRpb25Eb3dubG9hZCIsInByZXZpb3VzUGFnZSI6InB1YmxpY2F0aW9uIn19&cf_chl_tk=9rdqFKHM8zdiqmeuYnFAGy11FqgO1oFaVdCKkgLSJVs-1743220188-1.0.1.1-LCA4.1fPWL750edVGms51Ff7AQ8UdKplBecHdJYz.Hc

BCA SEMESTER: VI
SUBJECT CODE: AEC301-3C
SUBJECT NAME: COMMUNICATION AND SOFT SKILLS FOR PROFESSIONAL SUCCESS

COs	Course Outcome	POs/PSOs	CL Cognitive level	KC Knowledge Category	Field Sessions
CO1	Illustrate the skills to enhance employability and apply them for successful participation in trainings, internships and job interviews.	PO6, PO7, PSO3	U, Ap, C	C, P	14
CO2	Demonstrate the essentials of written and professional communication based in critical thinking and leadership skills.	PO5, PO6, PO7, PSO3	U, Ap, An	C, P	08
CO3	Discuss fundamental research concepts and identify essential skills for conducting academic research.	PO6, PO7, PO9, PSO3	U	C	08

Mapping of COs with POs & PSOs

Course AEC301-3C	POs										PSOs		
	1	2	3	4	5	6	7	8	9	10	1	2	3
CO1	-	-	-	-	-	3	3	-	-	-	-	-	3
CO2	-	-	-	-	1	3	3	-	-	-	-	-	3
CO3	-	-	-	-	-	3	3	-	1	-	-	-	3

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BCA Semester – VI (Third Year)

Subject Title : Internship
Subject Code : SEC351-3C
Subject Type : SEC

Rationale:
This is aimed to provide real practical exposure to students in the actual projects of the Industry and various types of other organizations. They need to apply learned concepts, procedures and tools to the project assigned as per the need of the organization. The students should be motivated to deliver the expected output as per the requirement of the project and add-value to the project by applying their skills and knowledge. This is also aimed to fill the gap between the Industry and academy.

Learning Outcomes:
The Students will be able to:

- Student will learn how real work is carried out in the Industry.
- They will learn practically how a real-life project and tasks are executed in the Industry.
- They also learn the integration of work with teammate.
- They get platform to know and understand the current Industry requirement.

Teaching and Evaluation Scheme:

Credit	Duration in Hours		Maximum Marks		
	Theory	Practical	CCE (Formative)	SEE (Summative)	Total
4	-	120	50	50	100

Course Content:

It will be counted under Major course and hence Internship can be done in major specific courses only

Minimum 120 hours industrial utility project should be carried out at the organization.

The project work can be related to one or combination of the following types:

- Software Development
- Mobile Application Development
- Software Testing
- Software Maintenance
- ERP - implementation, maintenance, support and customization
- Database Administration and Support
- System and Network Administration

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- System Study, Analysis and Design of major applications
- Multimedia Application Development
- Web-site development with database application
- Data Warehousing, Data Mining
- Data Science, Big Data Analytics
- Application of Software Tools in Research Project/Organization
- Applications/Work related GIS, GPS, RS
- Any industrial utility work in Computer Science / Information Technology and its applications – with prior approval of respective Head of the Institute of BCA.

The work carried out on the project should be well-documented, approved & certified by the respective authorities of the organization. Student should present their work done in the project to the examiners during the evaluation of the projects.

Please Note: The Internship Work shall be submitted as an Internship Project Work – VI Presentation / Report / Project Demonstration.

25/09/2015

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BCA SEMESTER:VI
SUBJECT CODE: SEC351-3C
SUBJECT NAME: INTERNSHIP

COs	Course Outcome	POs/PSOs	CL Cognitive level	KC Knowledge Category	Field Sessions
CO1	Present professional self-introduction, internship details and organizational overview.	PO6, PO7, PSO3	U	C	10
CO2	Explain internship objectives, alignment with academics and career goals	PO1, PO2, PO5, PSO3	U	C	10
CO3	Demonstrate understanding of company profile, organizational structure, tools and technologies.	PO1, PO2, PO3, PO4, PSO1	AP	P	20
CO4	Apply technical knowledge and tools in carrying out project tasks.	PO2, PO3, PO4, PO7, PO10, PSO1	AP	P	40
CO5	Develop technical, soft skills and problem-solving ability.	PO5, PO6, PO7, PO8, PO9, PSO2	AP	P	20
CO6	Reflect on challenges, contributions, learning outcomes and future career scope.	PO5, PO8, PO9, PSO2	N	M	20

Mapping of COs with POs & PSOs

Course SEC351-3C	POs										PSOs		
	1	2	3	4	5	6	7	8	9	10	1	2	3
CO1	-	-	-	-	-	1	3	-	-	-	-	-	1
CO2	1	3	-	-	2	-	-	-	-	-	-	-	1
CO3	1	3	3	3	-	-	-	-	-	-	3	-	-
CO4	-	3	3	3	-	-	3	-	-	2	3	-	-
CO5	-	-	-	-	2	1	3	2	2	-	-	2	-
CO6	-	-	-	-	2	-	-	2	2	-	-	2	-

3: High, 2: Medium, 1: Low

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