JAYARAJ ANNAPACKIAM COLLEGE FOR WOMEN (AUTONOMOUS)

A Unit of the Sisters of St. Anne of Tiruchirappalli

Accredited with 'A' Grade (3rd Cycle) by NAAC

DST FIST Supported College

Affiliated to Mother Teresa Women's University, Kodaikanal

PERIYAKULAM – 625 601, THENI DT. TAMIL NADU.

ACADEMIC COUNCIL

DEPARTMENT OF COMPUTER SCIENCE

09.09.2020

PG DEPARTMENT OF COMPUTER SCIENCE

B.Sc. COMPUTER SCIENCE SYLLABUS

As per the guidelines of the UGC, TANSCHE and MTU and to the current realities and emerging trends, the Integrated Curriculum of the B.Sc. Computer Science is restructured. It provides ample choice of subjects of study to our students, based on weighted credit point system. In addition to the core courses in their respective discipline, the learners are offered a number of complementary job-oriented and Skill Enhancement Courses under Discipline Specific and Generic Elective Courses.

EXTRA CREDIT

At the end of the fourth semester, (in summer holidays) the students should undergo an Internship cum Mini project and viva voce will be conducted in the first week of the fifth semester. They should submit an Internship cum Mini Project report at the beginning of fifth semester and can earn 2 more credits. Students can opt for a MOOC Online course in Self-paced Learning and they have to submit the certificate to earn 2 credits extra.

Students can acquire more credits by undergoing certificate courses offered by other disciplines. For Internship cum Mini Project and Self Study paper, the status of pass and extra credit will be indicated, but it will not be included for OPM.

PATTERN OF EVALUATION

For each paper there will be continuous internal assessment (CIA) and Semester Examination (External). The Weightage ratio is

Paper	Internal	External	Total
Theory	25	75	**100**
Practical	40	60	**100**
Project	50	50	**100**
Internship cum Mini Project	100	-	**100**

Components for Continuous Internal Assessment (CIA) - Theory

Component	Marks	Marks
Internal test I	40	Converted to 25
Internal test II	40	
Online Quiz	10	
Assignment	5	
Attendance	5	
Total	**100**	**25**

Components for Continuous Internal Assessment(CIA) – Practical

Component	Mark
Internal Test(2)	15
Lab Work	10
Record	10
Attendance	05
Total	**40**

Components for Continuous Internal Assessment(CIA)

Project and Mini Project

Project		**Internship cum Mini Project**	
Review (2)	25	Project Execution & Output	30
Project Execution	10	Viva	30
Record	10	Presentation	20
Attendance	05	Report	20
Total	**50**	**Total**	**100**

AECC 1: Professional English for Computer Science

Component	Mark
Internal Test (2)	30 +30
Listening Comprehension (Group Discussion)	10
Speaking Comprehension (Situational Conversation)	10
Reading Comprehension (Article Reading)	10
Writing Comprehension (Report Presentation)	10
Total	**100**

Skill Enhancement Compulsory Course– I and Generic Electives

Component	Mark
Internal test I	30
Internal test II	30
Lab Work	30
Record	5
Attendance	5
Total	**100**

Skill Enhancement Compulsory Course - 4

Component	Mark
Internal test I	30
Internal test II	30
Online Quiz	30
Assignment	5
Attendance	5
Total	**100**

Passing Minimum

Semester Examination	
Theory	40% out of 75 Marks (i.e. 30 Marks)
Practical	40% out of 60 Marks (i.e. 24 Marks)

CIA for Practical: 40 Marks and for Project: 50 Marks

External Question Pattern

Part - A

10 Questions × 1Mark = 10 Marks

(Two Questions from each Unit)

Part - B

5 Questions × 5 Marks = 25 Marks

(Internal Choice and one set of Question from each Unit**)**

Part - C

4 Questions × 10 Marks = 40 Marks (4 Questions out of 6)

(Open Choice and at least one Question from each Unit)

Internal Question Pattern

Part - A

10 Questions × 1Mark =10 Marks

Part - B

2 Questions × 5 Marks = 10 Marks

(Internal Choice)

Part - C

2 Questions × 10 Marks = 20 Marks (2 Questions out of 3)

(Open Choice and at least one Question from allotted Units)

Internal Question Pattern for AECC 1 and SECC 1 & 4 (1 hour)

Part - A

20 Questions × 1Mark =20 Marks

Part - B

2 Questions × 5 Marks = 10 Marks

(Internal Choice)

U.G. PROGRAMME OUTCOMES

PO. NO.	UPON COMPLETION OF THIS PROGRAMME THE STUDENTS WILL BE ABLE TO
1.	Think critically, evaluate analytically and apply the acquired knowledge of their discipline in related scenario.
2.	Formulate hypothesis, design experiments, use appropriate tools and interpret the results.
3.	Demonstrate the precise understanding of the principles and theories of their discipline through experiments.
4.	Enhance the communicative skills and gain confidence to disseminate knowledge through oral/verbal communications effectively at various situations.
5.	Identify the different roles in an organizational structure of the work place and carry out multiple roles in social responsibilities.
6.	Increase self-awareness, set and pursue meaningful goals, and develop positive personal qualities.

U.G. PROGRAM SPECIFIC OUTCOMES

PSO	UPON COMPLETION OF THIS PROGRAMME THE STUDENTS WILL BE ABLE TO	PO MAPPED
PSO-1	Acquire the basic fundamental domain knowledge for developing effective computing solutions for Mathematics and Electronics.	PO -1 PO - 2 PO - 3
PSO-2	Develop the analytical mind, critical and logical thinking to apply mathematical foundations, algorithmic principles, and computing theories in the modeling and design of computer-aided systems for employability and entrepreneurship skills.	PO - 1 PO - 2 PO - 3 PO - 5 PO - 6
PSO-3	Create computing professionals through in-depth training in programming languages to cater the technological changes.	PO - 2 PO - 3
PSO-4	Develop leadership qualities, good communication on teams to accomplish shared computing design and evaluation or implementation goals through projects.	PO - 4 PO - 5 PO – 6
PSO-5	Inculcate the professional, ethical, legal knowledge on security and social issues with social responsibility.	PO – 2 PO – 5

UG COURSE PATTERN - 2020 - 2023 (UGC/ TANSCHE/ MTU)

Sem.	Part	Code	Title of the Paper	Hours	Credits
I	I	20GT1GS01/ 20GH1GS01/ 20GF1GS01	Tamil – I Hindi-I French-I	6	3
	II	20GE1GS01	English – I	6	3
	III	20CS1MC01	Programming in C	5	5
		20CS1CP01	Programming in C– Lab	4	2
		20CS1AC01	Mathematical Foundation for Computer Science	5	4
	IV	20CS1AE01	**Ability Enhancement Compulsory Course (AECC)- 1:** Professional English for Computer Science	2	2
		20SE1CE1A	**Skill Enhancement Compulsory Course (SECC)- 1:** Computer Fundamentals	2	2
	V	20STPNC01/ 20STPNS01/ 20STPPE01	**Students Training Programme:** National Service Scheme/ National Cadet Crops/ Physical Education	-	-
			Total	**30**	**21**
II	I	20GT2GS02 20GH2GS02 20GF2GS02	Tamil – II Hindi-II French-II	6	3
	II	20GE2GS02	English – II	6	3
	III	20CS2MC02	Object Oriented Programming with C++	4	4
		20CS2CP02	Object Oriented Programming–Lab	3	2
		20CS2MC03	Web Designing	2	2
		20CS2AC02	Computer Oriented Numerical Methods	5	4
	IV	20AE2ES02	**Ability Enhancement Compulsory Course (AECC)- 2:** Environmental Studies	2	2
		20SE2CB02	**Skill Enhancement Compulsory Course (SECC)- 2:** Capacity Building	2	2
	V	20STPNC01/ 20STPNS01/ 20STPPE01	**Students Training Programme:** National Service Scheme/ National Cadet Crops/ Physical Education	-	-
			Total	**30**	**22**

