SCHOOL OF SCIENCE

Name of the Degree Programme: Bachelor of Computer Applications

Programme Outcomes/ Programme Specific Outcomes

PO1- Disciplinary Knowledge

Acquiring knowledge on basics of Computer Science and ability to apply to design principles in the development of solutions for problems of varying complexity.

PO2-Communication and Interpersonal Skills

(i) Must have a reasonably good communication knowledge both in oral and writing

(ii) Establishing excellent skills in applying various design strategies for solving complex problems.

PO3- Critical thinking and Problem-solving capabilities

(i) Improved reasoning with strong mathematical ability to Identify, formulate and analyze problems related to computer science and exhibiting a sound knowledge on data structures and algorithms.

(ii) Ability to design and develop algorithmic solutions to real world problems and acquire a minimum knowledge on statistics and optimization problems.

PO4- Teamwork and respect for diversity

(i) To Function effectively as a member or leader of a team engaged in activities including practising existing projects and becoming independent to launch your own project by identifying a gap in solutions.

(ii) To develop an ability of working independently and pursue higher education and/or research in interdisciplinary and multidisciplinary areas.

PO5- Information and Communication Technology (ICT) digital fluency

(i) To enable the students to think independently and develop algorithms and computational skills for solving real word problems.

(ii) Identify, select and use a modern scientific and IT tool or technique for modeling, prediction, data analysis and solving problems in the area of Computer Science and making them mobile based application software.

PO6 -Self -directed Lifelong Learning

(i) Exhibiting strong skills required to program a computer for various issues and problems of day-to-day applications with thorough knowledge on programming languages of various levels.

(ii) Possessing a sound knowledge on computer application software and ability to design and develop app for applicative problems.

PO7 -Moral and Ethical Awareness/Reasoning

(i) Recognize professional responsibilities and make informed judgments in computing practice.

(ii) Exhibit an ability to identify unethical behaviour such as fabrication, falsification or misinterpretation of data and adopting objectives; unbiased and truthful actions in all aspects of life in general and their specialised subjects in particular.

PSO 1: Design and develop computer programs/computer -based systems in the areas related to AI, algorithms, networking, web design, cloud computing, IoT and data analytics.

PSO 2: Acquaint with the contemporary trends in industrial/research settings and thereby innovate novel solutions to existing problems.

PO-PSO- CO MAPPING

Cognitive Levels (Blooms taxonomy)

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

I SEMESTER

Name of the Course: Discrete Structures

Name of the Subject Matter Expert: Prof. Rashmi N.

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Understand the basic definitions of sets and its types, apply various operations on sets and represent them using Venn diagrams, discuss and differentiate the types of functions & relations.	PO3,PO4, PO6	U,Ap
CO2	Develop the relations in different forms, construct mathematical arguments using logical connectives and quantifiers.	PO3,PO4, PO6	U,An,C
CO3	Analyze the basics of counting, distinguish between permutations and combinations, Modeling with recurrence relations with examples of Fibonacci numbers and the tower of Hanoi problem, Summarize the types of relations and represent relations using matrices and digraphs.	PO3,PO4, PO6	Ap,An
CO4	Interpret different traversal methods for trees and graphs. Analyze problems using graphs and trees.	PO3,PO4, PO6	An,E
CO5	Define the definition of a matrix, order and its types, create a matrix and solve its determinant and inverse, analyze the applications of matrices to solve systems of linear equations.	PO3,PO4, PO6	R,An

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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I SEMESTER

Name of the Course: CA-C2T Problem solving Techniques (Theory)

Name of the Subject Matter Expert: Prof. Prof. Thejaswini Nyandala

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Illustrate the flowchart and design an algorithm for a given problem and to develop IC programs using operators, develop conditional and iterative statements to write C programs	PO1,PO2	R,U
CO2	Exercise user defined functions to solve real time problems, Exercise files concept to show input and output files in C	PO1,PO2, PO3	R,U,An, Ap
CO3	Inscribe C programs that use Pointers to access arrays, strings and functions	PO1,PO2	R,U
CO4	Exercise user defined data types including structures and unions to solve problems	PO1,PO2, PO3	R,U,Ap
CO5	Inscribe C programs using pointers and to allocate memory using dynamic memory management functions.	PO1,PO2	R,U

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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I SEMESTER

Name of the Course: Problem solving Techniques (Practicals)

Name of the Subject Matter Expert: Kalpana R

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Understand Basic Structure of C Programming , declaration and usage of variables and be able to write basic C programs.	PO1,PO6,PSO1	U,R
CO2	Write C Program using data types, variables and pointers	PO3,PSO1	R,U,Ap
CO3	Exercise Conditional and Iterative statements to write C programs	PO1,PO3PSO1	C,An
CO4	Write C programs using pointers to access arrays, strings and functions.	PO5,PSO1	C,Ap
CO5	Write C programs and allocate memory using dynamic memory management functions and user defined datatypes.	PO3,PO5,PSO1	C,An,E

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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I SEMESTER

Name of the Course: CA-C3T Data Structure (Theory)

Name of the Subject Matter Expert: Prof. Manoshankari

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Select appropriate data structures as applied to specified problem definition.	PO1	R,U
CO2	Implement operations like searching, insertion and deletion, traversing mechanism etc. on various data structures	PO1, PO3	R,U,A
CO3	Students will be able to implement Linear and Non-Linear data structures such as Trees, Hashing etc..	PO1,PO3, PO5	R,U
CO4	Learn and understand various important concepts of Sorting and Searching	PO1,PO3	R,U,A
CO5	Implement appropriate sorting/searching technique for given problem	PO1,PO2	R,U

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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I SEMESTER

Name of the Course: CA-C3T Data Structure (Practical)

Name of the Subject Matter Expert: Prof. Manoshankari

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Ability to solve problems implementing appropriate data structures using C language	PO1,PO2	R,U
CO2	Implement operations like searching, insertion and deletion, traversing mechanism etc. on various data structures using C	PO1, PO3	R,U,Ap
CO3	Ability to implement Linear and Non-Linear data structures using C such as Trees, Hashing etc..	PO1,PO3	R,U
CO4	Learn and understand various important concepts of Sorting and Searching techniques using C	PO1,PO2, PO3	R,U,An
CO5	Implement appropriate sorting/searching technique using relevant data structures in C language	PO1,PO2	R,U

