ADITYA DEGREE COLLEGE – KAKINADA
COURSE OUTCOMES - BCA PROGRAM

Course Code	Course Name	CO No.	Semester -1 Course Outcome
ENG-I	English-I (A Course in Communication and Soft Skills)	CO1	Use grammar effectively in writing and Speaking.
		CO2	Demonstrate the use of good vocabulary.
		CO3	Demonstrate an understanding of writing skills.
		CO4	List Soft Skills in professional and daily life.
		CO5	List the tools of communication skills.
LSC-1	Life Skill Course - I (ENTEPRENEURSHIP DEVELOPMENT)	CO1	Recall the concept of Entrepreneurship, its applications and scope.
		CO2	List the types of financial institutions that help the business at Central, State and Local Level.
		CO3	Recall Central and State Government policies, A ware of various tax incentives.
		CO4	Summarize on generating a broad idea for a starting an enterprise/start up.
		CO5	Discuss on preparing a Project Report for a start up and differentiate between financial, technical analysis an business feasibility.
		CO6	Operate data using charts and spread sheets.
SDC-1	Skill Development Course - I (Insurance Promotion)	CO1	List the field level structure and functioning of insurance sector and it's role in protecting the risks.
		CO2	Recall pertaining skills and their application for promoting insurance coverage
		CO3	Explain the Insurance Agent examination conducted by IRDA
		CO4	Summarize 'promoting insurance coverage practice' as one of the career options.
C1	Computer Fundamentals & Office tools	CO1	Describe the usage of computers and why computers are essential components in business and society.
		CO2	Identify categories of programs, system software and applications. Organize and work with files and folders.
		CO3	Operate on edit a word document and working with macros.
		CO4	Operate on work sheets and using various functions.
		CO5	Apply the presentations and inserting multimedia in them
C1-P	Computer Fundamentals & Office tools-Lab	CO1	Discuss about the impact of computers on society.
		CO2	Recall basic hardware peripherals.
		CO3	List different number systems
		CO4	Explain the the basics of programming.

C2	Programming in C	CO1	Demonstrate the basic terminology used in computer programming
		CO2	Compute programs in C language.
		CO3	Use different data types in a computer program.
		CO4	Compute programs involving decision structures, loops and functions.
		CO5	Describe the dynamics of memory by the use of pointers and Structures.
		CO6	Apply different operations in File handling.
C2-P	Programming in C – Lab	CO1	Identify the logic for a given problem.
		CO2	Write the algorithm of a given problem.
		CO3	Identify the syntax and construction of C programming code.
		CO4	Discuss steps involved in compiling, linking and debugging C code.
		CO5	Write programs to print output on the screen as well as in the files
		CO6	Identify proper use of user defined functions
C3	Numerical and Statistical Methods	CO1	Apply appropriate numerical methods to obtain appropriate solutions to difficult mathematical problems.
		CO2	Apply various statistical techniques such as Measures of Central Tendency and Dispersion.
		CO3	Demonstrate relationship between variables using the method of Correlation and Fit Analysis.
		CO4	Solve programs of various Numerical Methods and Statistical techniques for solving mathematical problems.
C3-P	Numerical and Statistical Methods-Lab	CO1	Identify the system of equations using various methods
		CO2	Solve the roots of the equation using various methods of techniques
		CO3	Solve the different integral values using various techniques.
		CO4	Solve the standard deviation and rank correlation coefficient, coefficient of skewness for tabular data.

Semester -2

Course Code	Course Name	CO NO	Course Outcome
ENG-II	English - II (A Course In Reading & Writing Skills)	CO1	Use reading skills effectively.
		CO2	List the different types of texts.
		CO3	Summarize what is being read.
		CO4	Demonstrate repository of active vocabulary.
		CO5	List the good writing strategies.
		CO6	Write well for any purpose.
LSC-II	Life Skill Course - II (INFORMATION &	CO1	List the literature of social networks and their properties.