Sem.	Part	Code	Title of the Paper	Hours	Credits
III	I	20GT3GS03/ 20GH3GS03/ 20GF3GS03	Tamil – III Hindi – III French-III	6	3
	II	20GE3GS03	English – III	6	3
	III	20CS3MC04	Programming in JAVA	4	4
		20CS3CP03	Programming in JAVA –Lab	3	2
		20CS3MC05	Optimization Techniques - I	2	2
		20CS3AC03	Digital Electronics	3	3
		20CS3AP01	Digital Electronics –Lab	2	1
		20CS3DE1A/ 20CS3DE1B	**Discipline Specific Elective - 1** Computer Organization and Architecture/ Cloud Computing	4	3
	V	20STPNC01/ 20STPNS01/ 20STPPE01	**Students Training Programme:** National Service Scheme/ National Cadet Crops/ Physical Education	-	-
			Total	**30**	**21**
IV	I	20GT4GS04/ 20GH4GS04/ 20GF4GS04	Tamil – IV Hindi – IV French-IV	6	3
	II	20GE4GS04	English – IV	6	3
	III	20CS4MC06	Microprocessor	4	4
		20CS4CP04	Microprocessor –Lab	3	2
		20CS4MC07	Optimization Techniques – II	2	2
		20CS4AC04	Computer Graphics	3	3
		20CS4AP02	Hardware - Lab	2	1
		20CS4DE2A/ 20CS4DE2B	**Discipline Specific Elective - 2** Data Structures / Embedded System	4	3
	V	20STPNC01/ 20STPNS01/ 20STPPE01	**Students Training Programme:** National Service Scheme/ National Cadet Crops/ Physical Education	-	2*
		20EX5GS01	**Service Learning Programme -** Extension JACEP	-	-
			Total	**30**	**21 + 2***

Sem.	Part	Code	Title of the Paper	Hours	Credits
V	III	20CS5MC08	Web Application Development	4+1	5
		20CS5MC09	Database Management System	4+1	5
		20CS5MC10	Operating System	4	4
		20CS5CP05	Web Application Development – Lab	5	3
		20CS5CP06	Database Management System– Lab	5	3
		20CS5DE3A/ 20CS5DE3B	**Discipline Specific Elective - 3** Software Engineering / Software Testing	4	3
	IV	20CS5GE01/ 20GE5NC01	**Generic Elective - 1 (NME)** Scripting Language - Lab (S to S)/ NCC - National Integration and Personality Development	2	2
	IV	20SE5AB03	**Skill Enhancement Compulsory Course (SECC) - 3:** Aptitude building	2	2
	V	20EX5GS01	**Service Learning Programme** - Extension JACEP	-	4*
	VI	20CS5MP01	Web Development – Internship cum Mini Project – During Summer Holidays	-	1**
		20CS5SS01/ 20CS5SM01	**Self Study Course:** Self-Paced Learning/ MOOC Course	-	2*
			Total	**30 +2**	**27+4*+ 2*+1****
VI	III	20CS6MC11	Computer Networks	4	4
		20CS6MC12	Big Data Mining	4	4
		20CS6MC13	Mobile Computing	4	4
		20CS6DE4A/ 20CS6DE4B	**Discipline Specific Elective - 4** Internet of Things/ Artificial Intelligence	4	3
		20CS6MCP1	Project	10	9
	IV	20CS6GE02/ 20GE6NC02	**Generic Elective - 2 (NME)** Flash Lab (S→ A)/ NCC - Organization and Health Programme in NCC	2	2
	IV	20SE6CS04	**Skill Enhancement Compulsory Course (SECC) - 4:** Statistics for Computer Science	2	2
			Total	**30**	**28**
	Total for all Semesters			**180+2**	**140+8* +1****

*** Extra Credit - Self-Paced Learning - MOOCs**

**** Departmental Extra Credit – Fully Internal Paper**

PROGRAMMING IN C

Semester: I **Hours: 5**

Code : 20CS1MC01 **Credits: 5**

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO-1	Gain the fundamental knowledge of C programming language.	PSO-1	K
CO-2	Apply decision making, branching and looping in C.	PSO-2	AP
CO-3	Develop deep knowledge in arrays, strings and user defined functions.	PSO-3	AP
CO-4	Compare and contrast structures and unions.	PSO-2	AN
CO-5	Analyze pointers and file handling concepts in C.	PSO-1	AN

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: I				**PROGRAMMING IN C**							**Hours: 5**
Code : 20CS1MC01											**Credits: 5**
Course Outcomes	**Programme Outcomes (PO)**						**Programme Specific Outcomes (PSO)**					**Mean Score of CO's**
	1		**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	
CO-1	5	5	4	3	2	2	5	5	3	2	2	3.45
CO-2	5	5	4	3	2	2	5	5	4	2	2	3.55
CO-3	5	4	4	3	4	2	5	5	5	3	3	3.91
CO-4	5	4	5	4	3	3	5	5	5	3	3	4.09
CO-5	5	4	5	4	3	3	5	5	5	3	3	4.09
Overall Mean Score												**3.82**

Result: The score for this course is **3.82** (High Relationship)

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = Total of Values / Total No. of Pos & PSOs	Mean Overall Score for Cos= Total of Mean Scores / Total No. of Cos

UNIT I

Overview of C: History of C – Importance of C –Basic Structure of C Programs – **Constants, Variables and Data types:**Introduction- Character Set - C Tokens – Keywords and Identifiers –Constants- Variables- Data types – Declaration of Variables –Declaration of Storage Class- Assigning Values to Variables- Defining Symbolic Constants – Declaring a Variable as Constant – Declaring a Variable as Volatile -**Operators and Expressions:** Introduction – Arithmetic Operators – Relational Operators- Logical Operators- Assignment Operators – Increment and Decrement Operators – Conditional Operators – Bitwise Operators – Special Operators – Arithmetic Expressions – Evaluation of expressions – Precedence of Arithmetic Operators. **Managing Input and Output Operations:** Reading a Character – writing a character – Formatted Input – Formatted Output**. (15 Hours)**

UNIT II

Decision Making and Branching – Introduction- Decision Making with IF statement – Simple IF statement – The IF …ELSE Statement – Nesting of IF…ELSE statements- The ELSE… IF Ladder – The Switch Statement –The?: Operator –The Goto Statement –**Decision Making and Looping** –Introduction-The WHILE Statement – The DO Statement – The FOR Statement – Jumps in Loops. **(15 Hours)**

UNIT III

Arrays: Introduction – One dimensional Arrays-declaration of One-dimensional Arrays-Initialization of One-dimensional Arrays- Two dimensional Arrays - Initializing Two dimensional Arrays – Multi dimensional Arrays –Dynamic Arrays – **Character Arrays and Strings:** Introduction – Declaring and Initializing String Variables – Reading Strings from Terminal – Writing Strings to screen –Arithmetic Operations on characters – Putting Strings Together – Comparison of Two Strings - String Handling Functions. **User Defined Functions:** Introduction – Need for user defined functions- a multi-function program- elements of user defined functions – return values and the types – function calls – Function Declaration- Categories of Functions – Nesting of Functions – Recursion – passing array to functions. **(15 Hours)**

UNIT IV

Structures and Unions: Introduction- Defining a structure – Declaring Structure Variables – Accessing Structure Members-Structure Initialization – Copying and Comparing Structure Variables - Operations on Individual Members - Arrays of Structures - Arrays Within Structures- Structures within Structures – Structures and Functions –Unions – Size of Structures – Bit fields. **(15 Hours)**

UNIT V

Pointers: Introduction – Understanding Pointers - Accessing the Address of a Variable – Declaring Pointer Variables – Initialization of Pointer Variables - Accessing a Variable Through its Pointer – Chain of Pointers –pointer Expressions -**File Management in C:**Introduction – Defining and Opening a File – Closing a File – Input/Output Operations on Files – Error Handling during I/O Operations – Random Access to files – Command line arguments. **(15 Hours)**

BOOK FOR STUDY

1. **"Programming in ANSI C",** E. Balagurusamy, Tata McGraw Hill Private Limited, New Delhi, Eighth Edition, 2019.
   UNIT I : Chapters 2.1, 2.2, 2.8, 3, 4,5
   UNIT II : Chapters 6, 7
   UNIT III : Chapters 8, 9, 10
   UNIT IV : Chapter 11
   UNIT V : Chapters 12, 13

BOOKS FOR REFERENCE

1. "**The CProgramming Language"**–Brian W.Kernighan, Dennis M.Ritchie, Second Edition, Prentice Hall, 2015
2. "**Let us C**" –YashavantKanethkar, Sixteenth Edition, BPB Publishers, 2017.