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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I SEMESTER

Name of the Course: Event Management (Open Elective:)

Name of the Subject Matter Expert: Prof. Ashwini S

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Understand the process of organizing an event.	PO4	U
CO2	Understand the importance of a checklist in organizing an event.	PO2, PO4	U, R, An
CO3	Familiarize with organizing corporate events.	PO4, PO6	U, R
CO4	Obtain a sense of responsibility for the multidisciplinary nature of event management.	PO4, PO6	E
CO5	Learn to promote the events	PO6	E, C

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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I SEMESTER

Name of the Course: Generic English

Name of the Subject Matter Expert: Dr. Tharini Prabakaran

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Acquire the LSRW (Listening, Speaking, Reading, Writing) skills and Learn to appreciate literary art	PO2	R, U, AP
CO2	Obtain the knowledge of literary devices and genres and Acquire the skills of creativity to express one's experiences	PO6	R, U, AP
CO3	Know how to use digital learning tools and Be aware of their social responsibilities	PO5	R, U, An
CO4	Develop their ability as critical readers and writers and Increase their reading speed	PO3	R, U, E
CO5	Be able to give presentations and Increase their analytical skills.	PO2	R, U, C

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

P. Tharini
Subject Matter Expert

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KANNADA **SEMESTER I**

Name of the Course: GANAKA KANNADA-1
Name of the Subject Matter Expert: Dr. PRAKASHA (RANJERE)

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	ಕನ್ನಡ ಭಾಷೆಯ ಮಹತ್ವ , ಕನ್ನಡ ನಾಡಿನ ಭೌಗೋಳಿಕ ಸೌಂದರ್ಯ ಮತ್ತು ಹಿರಿಮೆಯನ್ನು ಸಾರುವ ಪಠ್ಯ ವಿಷಯವನ್ನು ಆಯ್ಕೆ ಮಾಡಲಾಗಿದೆ. ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ನಾಡು - ನುಡಿಯ ಬಗೆಗೆ ಉತ್ಕಟ ಅಭಿಮಾನವನ್ನು ಮೂಡಿಸುವ ಕನ್ನಡ ಭಾಷೆ, ಅಭಿಮಾನದ, ಉದ್ಯೋಗದ, ಅನ್ನದ ಭಾಷೆಯ ಮಹತ್ವ	PO3,PO4, PO6	U,Ap
CO2	ಆಧುನಿಕತೆಯ ಪ್ರಭಾವದಿಂದಾಗಿ ಉಂಟಾಗಿರುವ ಒಳಿತು-ಕೆಡುಕುಗಳ ಮುಖಾಮುಖಿಗೆ ಸಂಬಂಧಿಸಿದ ಪರ ಮತ್ತು ವಿರೋಧದ ಅಂಶಗಳಿರುವ ಪಠ್ಯಗಳಿವೆ. ಇವು ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಆಧುನಿಕತೆಯ ಆಗು - ಹೋಗುಗಳ ಬಗ್ಗೆ ತಿಳುವಳಿಕೆಯನ್ನು ಉಂಟು ಮಾಡುವಲ್ಲಿ ಸಹಕಾರಿಯಾಗುತ್ತವೆ.	PO3,PO4, PO6	U,An,C
CO3	ಕುಟುಂಬ ಎಂಬ ಭಾಗದಲ್ಲಿ "ಕುಟುಂಬದ' ಪರಿಕಲ್ಪನೆಯೊಳಗೆ ಸಮಾಜ, ಕುಟುಂಬದ ಪರಿಸರ, ಪ್ರಾಮುಖ್ಯತೆ, ತಾಳ್ಮೆ, ಪ್ರೀತಿ, ತ್ಯಾಗ, ಹೊಂದಾಣಿಕೆ ಇವೇ ಮೊದಲಾದ ಗುಣ ಮತ್ತು ಮೌಲ್ಯಗಳ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ಪಠ್ಯಗಳನ್ನು ಆಯ್ಕೆ ಮಾಡಲಾಗಿದೆ.	PO3,PO4, PO6	Ap,An
CO4	ಮೌಲ್ಯಾಧಾರಿತ ಹಾಗೂ ವ್ಯವಹಾರಿಕ ಬದುಕಿನ ಲೋಪ, ದೋಷ ಆಗು-ಹೋಗುಗಳ ಅರಿವನ್ನು ಉಂಟು ಮಾಡುವ ಲೇಖನಗಳಿವೆ. ಇವು ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ವ್ಯವಹಾರಿಕ, ಸಂವಹನ ಮತ್ತು ಸ್ವಸ್ಥ ಬದುಕಿನ ನಿಜ ಅರ್ಥವನ್ನು ತಿಳಿಸಿ ಕೊಡುತ್ತವೆ.	PO3,PO4, PO6	An,E
CO5	ನೀವು ಹೇಗೆ ನಡೆಸಿಕೊಳ್ಳಬೇಕೆಂದು ಬಯಸುತ್ತೀರೋ ಹಾಗೆಯೇ ದಯೆ ಮತ್ತು ಗೌರವದಿಂದ ವರ್ತಿಸಿ, ತರಗತಿಯಲ್ಲಿ ಪ್ರತಿಯೊಬ್ಬರಿಗೂ ಸ್ನೇಹಿತರಾಗಿರಿ ಮತ್ತು ನಿಮ್ಮ ಸ್ನೇಹವನ್ನು ಗಟ್ಟಿಯಾಗಿ ಇಟ್ಟುಕೊಳ್ಳಿ, ಶಿಕ್ಷಕರು ಹೇಳುವುದನ್ನು ಆಲಿಸಿ ಮತ್ತು ನಿರ್ದೇಶನಗಳನ್ನು ಎಚ್ಚರಿಕೆಯಿಂದ ಅನುಸರಿಸಿ.ನೀವು ಹೇಗೆ ನಡೆಸಿಕೊಳ್ಳಬೇಕೆಂದು ಬಯಸುತ್ತೀರೋ ಹಾಗೆಯೇ ದಯೆ ಮತ್ತು ಗೌರವದಿಂದ ವರ್ತಿಸಿ, ತರಗತಿಯಲ್ಲಿ ಪ್ರತಿಯೊಬ್ಬರಿಗೂ ಸ್ನೇಹಿತರಾಗಿರಿ ಮತ್ತು ನಿಮ್ಮ ಸ್ನೇಹವನ್ನು ಗಟ್ಟಿಯಾಗಿ ಇಟ್ಟುಕೊಳ್ಳಿ, ಶಿಕ್ಷಕರು ಹೇಳುವುದನ್ನು ಆಲಿಸಿ ಮತ್ತು ನಿರ್ದೇಶನಗಳನ್ನು ಎಚ್ಚರಿಕೆಯಿಂದ ಅನುಸರಿಸಿ.	PO3,PO4, PO6	R,An