	COMMUNICATION TECHNOLOGY)	CO2	Explain which network is suitable for whom.
		CO3	Discuss about the skills to use various social networking sites
		CO4	Write few GOI digital initiatives in higher education.
		CO5	Apply skills to use online forums, docs, spreadsheets, etc for communication, collaboration and research.
		CO6	Compare internet threats and security mechanisms.
SDC-II	Skill Development Course - II (Survey & Reporting)	CO1	Write the basics of survey and reporting needs and methods
		CO2	Discuss on designing of a questionnaire
		CO3	Demonstrate on a simple and valid survey and Collect data
		CO4	Summarize on interpret data and submit report.
SDC-III	Skill Development Course - III (Business Communication)	CO1	Identify the types of business communication and correspondence
		CO2	List the processes like receiving, filing and replying
		CO3	Explain about preparing good business communications
		CO4	Write about organizational communication requirements and presentations.
		CO5	Discuss search engine, payment gateways and SEO techniques.
C4	Data Structures	CO1	Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms.
		CO2	Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs.
		CO3	Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs
		CO4	Demonstrate different methods for traversing trees
		CO5	Compare alternative implementations of data structures with respect to performance
		CO6	Compare and contrast the benefits of dynamic and static data structures implementations
		CO7	Describe the concept of recursion, give examples of its use, describe how it can be implemented using a stack.
		CO8	Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing
C4-P	Data Structures-Lab	CO1	Identify the appropriate data structure for given problem.
		CO2	Solve problems using different data structures.
		CO3	Solve problems using trees, graphs and hash tables addressing various issues.
C5	Introduction to Python Programming	CO1	Demonstrate concepts of python programming
		CO2	Identify logic for Problem Solving.

		CO3	Apply the problem solving skills using syntactically simple language
		CO4	Compute new GUI based programming to solve industry standard problems
C5-P	Introduction to Python Programming Lab	CO1	List the python data structures like Lists, Tuples, Sets and dictionaries.
		CO2	Compute practical and contemporary applications using Functions, Modules and Regular Expressions.
		CO3	Solve Python programs with conditionals and loops.
		CO4	Solve programs on Read and write data from/to files in Python
C6	Data Base Management System	CO1	Write about the definitions of Database and DBMS.
		CO2	Demonstrate the fundamental concepts of DBMS with special emphasis on relational data model.
		CO3	Demonstrate normalization theory and apply such knowledge to the normalization of a database
		CO4	Design database schemas based on the model.
		CO5	Create a small database using SQL.
		CO6	Apply Use, Store and Retrieve data in database.
C6-P	Data Base Management System Lab	CO1	Write the basic knowledge of SQL queries and relational algebra.
		CO2	Construct database models for different database applications.
		CO3	Apply normalization techniques for refining of databases.
		CO4	Operate on various triggers, procedures, and cursors usingPL/SQL.

Semester -3

Course Code	Course Name	CO NO	Course Outcome
ENG-III	English - III (A Course In Conversational Skills)	CO1	Discuss on Speaking fluently in English.
		CO2	Demonstrate confidently in any social interaction.
		CO3	Summarize on professional discourse.
		CO4	Demonstrate critical thinking.
		CO5	Identify conversational skill by observing the professional interviews.
LSC-III	Life Skill Course - III (ENVIRONMENTAL EDUCATION)	CO1	List the nature, components of an ecosystem and that humans are an integral part of nature.
		CO2	Write the importance of environment, the goods and services of a healthy biodiversity, dependence of humans on environment.
		CO3	Explain the ways and ill effects of destruction of environment, population explosion on ecosystems and global problems consequent to anthropogenic activities.