PROGRAMMING IN C - LAB

Semester: I **Hours: 4**

Code : 20CS1CP01 **Credits: 2**

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO-1	Acquirethe basic concepts of C to solve simple problems.	PSO-1	K
CO-2	Design small applications using arrays and functions in C.	PSO-1	AP
CO-3	Implement Structure and pointers in C programs for dealing with multiple data.	PSO-2	AP
CO-4	Working on strings with and without string handling functions	PSO-2	C
CO-5	Develop applications using files and pointer functions in C.	PSO-2, 5	C

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: I				**PROGRAMMING IN C - LAB**							**Hours: 4**
Code : 20CS1CP01											**Credits: 2**
Course Outcomes	**Programme Outcomes (PO)**						**Programme Specific Outcomes (PSO)**					**Mean Score of CO's**
	1		**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	
CO-1	5	5	4	3	2	3	5	4	3	3	4	3.73
CO-2	5	4	4	2	2	3	5	4	3	3	4	3.55
CO-3	4	5	4	2	3	3	4	5	4	3	4	3.73
CO-4	4	4	4	2	3	3	4	5	4	2	4	3.55
CO-5	4	4	4	2	3	3	4	4	3	2	4	3.36
Overall Mean Score												**3.58**

Result: The score for this course is **3.58** (High Relationship)

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = Total of Values / Total No. of Pos & PSOs	Mean Overall Score for Cos= Total of Mean Scores / Total No. of Cos

1. Simple Programs
2. Programs for Number Checking
3. Programs for Number Generation
4. Programsusing One-Dimensional Array
5. Programsusing Two-Dimensional Array
6. Programsusing Function
7. Program using Recursive function
8. Library Maintenance using Structure
9. String Manipulation using Pointers without Predefined Function
10. Program using Files

MATHEMATICAL FOUNDATION FOR COMPUTER SCIENCE

Semester: I **Hours: 5**

Code : 20CS1AC01 **Credits: 4**

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO-1	Formulate logic expressions for a variety of applications.	PSO-1	K
CO-2	Differentiate atomic and compound statements formulae.	PSO-2	U
CO-3	Explain the basic concepts of graph theory.	PSO-1	U
CO-4	Identity, formulate and solve computer science problems into mathematics logical statement.	PSO-3	AP
CO-5	Construct the maximin-minimax principal to find the better solutions.	PSO-5	C

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: I				**MATHEMATICAL FOUNDATION FOR COMPUTER SCIENCE**								**Hours: 5**
Code : 20CS1AC01												**Credits: 4**
Course Outcomes	**Programme Outcomes (PO)**						**Programme Specific Outcomes (PSO)**					**Mean Score of CO's**
	1		**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	
CO-1	5	4	4	3	2	3	4	4	3	2	2	3.27
CO-2	5	4	4	3	2	3	4	4	3	2	2	3.27
CO-3	5	4	4	3	3	3	4	4	4	3	3	3.64
CO-4	5	4	4	3	3	3	4	4	4	3	3	3.64
CO-5	5	4	4	3	3	3	4	4	3	3	3	3.55
Overall Mean Score												**3.47**

Result: The score for this course is **3.47** (High Relationship)

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos= $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$

UNIT I

Matrix Algebra: Introduction – Matrix operations – Inverse of a square matrix – Elementary operations and Rank of a matrix – Simultaneous Equations – Eigen values and Eigen vectors. **(15 Hours)**

UNIT II

Logic: Introduction – TF statements – Connectives – Atomic and compound statements – Well found formula – Truth table of a formula – Tautology – Tautological implication and equivalence of formulae. **(15 Hours)**

UNIT III

Basic definitions – Graph – Adjacent – Multi graph – Complete graph –Null graph –Bi graph – Complete bi graph - Degrees – Isolated point – Regular graph – Cubic graph - Sub graphs – Spanning sub graph - Isomorphism – Automorphism. **(15 Hours)**

UNIT IV

Walk – Initial point – Terminal point – Trail – Path - Closed – Cycle - Triangle – Connected – Disconnected (Theorem 4.4 to Theorem 4.7) – Connectivity – Line connectivity – n-connected - n-line connected. **(15 Hours**)

UNIT V

Some applications – Connector problem – Weighted graph – Weight – Kruskal's algorithm –Shortest path problem - Dijkstra's algorithm – Transformation – Operands – Images – Closed – Single valued - kinematic graph – Equilibrium basins – Designing one way traffic systems – The Travelling salesman problem – Job sequencing problem. **(15 Hours)**

BOOKS FOR STUDY

1. **"Discrete Mathematics",** Dr. M.K Venkataraman, Dr. N. Sridharan, Dr. Chandra Sekaran, The National Publishing Company, 2000.

   Unit I: Chapter VI - (1 – 7)

   Unit II: Chapter IX - (1 – 8)

2. **"Invitation to Graph Theory"** S.Arumugam, S. Ramachandran, Scitech Publications (India) PVT. Ltd, Chennai - June 2001.

   Unit III: Chapter II -(2.1, 2.2, 2.3, 2.4)

   Unit IV: Chapter IV - (4.1,4.2,4.4)

   Unit V: Chapter XI - (11 .1, 11.2, 11.3, 11.4, 11.5)

BOOKS FOR REFERENCE:

1. **"Discrete Mathematics and its Applications",** Kenneth H. Rosen, McGraw – Hill International Editions, Fifth Edition, 2003.
2. **"Elements of Discrete Mathematics",** C.L. Liu, Second Edition, McGraw – Hill International Edition, 1985.

PROFESSIONAL ENGLISH

Semester: I **Hours: 2**

Code : 20CS1AE01 **Credits: 2**

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO-1	Learn to use LSRW skills and advanced communication skills in the technical field of their study.	PSO-1	K
CO-2	Identify a range of specialist ICT vocabulary and use it accurately in spoken and written work.	PSO-1,2	K
CO-3	Understand how English is used in Computer Science field so as to imbibe the spirit of using the standard language for communication.	PSO-1,2	AP
CO-4	Demonstrate subject related matters throughwritten exercises and discussion.	PSO-2	AP
CO-5	Use specific vocabulary, explanations, definitions and expressions of technical scenario.	PSO-4,5	S

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: I				**PROFESSIONAL ENGLISH**							**Hours: 2**
Code : 20CS1AE01											**Credits: 2**
Course Outcomes	**Programme Outcomes (PO)**						**Programme Specific Outcomes (PSO)**					**Mean Score of CO's**
	1		**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	
CO-1	5	5	3	3	4	2	5	5	3	2	2	3.55
CO-2	5	5	3	3	4	3	4	5	3	3	2	3.64
CO-3	5	3	4	2	3	2	5	5	3	2	2	3.27
CO-4	4	4	4	2	4	2	4	5	2	2	2	3.18
CO-5	4	3	3	2	4	3	4	5	3	3	2	3.27
Overall Mean Score												**3.38**

Result: The score for this course is **3.38** (High Relationship)

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = Total of Values / Total No. of Pos & PSOs	Mean Overall Score for Cos= Total of Mean Scores / Total No. of Cos