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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SEMESTER I

Name of the Course: Hindi

Name of the Subject Matter Expert: Dr.Reva Prasad

CO	*Course Outcome* *The learner will be able to*	*PO AND PSOs Addressed*	*Cognitive Level*
CO1	Students will be familiar with different genres of hindi prose.	PO 1, 2, 3, 6, 7	R, U, Ap,
CO2	The study of prose will generate interest in creative writing.	PO 2,3,6	Ap, C
CO3	Students will develop their language skills.	PO 1,2,6	U, Ap
CO4	Students can gain Reading, writing, Oratory skills.	PO 2,6	U, Ap
CO5	Students can acquire the knowledge of Hindi grammar and utilize it in day-to-day life.	PO 1,2,6	R, U, Ap

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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I SEMESTER

Name of the Programme: Environmental Studies (AECC)
Subject matter experts: Dr. Nebula Murukesh

CO	Course Outcome *The learner will be able to*	PSOs Addressed	Cognitive Level
CO1	Bring about an awareness of a variety of environmental concerns.	PO4	R,U
CO2	Understand the concepts of ecosystem, natural resources, biodiversity as well as to discuss the factors impacting biodiversity loss and ecosystem degradation.	PO6, PO7	U, Ap
CO3	Develop an understanding of pollution and sensitize to adverse health impacts of pollution.	PO6, PO7	U. An
CO4	Learn about major international institutions and programmes and the role played by them in the protection and preservation of the environment.	PO6, PO7	R,U
CO5	Create a pro-environmental attitude and a behavioral pattern in society that is based on creating sustainable lifestyles.	PO7	E, C

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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SEMESTER III

Name of the Course: Python Programming (Theory)

Name of the Subject Matter Expert: Prof. Prof. Sailaja M.

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Integrate basic programing with python syntax in writing programs.	PO1,PSO1	U, E,AP
CO2	Understanding and applying various data structures based on their usage. Applying control structures.	PO1,PO3	U,AP
CO3	To give a broad view of the concept of Object-Oriented Programming (OOP) applied in Python.	PO1,PO3	U,AP
CO4	Understanding various types of files in python, creating classes downloading CSV files for analysis.	PO1,PSO1	U, E,AP
CO5	Creating different types of graphs for Data visualisation using Python libraries.	PO1,PSO1	U, E,AP

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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SEMESTER III

Name of the Course: Python Programming (Practical)

Name of the Subject Matter Expert: Prof. Prof. Sailaja M.

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Integrate basic programing with python syntax in writing programs.	PO1,PSO1	U, E,AP
CO2	Understanding and applying various data structures based on their usage. Applying control structures.	PO1,PO3	U,AP
CO3	To give a broad view of the concept of Object-Oriented Programming (OOP) applied in Python.	PO1,PO3	U,AP
CO4	Understanding various types of files in python, creating classes downloading CSV files for analysis.	PO1,PSO1	U, E,AP
CO5	Creating different types of graphs for Data visualisation using Python libraries.	PO1,PSO1	U, E,AP

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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SEMESTER III

Name of the Course: Operating System

Name of the Subject Matter Expert: Prof. Annie Christila

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Understand the concept of Process Management and Inter Process communication Component of an Operating System	PO1 & PO3	R, U, An
CO2	Solve scheduling and synchronization problems pertaining to processes and threads	PO3 & PSO1	U, An & Ap
CO3	Comprehend the primary memory control and interaction of an operating system.	PO3, PSO1 & PO7	U, An, Ap
CO4	Elaborate the understanding of an operating system by giving emphasis on the file systems and Hard Disk Management.	PO3, PSO1 & PO7	U, An, Ap
CO5	Realize the importance and the implementation of protection mechanism used by an operating system and Learn the concepts of operating system through experimental practice using Linux operating system	PSO1 & PSO2	An, Ap & C

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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SEMESTER III

Name of the Course: Networking (Theory)

Name of the Subject Matter Expert: Prof. Saranya C

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Describe the growth of computer networks and types of communication and understanding modern hardware used in data circuits.	PO1,PSO1	U,AP
CO2	Recognise the structure of Data Communications System and the concepts of Network models (OSI and the TCP - IP Reference models), their functions of OSI Layers and different Protocols used in these Models.	PO1,PO3	U, E,AP
CO3	Apply the Design of Data Link protocols, Network layer services, performance and its protocols, Packet switching, Unicast Routing, Routing Algorithms.	PO1,PO3	U, E,AP
CO4	Describe the growth of the Transport layer, its protocols, TCP services, features, Connection, Segment, TCP Congestion Control, Flow control, Error Control.	PO1,PSO1	U,AP
CO5	Explain the different protocols used at application layer i.e. HTTP, SNMP, SMTP, FTP, TELNET and VPN.	PO1,PSO1	U, E,AP

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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SEMESTER III

Name of the Course: Networking (Practical)

Name of the Subject Matter Expert: Prof. Saranya C

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Describe the growth of computer networks and types of communication and understanding modern hardware used in data circuits.	PO1,PSO1	U,AP
CO2	Recognise the structure of Data Communications System and the concepts of Network models (OSI and the TCP - IP Reference models), their functions of OSI Layers and different Protocols used in these Models.	PO1,PO3	U, E,AP
CO3	Apply the Design of Data Link protocols, Network layer services, performance and its protocols, Packet switching, Unicast Routing, Routing Algorithms.	PO1,PO3	U, E,AP
CO4	Describe the growth of the Transport layer, its protocols, TCP services, features, Connection, Segment, TCP Congestion Control, Flow control, Error Control.	PO1,PSO1	U,AP
CO5	Explain the different protocols used at application layer i.e. HTTP, SNMP, SMTP, FTP, TELNET and VPN.	PO1,PSO1	U, E,AP

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

C. Saranya 8/1/24
Subject Matter Expert

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SEMESTER III

Name of the Course: Sociology Of Tourism Management (**OPEN ELECTIVE)**

Name of the Subject Matter Expert: Dr. Kanchana G.