		CO4	Discuss the laws/ acts made by government to prevent pollution, to protect biodiversity and environment a s a whole.
		CO5	List the international agreements and national movements, and realize citizen's role in protecting environment and nature.
LSC-IV	Life Skill Course - IV (ANALYTICAL SKILS)	CO1	Identify the basic concepts of arithmetic ability, quantitative ability, logical reasoning, business computations and data interpretation and obtain the associated skills.
		CO2	List the competency in the use of verbal reasoning.
		CO3	Apply the skills and competencies acquired in the related areas.
		CO4	Solve problems pertaining to quantitative ability, logical reasoning and verbal ability inside and outstand the campus.
SDC-IV	Skill Development Course - IV (Online Business)	CO1	Identify the online business and its advantages and disadvantages
		CO2	Recall new channels of marketing, their scope and steps involved
		CO3	Summarize the procurement, payment process, security and shipping in online business
		CO4	Develop new marketing tools for online business
		CO5	List the search engine, payment gateways and SEO techniques.
C7	Accounting and Financial Management	CO1	Operate Company Setup &Configurations
		CO2	Summarize Recording Financial Transactions.
		CO3	Identify Financial Reports Analysis
C7-P	Accounting and Financial Management Lab	CO1	Describe the steps for how to create, delete, shut, alter a company using Tally
		CO2	Demonstrate creation of different type of Vouchers using Tally
		CO3	List Trial Balance, Ledger Balance, Profit and Loss Accounts, Balance Sheet using Tally
C8	Object Oriented Programming through Java	CO1	Demonstrate good object-oriented programming skills in Java
		CO2	Apply and implement selected design patterns in Java
		CO3	Identify the capabilities and limitations of Java
		CO4	Summarize common errors in Java and its associated libraries
		CO5	Develop excellent debugging skills
C8-P	Object Oriented Programming through Java Lab	CO1	Summarize the necessity for Object Oriented Programming paradigm and over structured programming
		CO2	Develop java programs, analyze, and interpret object oriented data and report results.

		CO3	Design an object oriented system, AWT components or multithreaded process as per needs and specifications.
		CO4	Demonstrate an ability to visualize and work on laboratory and multidisciplinary tasks like console and windows applications both for standalone and Applets programs
		CO5	Write simple GUI interfaces for a computer program to interact with users, and to understand the event-based GUI handling principles.
		CO7	Describe the programming skills in the Java language.
		CO8	Design a computer program to solve real world problems based on object-oriented principles.
C9	Operating Systems	CO1	Demonstrate the main components and Structure of Operating System& their functions.
		CO2	Summarize various ways of Process Management& CPU Scheduling Algorithms.
		CO3	Operate on various device and resources like Memory, Time and CPU Management techniques in distributed systems.
		CO4	Apply different methods for Preventing Deadlocks in a Computer System.
		CO5	Create and build an Application/Service over the UNIX operating system.
C9-P	Operating Systems Lab	CO1	Write and execute simple Unix commands in Unix environment
		CO2	Operate on editing a text files using the standard commands.
		CO3	Operate on Shell scripts to perform various operations
		CO4	Develop different scheduling Algorithms using operating system concepts
		CO5	Operate various file/directory handling commands.

Semester -4

Course Code	Course Name	CO NO	Course Outcome
C10	Cyber Laws	CO1	Summarize ongoing developments in law relating to information technologies.
		CO2	Explain areas of doctrinal and political debate surrounding rules and theories;
		CO3	List the rules and theories in terms of internal coherence and practical outcomes.
		CO4	Discuss on the analysis and evaluation contained in primary and secondary sources.
C10-P	Cyber Laws Lab	CO1	Identify how to recovering deleted files from a hard disk.
		CO2	Recall how to Gather,view and locate various file formats and evidences