UNIT I	**Topic / Context**	:	**Hardware / Software:** Hard drives and storage devices, Input and Output Devices, Operating systems, Configuration and installation of computers, Laptops and other mobile devices,	**6 Hours**
	Grammar /Function	:	Describe the functions of a computer hardware Present simple / present continuous (active and passive forms) Countable and uncountable nouns Comparatives Defining relative clauses Imperative forms& givinginstructions Perfect tenses (active and passive form)	
	Speaking/ Listening	:	Listen for specific information/ key vocabulary, provide explanations and Contrast & compare Explain functions of specialist verbs and nouns	
	Reading/ Writing	:	Reading for specific information Discard incorrect information Online activities and tests Create table (Word document) with information on Summarize main strengths and weaknesses of different types of operating systems	
	Teaching and Learning Methods		Vocabulary focus group presentation andlanguage focus Examination of text 'how to install a computer' **Supporting video:** Matching pairs /definitions Cloze exercise Students conduct class / small group survey of computing needs Identify laptop best suited to group needs Present findings and justify choice **BBC websites:** • http://www.bbc.co.uk/schools/gcsebitesize/ict/hardware/1datastoragerev1.shtml • http://www.bbc.co.uk/schools/gcsebitesize/ict/hardware/0inputandoutputdevicesact.shtml **See example teaching plans:** 1. What is a computer? 2. How to install a software in a computer **3.** Buying a laptop	
	Resources	:	**BBC Websites:** 1. Vocabulary glossary Projector Whole class access to internet 2. Whiteboard /Projector 3. Whole class access to internet 4. Laptop/s Internet access 5. Whiteboard / projector 6. IT magazines (e.g. Which? Magazine) • www.buzzle.com/articles/computer-networking-basics.html • http://www.homepcbuilder.com/ • http://www.youtube.com/watch?v=f1X2Wpwl4dg	

			See example resources: 1. What is a computer? 2. Installing a computer **3.** Laptops, student questions	
	Additional Information and Web Links	:	BBC GCSE ICT website: revision, activities, tests • http://www.bbc.co.uk/schools/gcsebitesize/ict/ • http://www.explainthatstuff.com/howcomputernetworkswork.htmlhttp://www.bbc.co.uk/schools/gcsebitesize/ict/ • http://www.which.co.uk/about-which/what-we-offer/magazines-and-books/which-computing/	
UNIT II	**Topic /Context**	:	**HARDWARE / SOFTWARE:** Printers, scanners, video projectors	**6 Hours**
	Grammar / Function	:	Perfect tenses (active and Perfect tenses passive form) Asking for clarifications Gerunds and infinitives: Making, accepting, refusing suggestions Persuasive adjectives Use and non- use of articles: a / an / the Quantifiers with countable/ uncountable nouns	
	Speaking / Listening	:	Ask questions Justify Contrast and compare Summarize	
	Reading / Writing	:	• How to conduct / participate in a group discussion • Eg.https://ctb.ku.edu/en/table-of-contents/leadership/group-facilitation/group-discussions/main • https://www.softwaretestinghelp.com/how-to-crack-the-gd/ • Presentation of a Project before higher officials • Presenting a report of a customer meeting to the Project Leader	
	Teaching and Learning Methods		Use examples of realia – newspaper adverts, online advertising to demonstrate the format, structure and typical language style used in advertising Whole group focus: video: complain/ complaint as prompt paired role play writing letter of complaint **See sample teaching plan: Printers and scanners**	
	Resources	:	http://www. youtube.com/watch?v=ru53eMo0i2c Examples of adverts: newspaper, lettersof complaint **See example resources:** 1. Printers, scanners and video projectors **2.** Letter/ vocabulary of complaint	

	Additional Information and Web Links	:	http://www.explainthatstuff.com/inkjetprinters.html http://www.explainthatstuff.com/scanners.html http://www. explainthatstuff.com/inkjetprinters.html http://www.explainthatstuff.com/scanners.html	
UNIT III	**Topic /Context**	:	**INTERNET AND THE WEB:** Protection and safety online, Social and professional networks, Basic commands, Use of acronyms HTML / HTTP, Linking, Browsers	**6 Hours**
	Grammar / Function	:	Modal Verbs for obligation, advice and possibility Future tenses; Predictions Giving advice & giving warnings Degrees of adjectives Compound nouns (Web portal, search engine, clipboard) Compound adjectives: Noun +present participle (Space – saving PC) Noun + adjective (A hands-free device A stand-alone computer)	
	Speaking/ Listening	:	• https://www.youtube.com/watch?v=WM1MBAj1yAU • https://www.youtube.com/watch?v=JEVurb1uVFA • https://www.youtube.com/watch?v=qI3UXTXHsus	
	Reading/ Writing	:	• https://www.oki.com/en/otr/2003/n194/pdf/otr-194-R02.pdf • http://j387mediahistory.weebly.com/uploads/6/4/2/2/6422481/printing_history.pdf	
	Teaching and Learning Methods		**See example Teaching Plan**: 'Internet vocabulary' **Online tutorials:** • http://www.html.net/http://www.w3schools.com/html/ • http://www.bbc.co.uk/webwise/courses/internet basics/lessons/internet-basics Guide students through the appropriate online exercises and activities. Whole class test and preparations for final assessments.	
	Resources	:	Reading booklet: Rough Guide to Staying Safe Online Prepare class questionnaire template http://www.webmonkey.com/ **See example resources:** 1. 'Internet' 2. 'Internet Cloze exercise' 3. HTML worksheet / create a simple webpage 4. 'Student worksheet: web browsers'	
	Additional Information and Web Links	:	• http://www.explainthatstuff.com/internet.html • http://www.explainthatstuff.com/howthewebworks.html • http://www.explainthatstuff.com/internet.html • http://www.explainthatstuff.com/internet.html • http://en.wikipedia.org/wiki/Web_browser	

UNIT IV	**Topic /Context**	:	**MULTIMEDIA:** Human communication and speech, Video conferencing **CREATIVE MEDIA:** Working in the creative industries	**6 Hours**
	Grammar / Function	:	Adjectives Relative pronoun + verb Relative clauses (defining and non-defining) Modal verb 'should' Verbs + adverbs in instructions (look + carefully)	
	Speaking/ Listening	:	http://www.digitalmediajobs.com/content2/Audio-Interviews-22.htm Listen to 2 expert interviews on working in Search Engine Industry, advice for job interviews: 16 & 12 minutes Identify key elements of advice / instruction Use appropriate questions and answers for job interviews	
	Reading/Writing	:	Identify most common prefixes used in ICT terminology and provide definitions	
	Teaching and Learning Methods		**Group focus:**Overview of multimedia products, industry and employmentopportunities. MM product in detail and produce summary of functions / operating options e.g video conferencing Discussion of topic: what is Video conferencing? Present video Whole group Key Word bingo	
	Resources	:	**SeeBBC Bitesize:** • Videoconferencing: http://www.youtube.com/tch?v=5I8j_1Q37Xk • http://www.youtube.com/watch?v=pECR2gGL9sg • **Etiquette:**http://www.youtube.com/watch?v=Xq1AfDvg6qM&feature=related • **Humour:**http://www.youtube.com/watch?v=Lc3k1aXGS78&feature=related **See example Resources:** 1. Virtual Communication 2. Key Word Bingo	
	Additional Information and Web Links	:	Roughguidetomultimedia:(2000) http://www.webproject.org/pdf/rguide42.pdf • **BBCBitesize:** http://www.bbc.co.uk/schools/gcsebitesize/dida/multimedia/productsrev1.shtml • http://www.youtube.com/watch?v=pECR2gGL9sg • http://www.youtube.com/watch?v=9xLSJMoZVcE&feature=related	