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Grasp key sociology, culture, and tourism concepts, exploring links between tourism, leisure, and recreation.	PO4, PO6	R, U
CO2	Differentiate tourism types (cultural, heritage, religious, etc.) and analyze their characteristics.	PO6	R, U
CO3	Examine mutual impacts of tourism on locals, hosts, and guests, emphasizing development, motivation, and tourist roles.	PO6, PO7	U, An
CO4	Evaluate diverse impacts on host places (social, economic, climate) and explore sustainable tourism strategies.	PO6, PO7	An, E
CO5	Analyze tourism demand, understand consumer behavior, and explore intermediary roles in the industry.	**PO3**	**An, Ap**

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

Subject Matter Expert

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SEMESTER III

Name of the Programme: Generic English

Subject matter experts: Anusha C V

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Acquire the LSRW (Listening, Speaking, Reading, Writing) skills	PO1, PO2	U, A, C
CO2	Analyze and interpret a wide range of literary texts, including poetry, prose and drama.	PO3 PO6,	R, U, Ap, An
CO3	Develop critical thinking and analytical skills to evaluate literary works.	PO1, PO3	U, A, C
CO4	Apply research and critical writing skills to explore contemporary issues related to English Literature.	PO3, PO7	R, U, Ap, An
CO5	Develop a passion for reading and a lifelong appreciation for the richness of English.	PO2, PO5	U, A, C

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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SEMESTER III

Name of the Course: Kannada

Name of the Subject Matter Expert: Kittappa R.