		CO3	Compute on cyber crime scenarios
		CO4	Solve programs on data from packets
C11	Data Mining and Ware Housing	CO1	List the types of the data to be mined and present a general classification of tasks and primitives to integrate a data mining system.
		CO2	Apply preprocessing statistical methods for any given raw data
		CO3	Summarize interesting patterns from large amounts of data to analyze and extract patterns to solve problems, make predictions of outcomes
		CO4	Identify the roles that data mining plays in various fields and manipulate different data mining techniques
		CO5	Apply proper data mining algorithms to build analytical applications.
		CO6	List the wide range of emerging and newly-adopted methodologies and technologies to facilitate the knowledge discovery.
C11-P	Data Mining and Ware Housing Lab	CO1	List the various kinds of tools.
		CO2	Demonstrate the classification, clustering and etc. in large data sets.
		CO3	Solve mining algorithms as a component to the exiting tools.
		CO4	Apply mining techniques for realistic data.
C12	Web Programming	CO1	Identify the Building Blocks of PHP, Access array elements
		CO2	List various functions and handle data using files
		CO3	Develop Forms, Sessions, Cookies
		CO4	Develop & implement JavaScript
C12-P	Web Programming Lab	CO1	Build HTML Pages
		CO2	Solve programs using JavaScript for Validations
		CO3	Solve programs in PHP
		CO4	Develop forms and connect to database using MYSQL
C13	Data Communications & Networking	CO1	Define computer networks, list network configurations, types, topologies, the applications of computer networks in different fields, network models and description of physical layer.
		CO2	Explain flow and error control at the data link layer with associated protocols.
		CO3	List the shared channel access methods, associated protocols and Wired & Wireless LAN standards and implementations.
		CO4	List the types of networking devices / equipments and also explain the addressing scheme used at the network layer.
		CO5	Explain how network layer, transport layer and application layer facilitates the transfer of message from one node to another in a global network

C13-P	Data Communications & Networking Lab	CO1	List the wired computer network topologies.
		CO2	Describe how to use the relevant network model for the specified data communication system.
		CO3	Solve how to Configure the network component and assign IP address
		CO4	Use transmission medium and modem for data transmission.
		CO5	Solve on error detection/correction and flow control of data in the data network.
C14	Data Analytics Using R	CO1	Identify new approaches to dramatically improve their ability to grasp information hiding in their data
		CO2	Describes any effort to help people understand the significance of data by placing it in a visual context.
		CO3	Recall Patterns, trends and correlations that might go undetected in text-based data.
		CO4	Discuss about charts, plots and visualizations.
		CO5	List data visualization package for the statistical programming language R.
C14-P	Data Analytics Using R Lab	CO1	Identify the basics of data analytics using concepts of statisticsand porbability
		CO2	Apply various inferential statistical analysis techniques to describe data sets and withdraw useful conclusions from acquired data set.
		CO3	Summarize and solve the data analytics techniques using various tools
		CO4	Solve advanced techniques to conduct thorough and insightful analysis and interpret the results
		CO5	Apply data science concept and methods to solve problems in real world context
C15	Object Oriented Software Engineering	CO1	Describe the three pillars of object-orientation methodologies and explain the benefits of each.
		CO2	Develop use case documents that capture requirements for a software system.
		CO3	Develop class diagrams that model both the domain model and design model of a software system.
		CO4	Design interaction diagrams that models the dynamic aspects of a software system.
		CO5	Identify the facets of the Unified Process approach to designing and building a software system.
		CO6	Develop a model for the user interface (UI) of a software application
C15-P	Object Oriented Software Engineering Lab	CO1	Identify the software engineering methodologies involved in the phases for project development
		CO2	List the open source tools used for implementing software engineering methods.

Course Code	Course Name	CO NO	Course Outcome
		CO3	Develop product-prototypes implementing software engineering methods.
		CO4	Operate on the system and its design in object oriented manner approach using UML with open source tools