UNIT V	**Topic /Context**	:	**VIRTUAL COMMUN ICATION:** Social websites **TYPES OF SOFTWARE PACKAGES:** Key vocabulary, Using documents	**6 Hours**
	Grammar / Function	:	Common prefixes Trans- en- Intra- up- Extra- de- Tele- un- Super- e- Semi- cyber- Common commands: (Open / save/ save as / insert / cut / copy / paste) Conditionals (zero) Linking words for connecting ideas formally; addition and contrasts	
	Speaking/ Listening	:	**Asking questions:** e.g. 1. How do we communicate? 2. What is the future of communication? Explain different models of documents structure to peers Agreeing and disagreeing Instructions: Instruct peers on processes need to e.g. create table, spreadsheet, insert graphics to a Word document Justifications	
	Reading/Writing	:	Summarize the most popular social websites used by the group Identify and contrast the benefit and disadvantages of social networking Read and understand software text online: BBC website Project writing – Informative document on creating data structure with multimedia instruments	
	Teaching and Learning Methods		**See example Resources:** common prefixes in internet use Facebook, Twitter, LinkedIn, MySpace, BBM, Google plus, Bebo, Flickr **Whole class:** explore and identify different software packages and functions **Small group activity:** 1. Explore functions of 1 software package. Report back. 2. Design and present information about particular software package. Review and revise software packages: Vocabulary test: True / false	
	Resources	:	**On screen examples** • http://www.youtube.com/watch?v=Ixl_i2yOEHc • Humour: Dangers of Virtual Communication • http://www.bbc.co.uk/schools/gcsebitesize/ict/software/ • http://www.bbc.co.uk/schools/gcsebitesize/ict/software/wordprocessing_act.shtml See example resources: Software packages Functional Skills	
	Additional Information and Web Links	:	Students' own online social networking sites • http://www.bbc.co.uk/schools/gcsebitesize/ict/software/wordprocessing_act.shtml • http://www.explainthatstuff.com/voicerecognition.htm	
	Topic /Context	:	Assessment / project completion	

BOOK FOR STUDY:

"Vocational English for ICT", British Council, Albania, United Kingdom, May 2012.

UNIT I	**:**	Chapters	:	2, 3
UNIT II	**:**	Chapter	:	4
UNIT III	**:**	Chapters	:	5, 9
UNIT IV	**:**	Chapter	:	6
UNIT V	**:**	Chapters	:	7, 8

BOOKS FOR REFERENCE:

1. **"Computer English for Everyday Use"**BlankaBátri Katalin Fazekas, DI-PRESS, 2003.
2. **"Technical English Vocabulary and Grammar"**Nick Brieger and Alison Pohl, Summertown Publishing.

PROFESSIONAL ENGLISH

Semester: I **Hours: 2**

Code : 20CS1AE01 **Credits: 2**

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Recognise their own ability to improve their competence in using the language	PSO-1, PSO-4	C,AP, S
CO - 2	Use language for speaking with confidence in an intelligible and acceptable manner	PSO-1, PSO-4, PSO-3,PSO-5	C, AP, E
CO - 3	Read independently unfamiliar texts with comprehension	PSO-2, PSO-3, PSO-5	K,C,AP,E
CO - 4	Understand the importance of reading for life and writing in academic life.	PSO-1, PSO-3, PSO-4, PSO-5	C,AP, E
CO - 5	Write simple sentences without committing error of spelling or grammar	PSO-4	C,E

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester : I				**PROFESSIONAL ENGLISH**							**Hours: 2**
Code : 20CS1AE01											**Credits: 2**
Course Outcomes	**Programme Outcomes (PO)**						**Programme Specific Outcomes (PSO)**					**Mean Score of CO's**
	1	**2**	**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	
CO-1	4	4	4	4	4	4	4	3	4	4	4	3.90
CO-2	3	4	4	4	4	4	4	3	4	4	4	3.81
CO-3	4	3	3	3	4	4	4	4	3	3	4	3.63
CO-4	3	4	4	3	4	4	4	3	3	3	4	3.54
CO-5	3	4	3	3	3	3	3	4	4	4	4	3.45
Overall Mean Score												**3.68**

Result: The score for this course is 3.68 (High Relationship)

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$

NB: All four skills are taught based on texts/passages.

UNIT I: COMMUNICATION

Listening: Listening to audio text and answering questions - Listening to Instructions

Speaking: Pair work and small group work.

Reading: Comprehension passages –Differentiate between facts and opinion

Writing: Developing a story with pictures**.**

Vocabulary: Register specific - Incorporated into the LSRW tasks

UNIT II: DESCRIPTION

Listening: Listening to process description.-Drawing a flow chart.

Speaking: Role play (formal context)

Reading: Skimming/Scanning-

Reading passages on products, equipment and gadgets.

Writing: Process Description –Compare and Contrast Paragraph-Sentence Definition and Extended definition-Free Writing.

Vocabulary: Register specific -Incorporated into the LSRW tasks.

UNIT II: NEGOTIATION STRATEGIES

Listening: Listening to interviews of specialists / Inventors in fields (Subject specific)

Speaking: Brainstorming.(Mind mapping).

Small group discussions (Subject- Specific)

Reading: Longer Reading text.

Writing: Essay Writing (250 words)

Vocabulary: Register specific - Incorporated into the LSRW tasks

UNIT IV: PRESENTATION SKILLS

Listening: Listening to lectures.

Speaking: Short talks.

Reading: Reading Comprehension passages

Writing: Writing Recommendations

Interpreting Visuals inputs

Vocabulary: Register specific -Incorporated into the LSRW tasks

UNIT V: CRITICAL THINKING SKILLS

Listening: Listening comprehension- Listening for information.

Speaking: Making presentations (with PPT- practice).

Reading: Comprehension passages –Note making.

Comprehension: Motivational article on Professional Competence, Professional Ethics and Life Skills)

Writing: Problem and Solution essay– Creative writing –Summary writing

Vocabulary: Register specific - Incorporated into the LSRW tasks

COMPUTER FUNDAMENTALS

Semester: I **Hours: 2**

Code : 20SE1CE1A **Credits: 2**

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO-1	Understand the input and output devices of Computers and how it works and recognize the basic terminology used in computer programming.	PSO-1	K
CO-2	Comprehend the basics Knowledge on handling operating system.	PSO-1,2	C
CO-3	Understand the basics of Word processing.	PSO-1,2	U
CO-4	Acquire basic knowledge on Internet, Applications of Internet and the World Wide Web.	PSO-5	K
CO-5	Present the content using presentation software	PSO-4	C

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: I			**COMPUTER FUNDAMENTALS**						**Hours: 2**
Code : 20SE1CE1A									**Credits: 2**
Course Outcomes	**Programme Outcomes (PO)**						**Programme Specific Outcomes (PSO)**					**Mean Score of CO's**
	1		**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	
CO-1	5	5	5	3	4	2	5	5	3	3	2	3.82
CO-2	5	4	5	3	3	3	5	5	4	3	2	3.82
CO-3	5	4	4	2	3	2	5	5	3	3	3	3.55
CO-4	5	4	5	2	3	2	5	5	4	3	3	3.73
CO-5	4	3	4	2	3	3	4	5	3	3	3	3.36
Overall Mean Score												**3.66**

Result: The score for this course is **3.66** (High Relationship)

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos= $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$

UNITI

Introduction to Computers: Evolution of Computers - Generation of Computers - Classification of Computers Analog Digital and Hybrid Computers. **Classification of Computers**: Super Computers - Mainframe Computers - Personal Computers (Different Types) and Terminals (Different Types). Characteristics of Computers - Block Diagram of a Digital Computer - types of OS. **(6 Hours)**

UNIT II

Input / Output Devices: Input Devices – Keyboard – Mouse - Output Devices – VDU - Printers. The User Interface - Using Mouse - Using right Button of the Mouse and Moving Icons on the screen - Use of Common Icons - Status Bar - Using Menu and Menu – selection - Running an Application - Viewing of File - Folders and Directories. Creating and Renaming of files and folders - Opening and closing of different Windows - Using help - Creating Short cuts - Basics of OS Setup - Common utilities. **(6 Hours)**

UNIT III

Understanding Word Processing: Word Processing Basics - Opening and Closing of documents - Text creation and Manipulation - Formatting of text - Table handling - Spell check - language setting and thesaurus - Printing of word document. **(6 Hours)**

UNIT IV

Internet and Internet application: Introduction - Internet evolution Working of Internet - Use of Internet Overview of World Wide Web (Web Server and Client) - Introduction to Search engine and Searching the Web Downloading files Introduction to Web Browsers Working with E-mail (creation and use of the same). **(6 Hours)**

UNIT V

Demonstration in Lab: Word Processing: Write files to optical discs - Create curriculum vitae (CV) of a B. Sc graduate with the specification - To prepare a class timetable using Merge rows, Split row, Insert rows, columns and convert the table into text format. **Making Small Presentation:** Basics of presentation software - Creating Presentation - Preparation and Presentation of Slides - Slide Show - Taking printouts of presentation / handouts. Practice And Understand Different Email Services – Outlook - Practice Creating E-Mail Accounts, Sending, Receiving & Storing of Mails. **(6 Hours)**

BOOK FOR STUDY:

Course Material prepared by parent Department.