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	ದೈನಂದಿನ ಈ ಸಹಜ ಲಯದಲ್ಲಿ, ಆಗೊಮ್ಮೆ ಈಗೊಮ್ಮೆ ನಗೆಯ ಬುಗ್ಗೆಗಳು, ಕಣ್ಣೀರ ಕಡಲುಗಳೂ ಎದುರಾಗುವುದುಂಟು. ಅವುಗಳನ್ನು ಸವಿಯಲು, ಸಂಕಷ್ಟಗಳನ್ನು ದಾಟಲು ಹಾಯಿದೋಣಿಗಳಂತೆ ಸ್ನೇಹ, ಪ್ರೀತಿ, ವಿಶ್ವಾಸಗಳು ಒದಗಿಬರುತ್ತವೆ. ನೆಂಟರು ಇಷ್ಟರೊಂದಿಗಿನ ಒಡನಾಟ, ಹಬ್ಬ ಹುಣಿಮೆಗಳು, ಜಾತಿ ಪರಿಷೆಗಳು, ಶುಭ ಶೋಭನಗಳು ಬದುಕಿಗೊಂದು ಅರ್ಥವನ್ನು ಬಣ್ಣವನ್ನೂ ತುಂಬಿ, ನಮ್ಮನ್ನು ಜೀವನ್ಮುಖಿಗಳಾಗುವಂತೆ ಮಾಡುತ್ತವೆ. ಪ್ರಸ್ತುತ ಪದ್ಯಭಾಗಗಳು ಇಂತಹ ದೈನಂದಿನ ಬದುಕಿನ ಹಲವು ವೈವಿಧ್ಯಲಯ ವಿನ್ಯಾಸವನ್ನು ವಂಚಯ ಮಾಡಿಕೊಡುವ ಉದ್ದೇಶವನ್ನು ಹೊಂದಿವೆ.	PO7, PO1	U, Ap, An
CO2	ಬಹುತ್ವವು ಪ್ರಕೃತಿಯ ನಿಯಮ ಭಗೋಳಿಕ, ಭಾಷೆ, ಜನಾಂಗ, ರುಚಿ, ಸಾಹಿತ್ಯ ಮತ್ತು ಸಂಸ್ಕೃತಿಗಳಲ್ಲಿ ವೈವಿದ್ಯತೆ ಇರುತ್ತದೆ ಮತಧರ್ಮಗಳಿಗೆ ಅತೀತವಾದ ಸಾಮರಸ ಮತ್ತು ಸೌಹಾರ್ದತೆ ನಮ್ಮ ದೇಶದ ಮಣ್ಣಿನ ಸಹಜ ಗುಣ, ಈ ಮಣ್ಣಿನಲ್ಲಿ ಹುಟ್ಟಿದ ನಾವು ಮಾನವೀಯ ಮೌಲ್ಯಗಳನ್ನು ಅನುಸರಿಸಿ ಬಾಳಬೇಕು ಕೂಡಿ ಬಾಳಿದರೇ ಆದ ಸರ್ಗ ಎಂಬುದನ್ನು ಪ್ರತಿಪಾದಿಸುವ ಪಠ್ಯಕ್ರಮವನ್ನು ಇಲ್ಲಿ ಅಳವಡಿಸಿಕೊಳ್ಳಲು ಉದ್ದೇಶಿಸಲಾಗಿದೆ.	PO7	U, An, Ev
CO3	ಭಾರತವನ್ನು ಮುಕ್ತಗೊಳಿಸಲು ನಡೆಸಿದ ಹೋರಾಟವನ್ನು ಸ್ವಾತಂತ್ರ ಸಂಗ್ರಾಮ ಹೆಸರಿನಿಂದ ಕರೆಯುತ್ತವೆ, ಇದ ಉದ್ದೇಶದಿಂದ ಕನ್ನಡ ಕಾವ್ಯಗಳಲ್ಲಿ ಭರತ ಬಾಹುಬಲಿಯ ಯುದ್ಧ ಪುಸಂಗ ಶರಣರ ಸಮಾನತೆಯ ಸ್ವಾತಂತ್ರ್ಯ ಮುಂತಾದ ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಚಳುವಳಿಯ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ಪಠ್ಯಕ್ರಮವನ್ನು ಅಳವಡಿಸಿಕೊಳ್ಳುವುದು ಮತ್ತು ಸ್ವಾತಂತ್ರ್ಯದ ಆಶೋತ್ತರಗಳನ್ನು ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಮನವರಿಕೆ ಮಾಡಿಕೊಡುವುದು, ಸ್ವಾತಂತ್ರದ ಅರ್ಥ. ಅಗತ್ಯ ಮತ್ತು ಅಭಾವಗಳ ಕಡೆ ವಿದ್ಯಾರ್ಥಿಗಳ ಗಮನ ಸೆಳೆಯುವುದು ಈ ಘಟಕದ ಉದ್ದೇಶವಾಗಿದೆ.	PO7, PO1	C, U, Ap
CO4	ಪ್ರೋಗ್ರಾಮ್, ವಿಶಿಷ್ಟ, ಮತ್ತು ಆಯಾ ಅಧ್ಯಯನ ಶಿಸ್ತು ವಿಶಿಷ್ಟ ವಿಷಯಗಳನ್ನು ಇಲ್ಲಿ ಅಳವಡಿಸಲು ಉದ್ದೇಶಿಸಲಾಗಿದೆ ಸಾಹಿತ್ಯ ಮತ್ತು ಇತರ ಶಿಸ್ತುಗಳ ಸಂಬಂಧದ ಅರಿವು ನೀಡುವುದು, ಆಯಾ ಪದವಿ ವಿಶಿಷ ಶಿಸ್ತುವಿಶಿಷ್ಟ, ಜ್ಞಾನವನ್ನು ನೀಡುವುದು, ಆಡಳಿತ ಕನ್ನಡ, ವ್ಯವಹಾರ ಕನ್ನಡ, ಸಂವಹನ ಕೌಶಲ, ವ್ಯಕ್ತಿತ್ವ ವಿಕಸನ ಕುರಿತ ಪಠ್ಯ ಗಳನ್ನು ಅಳವಡಿಸುವುದು ಮತ್ತು ಆ ಮೂಲಕ ಭಾಷಾ ಕೌಶಲಗಳ ಜೊತೆಗೆ ಶಿಸ್ತು ವಿಶಿಷ್ಟ ಜ್ಞಾನ ರಚನೆಯ ಕೌಶಲಗಳನ್ನು ಒದಗಿಸುವುದು ಇಲ್ಲಿನ ಉದ್ದೇಶವಾಗಿದೆ	PO7, PO1	U, An
CO5	ಈ ಭಾಗದಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳು ವ್ಯಾಕರಣಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ಪಾರಿಭಾಷೆಕ ಪದಗಳ ಪರಿಚಯ, ವಿಶೇಷ ಪದಗಳ ಅರ್ಥ ಗ್ರಹಿಕೆ, ವಾಕ್ಯ ಜೋಡಣೆ ಭಾಷಾಂತರ/ಅನುವಾದ ಕಲಿಕೆ ಮುಂತಾದ ಕೌಶಲ್ಯಗಳನ್ನು ಬೆಳೆಸಿಕೊಳ್ಳುವುದರ ಜೊತೆಗೆ ಪತ್ರಲೇಖನ, ವರದಿ ತಯಾರಿಕೆ, ಅಭ್ಯರ್ಥನ ಪತ್ರ, ಮಾಹಿತಿ ಹಕ್ಕು ಅಧಿನಿಯಮಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ಅರ್ಜಿ ಬರೆಯುವ ಕೌಶಲ್ಯಗಳನ್ನು ಅರ್ಥೈಸಿಕೊಳ್ಳುತ್ತಾನೆ.	PO7	Ap, U

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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SEMESTER III

Name of the Course: Hindi

Name of the Subject Matter Expert: Dr. Reva Prasad

CO	Course Outcomes *The learner will be able to*	PO-PSOs Addressed	Cognitive Level
CO1	Students will get knowledge of drama literature and develop their language skills.	PO 1, PO2	R,U.Ap
CO2	Students can acquire the knowledge of Hindi grammar and utilize it in day-to-day life.	PO1,2,6	R,U,Ap
CO3	Students can gain Reading, Writing and Oratory skills.	PO 2,6	R,U,Ap
CO4	Students understand the themes, plot and characterization of the drama- Ek aur Dronacharya.	PO1,2,3	AP, An, E
CO5	Students learn about human values and emotions like empathy, honesty, truthfulness and humanity etc.	PO 3,6,7	AP, An, E

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C – Create

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III SEMESTER

Name of the Course: India and Indian Constitution (AECC)

Subject matter experts: Prof. Sampath Kumar

CO	Course Outcomes *The learner will be able to*	PO-PSOs Addressed	Cognitive Level
CO1	Explain the philosophy and structure of Constitution	PO4, PO7	U
CO2	Contextualise the depth of India as a nation with its diverse socio-political culture and philosophical values	PO4, PO6	U, AN
CO3	Give the knowledge to expand the breadth of freedom struggle and its significance in nation building	PO4, PO6	An, E
CO4	Measure the powers, functions and limitations of various offices under the constitution.	PO4, PO6	Ap,
CO5	Demonstrate the values, ideals and the role constitution in India	PO4, PO6	An, E

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SEMESTER V

Name of the Course: Artificial Intelligence

Name of the Subject Matter Expert: Prof. Thejaswini Nyandala

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Understand the various characteristics of problem solving agents and apply problem solving through search for AI applications.	PO1,PO2, PO3	R,U
CO2	Appreciate the concepts of knowledge representation using Propositional logic and Predicate calculus and apply them for inference/reasoning.	PO1,PO2	R,U,AP
CO3	Obtain insights about Planning and handling uncertainty through probabilistic reasoning and fuzzy systems.	PO1,PO2, PO3	R,U
CO4	Understand basics of computer vision and Natural Language Processing and understand their relevance in AI applications.	PO1	R,U
CO5	Obtain insights about machine learning, neural networks, deep learning networks and their significance.	PO1,PO2	R,U