<p style="text-align:center">Semester -5</p>

Course Code	Course Name	CO NO	Course Outcome
6A	Machine Learning Using Python	CO1	Identify the characteristics of machine learning.
		CO2	Summarize the Model building and evaluation approaches
		CO3	Apply Bayesian learning and regression algorithms for real-world Problems.
		CO4	Apply supervised learning algorithms to solve the real-world Problems.
		CO5	Apply unsupervised learning algorithms for the real world data.
6A-P	Machine Learning Using Python Lab	CO1	Write the implementation procedures for the machine learning algorithms
		CO2	Solve Python programs for various Learning algorithms.
		CO3	Apply appropriate data sets to the Machine Learning algorithms
		CO4	Identify and apply Machine Learning algorithms to solve real world problems
7A	Digital Imaging	CO1	List Types of Graphics, Types of Objects, Types of video editing tools
		CO2	Identify editing and altering photographs for through a basic tool box
		CO3	Recall about using the layers.
		CO4	Operate on the selection tools, repair tools
		CO5	Apply filters and can show their skills.
7A-P	Digital Imaging Lab	CO1	List different types of images and how to use basic and advanced features of GIMP Software for creating and image editing tools.
		CO2	Design visiting cards and cover page of a book
		CO3	Design Brochures,Phamphlets, Title designing ,Image modicfications using image tools.
		CO4	Operate on layers, filters,vector graphics using image editing tools.
6B	Cyber Security And Malware Analysis	CO1	Identify the computer networks, networking tools and cyber security
		CO2	Describe about NIST Cyber Security Framework
		CO3	Identify the OWASP Vulnerabilities
		CO4	Operate various Malware analysis tools
		CO5	Identify about Information Technology act 2000
6B-P	Cyber Security And Malware Analysis Lab	CO1	Identify on Cyber security and protection of electronic systems and information from malware attacks.

		CO2	Operate on configuration of LAN using switch and router
		CO3	Understand and Implementaton of Trojan tools.
		CO4	Identify and implemnt the packet sniffing mechanism using wireshark tool
7B	Internet Of Things	CO1	Identify various applications of IOT in real world and industry domain·
		CO2	Recall the revolution of Internet in Mobile Devices, Cloud & Sensor Networks·
		CO3	Identify building blocks of Internet of Things and characteristics
		CO4	Design and develop IOT devices
7B-P	Internet Of Things Lab	CO1	Operate on IOT, Arduino/ Raspberry Pi, and also able to install software setup of Arduino/Raspberry Pi.
		CO2	List of different operating systems for Raspberry Pi / Beagle board.
		CO3	Identify the different supporting OS platforms of Raspberry-Pi/ Beagle board
		CO4	Use Raspberry Pi/ Beagle board circuit with external resources
6C	Mobile Application Development	CO1	Identify basic terms ,tools and software related to android systems
		CO2	Describe components of IDE, understand features of android development tools
		CO3	Describe the layouts and controls
		CO4	Explain the significance of displays using the given view
		CO5	Explain the features of services and able to publish android Application
		CO6	Develop interesting Android applications using MIT App Inventor
6C_P	Mobile Application Development Lab	CO1	Identify the android platform
		CO2	Design and implementation of various mobile applications
7C	Pc Hardware And Networking	CO1	Identify the computer peripherals, software and hardware devices
		CO2	Describe the basics of networks and networking tools
		CO3	Describe the Network Addressing and sub-netting
		CO4	Explain the Networks protocols and management
		CO5	Identifiy Basic Network administrator roles
7C-P	Pc Hardware And Networking Lab	CO1	Operate on Basic of Computer assembling and trouble shooting.
		CO2	Operate on Computer networking and trouble shooting

Semester -1

Course Code	Course Name	CO	Course Outcome
TEL-I	Language H/T/S - I (Telugu)	CO1	1. రాజనీతి:- 11వ శతాబ్దపు కవుల జీవన విధానం, సాంఘిక పరిస్థితులు రాష్ట్రపాలనలో రాజులు అనుసరించాల్సిన నీతిని తెలుసుకుంటారు.
		CO2	2. దక్షయజ్ఞం:- శైవ, వైష్ణవాల మధ్య భేదాలి, అహంకారం ఎలాంటి దుష్పరిణామాలకు దారి తీస్తుందో నేర్చుకుంటారు.
		CO3	3. ధౌమ్యధర్మోపదేశం:- సేవకులు యజమానులను సేవించేటప్పుడు తీసుకోవల్సిన జాగ్రత్తలను గ్రహిస్తారు.
		CO4	4. పల్లాటిబొమ్ములి:- నాటికి నేటికి యుద్ధాలలో ఉన్న తేడాలను నేర్చుకుంటారు.
		CO5	5. సీతారామణ సంవాదం:- స్త్రీలు కూడా కవిత్వాలు ప్రాయగలరని, సీతలాంటి స్త్రీ గుణగణాలను రావణుని వంటి నీచుల మనస్తత్వాలను నేర్చుకుంటారు.
HIN-I	Language H/T/S - I (Hindi)	CO1	भारतीय सम्राटों की साहित्य, मित्रता और महानता का महत्व।
		CO2	धर्मों, रुचियों का प्राचीन अंतर (वित्तीय, व्यवसाय और मानव का परिवर्तन)
		CO3	भाषा और उसके व्याकरण कौशल का विकास करना
		CO4	प्रशासनिक शब्दावली, अनुवाद- हिंदी से अंग्रेजी, अंग्रेजी से हिंदी
		CO5	पत्र लेखन की संरचना। पत्र लेखन के प्रकार