BOOKS FOR RESERENCE:

1. **"Fundamentals of Computers",** E. Balagurusamy, Tata McGraw Hill Pvt, Limited 2010
2. **"Computer Fundamentals"**- D.P Nagpal, S. Chand & Company Ltd, New Delhi. 2010
3. **"Fundamentals of Computers"** - Rajaraman, Sixth Edition, Prentice-Hall of India Private Limited. 2015

OBJECT ORIENTED PROGRAMMING WITH C++

Semester: II **Hours: 4**

Code : 20CS2MC02 **Credits: 4**

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO-1	Outline the basic concept of object oriented programming.	PSO-1	K
CO-2	Discuss class, object, constructor and destructor.	PSO-2	U
CO-3	Predict the role of inheritance in building reusable code.	PSO-2	U
CO-4	Analyze Polymorphism and file handling in C++.	PSO-1	AN
CO-5	Handle the errors in a program using exception handling	PSO-2	AP

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: II			**OBJECT ORIENTED PROGRAMMING WITH C++**						**Hours: 4**
Code : 20CS2MC02									**Credits: 4**
Course Outcomes	**Programme Outcomes (PO)**						**Programme Specific Outcomes (PSO)**					**Mean Score of CO's**
	1		**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	
CO-1	5	4	4	3	3	3	5	5	4	3	2	3.73
CO-2	5	3	5	3	3	3	5	5	4	3	2	3.73
CO-3	5	3	4	3	3	2	5	4	4	3	3	3.55
CO-4	5	4	5	3	3	2	5	5	4	3	3	3.82
CO-5	4	4	4	3	3	3	5	5	4	3	3	3.73
Overall Mean Score												**3.71**

Result: The score for this course is **3.71** (High Relationship)

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = Total of Values / Total No. of Pos & PSOs	Mean Overall Score for Cos= Total of Mean Scores / Total No. of Cos

UNIT I

Principles of ObjectOriented Programming: A look at Procedure OrientedProgramming - Object Oriented Programming Paradigm - Basic Concepts of Object Oriented Programming - Benefits of OOP - Object Oriented Languages - Applications of OOP. **Beginning with C++:** What is C++- Application of C++ - A simple C++ Program - More C++ Statements - An Example with Class - Structure of C++ Program - Creating the Source File - Compiling and Linking. **Tokens,Expression and Control Structures:** Tokens – Keywords - Identifiers andConstants - Basic Data types- User Defined Data Types - Storage Classes - Derived Data Types - Symbolic Constants - Type Compatibility- Declaration of Variables - Dynamic Initialization of Variable - Reference Variable - Operator in C++ - Scope Resolution Operator - Member Dereferencing Operators - Memory Management Operators – Manipulators - Type Cast Operator - Expressions and Their Types - Special Assignment Expressions - Implicit Conversions - Operator Overloading - Operator Precedence - Control Structures. **(12 Hours)**

UNIT II

Functions in C++: Introduction- The main function-Function Prototyping - Call byReference - Return by Reference - Inline Functions- Default Arguments - Const Arguments - Recursion - Function Overloading - Friend & Virtual Function - Math Library Functions. **Classes and Objects:** Specifying a Class - Defining Member Functions - Making an Outside Function Inline - Nesting of Member Functions - Private Member Functions - Arrays within a Class - Memory Allocation for Objects - Static Data Members - Static Member Functions - Arrays of Objects - Objects as Function Arguments - Friendly Functions - Returning Objects - Const Member Functions - Pointers to Members - Local Classes. **(12 Hours)**

UNIT III

Constructors and Destructors: Introduction - Constructors – ParameterizedConstructors - Multiple Constructors in Class - Constructors with Default Arguments - Dynamic Initialization of Objects - Copy Constructor - Dynamic Constructor - Constructing Two-Dimensional Arrays - Const Objects - Destructors. **Operator Overloading and Type Conversions**: Defining Operator Overloading - Overloading Unary & Binary Operators - Overloading Binary Operators using Friends - Manipulation of Strings using operators - Rules for overloading operators - Type conversions. **Inheritance**: **Extending Classes:** Single Inheritance - Making a private member Inheritable - Multiple Inheritance - Multilevel Inheritance - Hierarchical Inheritance - Hybrid Inheritance - Virtual Base Class - Abstract Classes - Constructors in Derived Classes - Member Classes - Nesting of Classes. **(12 Hours)**

UNIT IV

Pointers Virtual Functions and Polymorphism: Introduction - Pointers -Pointers to Objects - this Pointer - Pointers to Derived Classes - Virtual Functions - Pure Virtual Functions - Virtual Constructors and Destructors. **Managing ConsoleI/O Operations:** C++ Streams - C++ Stream Classes - Unformatted I/OOperations - Formatted Console Operations - Managing Output with Manipulators. **Working with Files:** Classes for File stream operations - Opening and Closing a file - Detecting End-of-File - More about Open(): File Modes - File Pointers and their Manipulations - Sequential Input and Output Operations - Updating a File: Random Access - Error Handling during File Operations - Command Line Arguments.

(12 Hours)

UNIT V

Templates: Introduction - Class Templates - Class Templates with MultipleParameters - Function Templates - Function Templates with Multiple Parameters. Overloading of Template Functions - Member Function Templates - Non-Type Template Arguments. **Exception Handling:** Basics of Exception Handling - Exception Handling Mechanism - Throwing Mechanism - Catching Mechanism - Rethrowing an Exception - Specifying Exceptions - Exceptions in Constructors and Destructors - Exceptions in Operator Overloaded Functions. **ManipulatingStrings:** Creating (String) Objects - Manipulating String Objects – Relational Operations - String Characteristics - Accessing Characters in Strings – Comparing and Swapping. **(12 Hours)**

BOOK FOR STUDY:

"Object Oriented Programming with C++", E. Balagurusamy, Tata Mc-GrawHill, 7th Edition, 2017.

UNIT I : Chapters : 1- 3

UNIT II : Chapters : 4, 5

UNIT III : Chapters : 6- 8

UNIT IV : Chapters : 9- 11

UNIT V : Chapters : 12, 13, 15

BOOKS FOR REFERENCE:

1. **"A Tour ofC++"**, D. BJarne Stroustrup, Second Edition, Kindle Edition, 2018.
2. "**C++ Programming: An Object Oriented Approach**", Behrouz A. Forouzon, Richard F. Gilberg, 1st Edition, Kindle Edition, 2019.