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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SEMESTER V

Name of the Course: Data Analytics (Theory)

Name of the Subject Matter Expert: Dr. S. Sivagami

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Explore the fundamental concepts of data analytic	PO3, PO4	R and U
CO2	Recognize and conduct statistical inference to solve engineering problems.	PO4, PO5	An
CO3	Appreciate the science of statistics and the scope of its potential applications	PO5, PO6	Ap & An
CO4	Summarize and present data in meaningful ways	PO5, PSO1	An & C
CO5	Select the appropriate statistical analysis depending on the research question at hand	PO5, PSO1	C & E

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SEMESTER V

Name of the Course: Data Analytics (Practical)

Name of the Subject Matter Expert: Dr. S. Sivagami

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Understanding basic excel commands	PO1, PO2	R and U
CO2	Create dashboard in Excel	PO4, PO5	An
CO3	Create Python Programming for data analytics	PO5, PO6	Ap & An
CO4	Create Report using Power BI	PO5, PSO1	An & C
CO5	Create Dashboard using Power BI	PO5, PSO1	C & E

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SEMESTER V

Name of the Course: Data Mining

Name of the Subject Matter Expert: Prof. Sailaja M

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Understanding basic Data Mining Tasks, KDD	PO1, PO3,PSO1	R,U
CO2	Understand and implement classical models and algorithms in data mining.	PO5, PO6	Ap, An
CO3	Characterize the kinds of patterns that can be discovered by association rule mining, classification and clustering.	PO5, PO6	An , C
CO4	Master data mining techniques in various applications like social, scientific environmental context and ASSOCIATION RULES	PO3, PO4	R, U
CO5	Develop skill in selecting the appropriate data mining algorithm for solving practical problems.	PO ,PSO2	Ap

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SEMESTER V

Name of the Course: Web programming (Theory)

Name of the Subject Matter Expert: Prof. Ashtalakshmi

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Understand the various characteristics of problem solving agents and apply problem solving through search for AI applications.	PO1,PO2, PO3	R,U
CO2	Understand and implement classical models and algorithms in data mining.	PO5 ,PO6,PSO 1	Ap & An
CO3	Recognise the variety of techniques and their range of potential applications.	PO3 & PO4	A & C
CO4	Discover how to use Web programming in a variety of applications.	PO5 & PO6	E & C
CO5	Find out how to choose the best web programming to solve real-world challenges.	PO6,PO7 & PSO2	C & E

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SEMESTER V

Name of the Course: Web programming (Practical)

Name of the Subject Matter Expert: Prof. Ashtalakshmi

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Understand the various characteristics of problem solving agents and apply problem solving through search for AI applications.	PO1,PO2,PO3	R,U
CO2	Understand and implement classical models and algorithms in data mining.	PO5 ,PO6,PSO1	Ap & An
CO3	Recognise the variety of techniques and their range of potential applications.	PO3, PO4	A & C
CO4	Discover how to use Web programming in a variety of applications.	PO5, PO6	E , C
CO5	Find out how to choose the best web programming to solve real-world challenges.	PO6,PO7 , PSO2	C , E

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SEMESTER V

Name of the Course: Quantitative Techniques

Name of the Subject Matter Expert: Roshini Anne Koshy

CO	Course Outcome The learner will be able to	PO-PSO addressed	Cognitive Level
CO1	Recall and apply basic mathematical operations and formulas to solve quantitative aptitude-based questions. Analyze the Problems logically and implement varied approaches in its solving. Prove competencies in coding and decoding of letters, symbols, and numbers	PO2 & PO3	R, U, An, Ap, E
CO2	Develop analytical and logical reasoning skills for data interpretation. Formulate and apply the concepts of logical and analytical reasoning skills to compete in various competitive exams	PO2 & PO3	U, An, Ap, E
CO3	Apply and evaluate the concepts of profit and loss, ratio and proportion, simple and compound interest, stocks and shares and discounts in real life scenarios. Evaluate and distinguish deductive and inductive reasoning	PO2 & PO3	Ap, E, C
CO4	Analyze and solve problems based on time and work, time and distance, ages, calendar, clock, train, boats and streams etc. Summarize, interpret, and present quantitative data in mathematical forms, such as graphs, charts, Venn diagrams and draw inferences from them.	PO2 & PO3	U, An, E, C
CO5	Understand and explain the concepts related to teaching and developing research aptitude. Analyze and recall the facts in reading comprehension.	PO2 & PO3	U, R, An

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

Subject Matter Expert

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V SEMESTER

Name of the Course: SEC III- Cyber Crime, Cyber Law and Intellectual Property Rights

Name of the Subject Matter Expert: Dr. S. Sivagami

CO	Course Outcomes *The learner will be able to*	PO-PSOs Addressed	Cognitive Level
CO1	Understand cyber crimes, their nature, legal remedies.	PO1,PO2	U,R
CO2	Understand how to report the crimes through available platforms and procedures.	PO1,PO2,	U,R
CO3	Recognize various privacy and security concerns on Social media and e-commerce platforms.	PO3	U,R
CO4	Use basic tools and technologies to protect their devices.	PO4,PSO1	U,R,E,An
CO5	Understand digital environment and IPR issues	PO1,PO2	U,R

R- Remember; U- Understand; Ap- Apply; An – Analyse; E- Evaluate; C– Create

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BCA 2 Sem
DEPARTMENT OF COMPUTER APPLICATION
PO-PSO MAPPING – NEP SYLLABUS
Graduate Attribute/Program Outcome (PO)