Semester -2

Course Code	Course Name	CO	Course Outcome
TEL-II	Language H/T/S - II (Telugu)	CO1	1. ఆధునిక కవిత్వం :- ఆధునిక కవిత్వం, భావకవిత్వం, అభ్యుదయ కవిత్వం, విప్లవకత్వాల గూర్చి నేర్చుకుంటారు.
		CO2	2. కథానిక :- కథానిక ఆవిర్భావ, వికాసాలను గ్రహించి నూతన కథానికలు ప్రాయడానికి సిద్ధమైతారు.
		CO3	3. నవల:- నవల స్వరూప స్వభావాలను తెలుసుకొని జగన్నాథరథచక్రాల నవలలోని పాత్రలు 1947 నాటి సామాజిక పరిస్థితులను గ్రహిస్తారు.
		CO4	4. నాటకం:- సాహిత్యంలో నాటక ప్రభావాన్ని, నాటక లక్షణాలను గ్రహిస్తారు.
HIN-II	Language H/T/S - II (Hindi)	CO1	रोगों के बारे में जागरूकता, बालिकाओं की समस्या और पेट्रीटिज्म, भारत की महानता
		CO2	कहानी लेखन के बारे में रचनात्मकता का विकास
		CO3	सही वाक्य बनाकर भाषा का विकास करें
		CO4	हिंदी शब्दावली, राजभाषा विकास
		CO5	आत्म परिचय के बारे में जागरूकता। रिज्यूमे कैसे लिखें।

Semester -3

Course Code	Course Name	CO	Course Outcome
TEL-III	Language H/T/S - IIII (Telugu)	CO1	1. భాషాలక్షణాలను, భాషానిర్మాణాన్ని, పదం, పదాంశం వాక్య నిర్మాణం తెలుసుకుంటారు.
		CO2	2. కవి, సృజనాత్మక రచనలు, అలంకారికుల భావాలను గ్రహిస్తారు.
		CO3	3. అనువాదం, అనువాద పద్ధతులు, అనువాద నమస్యలు, పరిష్కారాలు తెలుసుకుంటారు.
		CO4	4. మాధ్యమాలు ఎలా ఆవిర్భవించాయి. పత్రికారంగ వికాసం తెలుసుకుంటారు.
		CO5	5. సామాజిక మాధ్యమాలు, సోషల్ మీడియా ప్రభావం వివిధరకాల మాధ్యమాలలో భాషాశైలి యాంకరింగ్ ఎలా చేయాలో నేర్చుకుంటారు.
HIN-III	Language H/T/S - III (Hindi)	CO1	प्राचीन और आधुनिक कवि, संदेशोन्मुखी बातें, भारत की महानता और श्रम की समस्याएं
		CO2	हिंदी साहित्य के महान, हिंदी साहित्य के अंग, देवी की पूजा
		CO3	भाषा बोलने के कौशल का विकास करना
		CO4	अन्य भाषाओं में हिंदी शब्दों के अर्थ को समझने के लिए
		CO5	दैनिक बोलचाल में भाषा का प्रयोग