OBJECT ORIENTED PROGRAMMING- LAB

Semester: II **Hours: 3**

Code : 20CS2CP02 **Credits: 2**

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO-1	Apply object-oriented programming features to program design and implementation.	PSO-1	AP
CO-2	Solve different programming concepts with functions, classes, to overload operators.	PSO-2	AP
CO-3	Execute inheritance and Pointers using classes and templates.	PSO-3	AP
CO-4	Develop programs using Exception handling and file handling mechanisms.	PSO-2	C
CO-5	Apply appropriate advanced object-oriented programming concepts in problem solving.	PSO-3,5	AP

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: II			**OBJECT ORIENTED PROGRAMMING- LAB**						**Hours: 3**			
Code : 20CS2CP02												**Credits: 2**
Course Outcomes	**Programme Outcomes (PO)**						**Programme Specific Outcomes (PSO)**					**Mean Score of CO's**
	1		**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	
CO-1	5	5	4	4	5	2	5	5	4	2	2	3.91
CO-2	5	5	5	3	4	3	4	5	4	3	2	3.91
CO-3	5	4	4	3	4	2	5	5	3	2	2	3.55
CO-4	5	4	5	3	4	2	4	5	4	2	2	3.64
CO-5	5	4	4	3	4	3	4	5	4	3	2	3.73
Overall Mean Score												**3.75**

Result: The score for this course is **3.75** (High Relationship)

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = Total of Values / Total No. of Pos & PSOs	Mean Overall Score for Cos= Total of Mean Scores / Total No. of Cos

1. Simple programs in C++
2. Simple program with classes and objects.
3. Program using friend functions to calculate the total salary of the family.
4. Program using inline function.
5. Demonstration of Operator overloading & Function Overloading.
6. Program using constructor, constructor overloading and destructor.
7. Apply real time problems using different types of inheritance.
    i. Student Details – Single Inheritance
    ii. Employee Details – Multiple Inheritance
    iii. EB Bill Calculation – Multilevel Inheritance
    iv. Railway Reservation Details – Hierarchical Inheritance
8. CIA Mark Preparation Program using Inheritance with virtual base class.
9. Program using Inheritance with virtual functions.
10. Accessing a particular record in a student's file.
11. Program using Templates.
12. Demonstration of Exception handling.

WEB DESIGNING

Semester: II **Hours: 2**

Code : 20CS2MC03 **Credits: 2**

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO-1	Gain the fundamental knowledge on HTML tags.	PSO - 1	K
CO-2	Create web pages using image, tables, frames and forms.	PSO - 1	C
CO-3	Explore DHTML and text effects in creating web pages.	PSO - 1	AP
CO-4	Develop and enhance forms with JavaScript	PSO - 2	C
CO-5	Develop an interactive website using CSS and JavaScript.	PSO - 5	AP

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: II				**WEB DESIGNING**							**Hours: 2**
Code : 20CS2MC03											**Credits: 2**
Course Outcomes	**Programme Outcomes (PO)**						**Programme Specific Outcomes (PSO)**					**Mean Score of CO's**
	1		**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	
CO-1	5	5	4	4	3	2	5	5	4	3	3	3.91
CO-2	5	5	5	3	3	3	4	4	4	3	3	3.81
CO-3	5	4	4	3	4	2	5	5	4	3	3	3.81
CO-4	5	4	5	3	4	2	4	4	5	4	3	3.91
CO-5	5	5	4	3	3	3	4	5	5	5	4	4.18
Overall Mean Score												**3.92**

Result: The score for this course is **3.92** (High Relationship)

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos= $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$

UNIT I

Get Your Feet with HTML: Understand HTML-Convert Text to HTML-Add comments to your HTML document – Text-Headings-Organize your content with Lists -Understand Hypertext and Links-Formatting Tags. **(6 Hours)**

UNIT II

Create Images, Tables, Frames and Forms: Image Tag - Anchor Tag - Enhance your presentation with Graphics-Creating Table-Understand Frames-Modify your Frames. Working with Buttons – Working with Forms - Creating webpage using Tables, Frames, Forms and Buttons. **(6 Hours)**

UNIT III

Working with Style Sheets: Introducing style sheets – Features -Syntax-External Style sheet-Internal Style Sheet-Inline styles-Multiple style sheet – Background – Font – Border – Outline – Margin – Padding – List-Table -**Working with JavaScript:** Introducing JavaScript-Reviewing HTML and JavaScript used in DHTML - Enhancing Forms with JavaScript. **(6 Hours)**

UNIT IV

Demonstration in Labs: Designing webpage using basic tags - Creating Simple Web Page using all Text Formatting - Web Page with Hyper Links and Images - Web Page with Lists - Web Page with Table - Web Page with Frames. **(6 Hours)**

UNIT V

Demonstration in Labs: Application Form Creation - Resume Preparation using images - Dynamic Website Creation (College, Department) - Personal Webpage creation using Style Sheets - Webpage Creation using JavaScript. **(6 Hours)**

BOOK FOR STUDY

"Web Designing", Sr. S. Jothi, Ms. P.Sathya, Acca Publications, 2015.

UNIT I	**:** Chapter	: 1
UNIT II	**:** Chapter	: 2
UNIT III	**:** Chapters	: 4, 5
UNIT IV, UNIT V	**:** Demonstration in Lab	

BOOKS FOR REFERENCE:

1. **"Web Technologies HTML, JavaScript, PHP, Java, JSP XML and AJAX"** Black Book, Kogent Learning Solutions Inc., Dreamtech Press, 2017.
2. **"Internet & World Wide Web How To Program"**, P. J. Dietal, H. M. Deital, Fourth Edition, Pearson International Edition, 2013.
3. **"Web Enabled Commercial Application Development Using HTML, DHTML, JavaScript, Perl CGI",** Ivan Bayross, BPB Publications, New Delhi, 3rd Edition, 2009.

COMPUTER ORIENTED NUMERICAL METHODS

Semester: II **Hours: 5**

Code : 20CS2AC02 **Credits: 4**

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO-1	Locate the errors in numerical computation by solving problems	PSO-1	E
CO-2	Find the value of a function Using Interpolation	PSO-2	AN
CO-3	Explain differentiation and Integration	PSO-3	AN
CO-4	Describe different methods to find numerical solution to ordinary differential equations	PSO-3	U
CO-5	Apply numerical methods to solve complex problems	PSO-5	AP

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: II			**COMPUTER ORIENTED NUMERICAL METHODS**						**Hours: 5**			
Code : 20CS2AC02												**Credits: 4**
Course Outcomes	**Programme Outcomes (PO)**						**Programme Specific Outcomes (PSO)**					**Mean Score of CO's**
	1		**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	
CO-1	5	5	3	3	4	2	5	5	3	2	2	3.55
CO-2	5	5	3	3	4	3	4	5	3	3	2	3.64
CO-3	5	3	4	2	3	2	5	5	3	2	2	3.27
CO-4	4	4	4	2	4	2	4	5	2	2	2	3.18
CO-5	4	3	3	2	4	3	4	5	3	3	2	3.27
Overall Mean Score												**3.38**

Result: The score for this course is **3.38** (High Relationship)

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos= $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$

UNIT I

Algebraic and Transcendental Equations: Introduction – Errors in Numerical Computation – Iteration Method – Bisection Method – Regular False Method – Newton-Raphson Method. **(15 Hours)**

UNIT II

Simultaneous Equations: Introduction – Simultaneous equations – Back substitution – Gauss Elimination method – Calculation of Inverse of a matrix – Crout's method. **(15 Hours)**

UNIT III

Interpolation: Introduction – Newton's Interpolation Formulae – Central Difference Interpolation Formulae (only first 3 methods) –Lagrange's Interpolation Formulae – Divided Differences – Newton's Divided Differences Formulae – Inverse Interpolation. **(15 Hours)**

UNIT IV

Numerical Differentiation and Integration: Introduction - Derivatives using Newton's Forward Differences Formula – Derivatives using Newton's Backward Difference Formula – Derivatives using Central Difference Formulae - Maxima and Minima of the Interpolating Polynomial - Numerical Integration - Newton-Cote's Quadrature formula – Trapezoidal Rule – Simpson's one third Rule – Simpson's three eight Rule. **(15 Hours)**

UNIT V

Numerical solution ofOrdinary Differential Equations: Introduction - Taylor's series method – Picard's method – Euler's method – Runge-Kutta method.

(15 Hours)

BOOK FOR STUDY:

"Numerical Methods" S. Arumugam,S.ThangapandiIssacand. A. Soma Sundaram, Second edition, Sci Tech Publication (India) Pvt. Ltd, Chennai, 2002.