PO1- Disciplinary Knowledge

PO2-Communication and Interpersonal Skills

PO3- Critical thinking and Problem-solving capabilities

PO4- Team work and respect for diversity

PO5- Information and Communication Technology (ICT) digital fluency

PO6 -Self -directed Lifelong Learning

PO7 -Moral and Ethical Awareness/Reasoning

Program Outcomes: BCA (3 Years) Degree

PSO	Programme Specific Outcomes	PO mapping	
1	Acquiring and Exhibiting knowledge of Computer Science and latest technologies. Strong skills required to program and ability to apply and find solutions for problems of varying complexity.	PO1 PO3	
2	Improved reasoning with strong mathematical ability to Identify, formulate and analyze problems related to computer science to design and develop algorithmic solutions to real world problems and acquiring a	PO3 PO5	

	minimum knowledge on statistics and optimization problems.		
3	Possessing a sound knowledge on computer application software and ability to design and develop app for applicative problems. Practicing existing projects and becoming independent to launch own project by identifying a gap in solutions.	PO4, PO3	
4	Exhibiting professional ethics to maintain the integrality in a working environment. Inspiration to continue advanced studies in Computer Science, be independent learner.	PO7,PO6	
5	Establishing excellent skills in applying various design strategies for solving complex problems. Identify, select and use a modern scientific and IT tool or technique for modeling, prediction, data analysis and solving problems in the area of Computer Science and making them mobile based application software	PO1,PO5	
6	Enhancing literary sensibility and Language skills	PO2	
7	Integration of multidisciplinary knowledge across the program. With exposure to interdisciplinary thought, to develop more advanced epistemological beliefs, enhanced critical thinking ability and metacognitive skills, and an understanding of the relations among perspectives derived from different disciplines.	PO1,PO2	

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PSO- CO MAPPING – NEP SYLLABUS

Cognitive Levels (Blooms taxonomy)

R- Remember; **U-** Understand; **Ap-** Apply; **An** – Analyse; **E-** Evaluate; **C**– Create

Course Outcome (CO)

Name of the Course: CA-CT Computer Architecture

Name of the Subject Matter Expert: Prof.Indu

CO	*Course Outcome* *The learner will be able to*	*POs Addressed*	*Cognitive Level*
CO1	Basic number system and arithmetic operations on the number system, and also the usage of combinational and sequential circuits along with Simplifying Boolean expressions using K-Map	PSO – 3,4	U,E
CO2	Basic computer organization and design. Computer instructions, time and memory management, central processing unit. Along with SISC and RISC.	PSO -1 , 3,4	U,Ap, E
CO4	register transfer and micro operations, micro programmed control, input output, and instruction level parallelism.Memory System,Micro System and Thread Parallelism	PSO -1,3,4	U,Ap,An

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Course Outcome (CO)

Name of the Course: CA-C2T JAva

Name of the Subject Matter Expert: Prof. Veena

CO	*Course Outcome* *The learner will be able to*	POs Addressed	Cognitive Level
CO1	To understand the basic concepts and fundamentals of platform independent object oriented language. To understand the basic concepts and fundamentals of platform independent object oriented language. Demonstrate the behavior of programs involving the basic programming constructs like control structures, constructors, string handling and garbage collection.	PSO-1,3,	U,An,A,E
CO2	Understand core concepts of Java like inheritance and polymorphism Learn how to achieve code reusability using inheritance and polymorphism concepts Event handling in Java To develop skills in internet programming using applets and swings Understand how to design GUI components with the Java Swing API.	PSO-1,3,7	U,An,Ap, E
CO3	Demonstrate skills in writing programs using exception handling techniques and multithreading Learn Java generics and how to use the Java Collections API.	PSO-1,3,5	R,U,Ap,E

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Course Outcome (CO)

Name of the Course: CA-C8T DBMS

Name of the Subject Matter Expert: Prof. Saranya C

CO	Course Outcome *The learner will be able to*	POs Addressed	Cognitive Level
CO1	Basic concepts and the applications of database systems.to have broad understanding of the three level architecture of DBMS. Database System Environment, Classification of Database Management Systems.	PSO – 1,3,4	U,E,Ap
CO2	Identify the basic concepts and various data models used in database design. Design ER-models to represent simple database application scenarios. Explain the basic concepts of relational data model	PSO -1 , 3	U,An,Ap, E
CO3	Apply relational database theory. To be able to describe relational algebra expression, tuple and domain relational expression for queries. Recognize and identify the use of normalization and functional dependency. To formulate SQL queries on data using basic DDL, DML and DCL commands.Transaction Processing, Properties, Concurrency control, Recovery	PSO -1,3,4	U Ap,An,Cr

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Course Outcome (CO)

Name of the Course: OE1: Open Elective

Name of the Subject Matter Expert: Prof. Haritha

CO	Course Outcome *The learner will be able to*	PSOs Addressed	Cognitive Level
CO 1	Understand the overview of Retail business,evolution,scope of business Retailer: characteristics and functions To learn about the Retail organization and functional management	**PO1 PO2, PO4,PO6 PO7**	R,U,A,E,C
CO 2	To understand the retail marketing mix and strategies new product launch, life cycle in retailing, factors influencing the location of stores, customer shopping behavior.	**PO1 PO2, PO4,PO6 PO7**	R,U,A,AN,E, C
CO 3	To learn about the recent trends and career opportunities- critical analysis of E-Tailing strategies, types of marketing and campaigns.	**PO1 PO2, PO4,PO6 PO7**	R,U,A,AN,E, C

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Permanently Affiliated to Bangalore University || AICTE Approved Electronic City, Bengaluru - 100
Reaccredited by NAAC with 'B++' Grade || Recognised under section 2(f) & 12(b) of the UGC Act || An ISO 9001: 2015 Certified Institution
A FRANSALIAN INSTITUTE OF HIGHER LEARNING

BCA 4 Sem
DEPARTMENT OF COMPUTER APPLICATION
PO-PSO MAPPING – NEP SYLLABUS
Graduate Attribute/Program Outcome (PO)

PO1- Disciplinary Knowledge

PO2-Communication and Interpersonal Skills

PO3- Critical thinking and Problem-solving capabilities

PO4- Teamwork and respect for diversity

PO5- Information and Communication Technology (ICT) digital fluency

PO6 -Self -directed Lifelong Learning

PO7 -Moral and Ethical Awareness/Reasoning

Program Outcomes: BCA 4 Sem (3 Years) Degree

PSO	Programme Specific Outcomes	PO mapping
1.	Acquiring and Exhibiting knowledge of Computer Science and latest technologies. Strong skills required to program and ability to apply and find solutions for problems of varying complexity.	PO1 PO3
2.	Improved reasoning with strong mathematical ability to Identify, formulate and analyze problems related to computer science to design and develop algorithmic solutions to real world problems and acquiring a minimum knowledge on statistics and optimization problems.	PO3 PO5

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3.	Possessing a sound knowledge on computer application software and ability to design and develop apps for applicative problems. Practicing existing projects and becoming independent to launch own projects by identifying a gap in solutions.	PO4,PO3
4.	Exhibiting professional ethics to maintain the integrality in a working environment. Inspiration to continue advanced studies in Computer Science, be **an independent** learner.	PO7,PO6
5.	Establishing excellent skills in applying various design strategies for solving complex problems.Identify, select and use a modern scientific and IT tool or technique for modeling, prediction, data analysis and solving problems in the area of Computer Science and making them mobile based application software	PO1,PO5
6.	Enhancing literary sensibility and Language skills	PO2
7.	Integration of multidisciplinary knowledge across the program. With exposure to interdisciplinary thought, to develop more advanced epistemological beliefs, enhanced critical thinking ability and metacognitive skills, and an understanding of the relations among perspectives derived from different disciplines.	PO1,PO2

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PSO- CO MAPPING – NEP SYLLABUS

Cognitive Levels (Bloom's taxonomy)

R- Remember; **U-** Understand; **Ap-** Apply; **An** – Analyze; **E-** Evaluate; **C**– Create

Course Outcome (CO)

Name of the Course: Software Engineering -CA- C16T

Name of the Subject Matter Expert: Prof.Indu

CO	*Course Outcome* *The learner will be able to*	*POs Addressed*	*Cognitive Level*
CO1	Understand the concept of software products and different processing models, along with the requirement and change of requirement management and system engineering process along with the new world methodology -Agile methodology	PSO – 3,4	U,E
CO2	Understand software prototyping and techniques. Study of software design and designing strategies and architecture.Object oriented and function oriented design. Dataflow design and detailed design, understanding the design principles and user system interface.	PSO -1 , 3,4	U,Ap, E
CO3	Study of software reliability and reusability. And object oriented and detailed design.Software specification and validation techniques, project management, quality management, cost estimation and software maintenance. Risk Management	PSO- 1,3,4	U,Ap,An

Subject Matter Expert

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Course Outcome (CO)

Name of the Course:Internet Technologies CA-C18T

Name of the Subject Matter Expert: Prof.K Ashtalakshmi

CO	*Course Outcome* *The learner will be able to*	POs Addressed	Cognitive Level
CO1	To Understand basic concepts of internet, servers, internet s security and also basic concepts of HTML and XHTML.And also introducing CSS levels of style sheets And formats properties and Text properties.	PSO 3,4	U,Ap,E
CO2	To understand Overview of JavaScript, syntax characteristic, operations and expressions, control statements object creation, Modification; Arrays, Constructors and error handling concepts.To understand JavaScript Execution environment, document Object model, event access, handling events and the navigator objects.	PSO 1,3,4	U,An,E
CO3	Introduction to Dynamic documents, positioning elements, staking, mouse movements, namespace XML schemas displaying XML documents, documents with CSS; XSLT style sheets web servers	PSO 1,3,4	U,Ap,E

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Course Outcome (CO)

Name of the Course: CA-C17T The Analysis and Design of Algorithms

Name of the Subject Matter Expert: Prof. Sailaja

CO	Course Outcome *The learner will be able to*	POs Addressed	Cognitive Level
CO1	Algorithms, Fundamentals of Algorithmic Problem Solving. Important Problem Types, Fundamental Data Structures. Fundamentals of the Analysis of Algorithm Efficiency: The Analysis Framework, Asymptotic Notations and Basic Efficiency Classes, Mathematical Analysis of Non-recursive and Recursive Algorithms, Empirical Analysis of Algorithms.Brute Force Method: Selection Sort and Bubble Sort, Sequential Search, Brute-Force String Matching Exhaustive Search, Depth-First Search and Breadth-First Search.	PSO – 3,4	U,E
CO2	Decrease and Conquer: Insertion Sort, Topological Sorting, Algorithms for Generating Combinatorial Objects, Decrease-by-a-Constant-Factor Algorithms. Divide and Conquer: Merge Sort, Quick Sort, Binary Tree Traversals and Related Properties, Strassen's Matrix Multiplication Space and Time Trade offs: Sorting by Counting, Input Enhancement in String Matching, Hashing. Dynamic programming Binomial Coefficient, Principle of Optimality, Optimal Binary Search Trees, Knapsack Problem and Memory Functions, Warshall's and Floyd's Algorithms. Greedy Technique: Prim's Algorithm, Kruskal's Algorithm, Dijkstra's Algorithm, Huffman Trees	PSO -1 , 3,4	U,Ap, E
CO3	Limitations of Algorithm Power Lower-Bound Arguments, Decision Trees, P, NP and NP Complete Problems Coping with the Limitations of Algorithm Power: Back Tracking: n Queens problem, Hamiltonian Circuit Problem, Subset-Sum Problem Branch-and-Bound: Assignment Problem, Knapsack Problem, Traveling Salesman Problem.	SO- 1,3,4	U,Ap,An

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Course Outcome (CO)

Name of the Course: OE1: Open Elective(Business Leadership Skills)

Name of the Subject Matter Expert: Prof.Kalpana

CO	Course Outcome *The learner will be able to*	PSOs Addressed	Cognitive Level
CO 1	To understand the significance of leadership skills for effective people management. To increase the comprehension of leadership through various leadership theories.	PSO-4,7	U,E
CO 2	To analyze different leadership styles, types, patterns and functions. To demonstrate an understanding of various leadership approaches for effective management of people. To demonstrate an awareness of ethical leadership.	PSO-4	U,R
CO 3	To demonstrate an awareness of ethical leadership and also to improve the communication skills.	PSO-6	U,R,Ap

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