UNIT I : Chapter : 3(3.1 - 3.4)

UNIT II : Chapter : 4(4.1 - 4.6)

UNIT III : Chapter : 7(7.1 - 7.6)

UNIT IV : Chapter : 8(8.1 - 8.5)

UNIT V : Chapter : 10(10.1 - 10.4)

BOOKS FOR RESERENCE:

1. **"Numerical Methods in engineering & Science",** Dr. B.S. Grewal, Khannapublishers, Seventh Edition, July 2005.
2. **"Numerical Methods",** Dr. A. Singaravelu, Meenakshi Agency, New Revised Edition, 2009.

ENVIRONMENTAL STUDIES

PROGRAMME OUTCOMES

PO. NO.	UPON COMPLETION OF THIS PROGRAMME THE STUDENTS WILL BE ABLE TO
1.	Endow with in-depth knowledge, analyze and apply the understanding of their discipline for the betterment of self and society.
2.	Synthesize ideas from various disciplines, enhance the interdisciplinary knowledge and extend it for research.
3.	Gain confidence and skills to communicate orally/ verbally in research platforms and state a clear research finding.
4.	Develop problem solving and computational skills and gain confidence to appear for the competitive examinations.
5.	Enhance knowledge regarding research by accumulating practical knowledge in specific areas of research.
6.	Achieve idealistic goals and enrich the values to tackle the societal challenges.

PSO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PO MAPPED
1.	Assess the scope and importance of environmental studies and need for public awareness	PO1,2,3
2.	Develop deeper understanding in classification of resources	PO 1,2,5
3.	Analyse the concept of an eco system	PO1,2,4,6
4.	Comprehend the definitions, causes and control measures of environmental pollutions	P O 1 ,5
5.	Participate in the environmental issues programmes from the unsustainable to sustainable development	PO 1 , 4,5,6

ENVIRONMENTAL STUDIES

Semester: II **Hours: 2**

Code : 20AE2ES02 **Credits: 2**

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Recall the components of our planet earth.	PSO 1,2,4	K, A ,S
CO - 2	Elucidate the importance of the natural resources.	PSO 2,3,5	K, An, E
CO - 3	Summarise the energy status of the environment.	PSO1,2,5	K,A,An
CO - 4	Acquire knowledge on the conservation of our environment.	PSO1,4,5	K,AP,S
CO - 5	Analyse the significance of water and climate towards sustainable development.	PSO 2,3,5	K,An, Ap, S,E

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: II				**ENVIRONMENTAL STUDIES**								**Hours: 2**
Code : 20AE2ES02												**Credits: 2**
Course Outcomes	**Programme Outcomes (PO)**						**Programme Specific Outcomes (PSO)**					**Mean Score of CO's**
	1	**2**	**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	
CO - 1	4	4	3	4	3	4	5	4	5	4	5	4.09
CO - 2	3	4	3	4	3	4	5	4	4	4	4	3.81
CO - 3	3	4	3	4	3	4	5	4	4	4	4	3.81
CO - 4	3	4	3	4	3	3	5	4	5	5	4	3.90
CO - 5	4	4	3	4	3	4	5	4	4	4	5	4.00
Overall Mean Score for COs												**3.92**

Result: The Score for this Course is 3.92 (High Relationship)

Note:

Mapping	1 - 20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = Total of Values / Total No. of Pos & PSOs	Mean Overall Score for Cos = Total of Mean Scores / Total No. of Cos

UNIT I: MULTIDISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES

Definition, scope and importance - Need for public awareness **(2 Hours)**

UNIT II: NATURAL RESOURCES

Classification of Resources: Renewable and non - renewable resources - Forest resources, water resources, mineral resources, food resources, energy resources, Land resources - associated problems; Role of an individual in conservation of natural resources - Equitable use of sources for sustainable life styles. **(8 Hours)**

UNIT III: ECOSYSTEMS

Concept of an ecosystem - Structure and function of an ecosystem - producers, consumers and decomposers - Energy flow in the ecosystem - Food chains, food webs and ecological pyramids - Introduction, types, characteristic features, structure and function of the following Eco system: Forest, grass land, desert and aquatic. **(6 Hours)**

UNIT IV: ENVIRONMENTAL POLLUTION

Definition, Causes, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards, Solid waste management, Role of an individual in prevention of pollution. **(8 Hours)**

UNIT V: SOCIAL ISSUES AND THE ENVIRONMENTS

From unsustainable to sustainable development - Urban problems related to energy Water conservation, rain water harvesting, water shed management, Resettlement and rehabilitation of people, its problem and concerns, case studies, Environmental ethics, Climate change, global warming, acid rain and ozone layer depletion, nuclear accidents and holocaust, case studies. Waste land reclamation. Environmental protection act, air act, water act, wild life protection act. **(6 Hours)**

FIELD WORK

Visit to local area to document environmental assets- river/forest/ grassland/hill/ mountain.

COURSE BOOK:

Murugeshan, R., (2007). Environmental science and Engineering, Millenium publication, Madurai.

UNIT I : Section - 1.1 & 1.2

UNIT II : Section - 1.3 to 1.37

UNIT III : Section - 2.1 to 2.7 & 2.10 to 2.27

UNIT IV : Section - 3.1 to 3.37

UNIT V : Section - 4.1 to 4.17

Note: Tamil Version for Tamil Literature and History Tamil Medium Students.

Continuous Internal Assessment Component (CIA)

Theory:

Component	Marks
Internal test I	40
Internal test II	40
Quiz	10
Assignment	5
Attendance	5
Total	**100**

Continuous Internal Assessment Component (CIA)

Passing Minimum: 40% out of 100

Internal Question Pattern

Part - A

10 Questions × 1Mark =10 Marks

Part - B

2 Questions × 5 Marks = 10 Marks

(Internal Choice)

Part - C

2 Questions × 10 Marks = 20 Marks (2 Questions out of 3)

(Open Choice and atleast one Question from allotted Units)

SKILL ENHANCEMENT COMPULSORY COURSE (SECC -2)
CAPACITY BUILDING

PROGRAMME OUTCOMES

PO. NO.	UPON COMPLETION OF THIS PROGRAMME THE STUDENTS WILL BE ABLE TO
1.	Fix healthy attitudes and standards to face the outside world.
2.	Develop healthy interpersonal, intrapersonal and social relationships.
3.	Analyze the portrayal of social issues depicted in films that help them aware of the issues and figure out ways to eliminate them.
4.	Identify the role of social media in the present scenario and adopt the positive changes.
5.	Build up qualities like team work, leadership and problem solving
6.	Improve perspectives on positive thinking, team work, and creativity

PROGRAMME SPECIFIC OUTCOMES

PSO. NO.	UPON COMPLETION OF THIS PROGRAMME THE STUDENTS WILL BE ABLE TO	PO MAPPED
1.	Develop positive thinking that helps them to set and pursue for meaningful goals.	PO-1, 6
2.	Develop leadership qualities that lead them to inspire and guide people among peer groups and in workplaces.	PO-1, 2, 3, 6
3.	Assess the advantages and disadvantages of social media.	PO-2, 6
4.	Acquiring trade skills by developing social relationships effectively with trade experts.	PO-2,5,6
5.	Understand the portrayal of social causes in films	PO-3

CAPACITY BUILDING

Semester: II **Hours: 2**

Code : 20SE2CB02 **Credit: 2**

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO – 1	Realised the importance of physical health, emotional well-being, and stress management.	PSO-1	K
CO – 2	Apply the features of team work and strive to become good leaders.	PSO-2,4	Ap
CO – 3	Enhance their awareness on social media and e- learning.	PSO-3	Sy
CO - 4	Develop interactive skills in online trade, and become value based professionals.	PSO-4	Ap
CO - 5	Acquire film making skills.	PSO-5	Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester : II				**CAPACITY BUILDING**							**Hours: 2**
Code : 20SE2CB02											**Credits: 2**
Course Outcomes	**Programme Outcomes (PO)**						**Programme Specific Outcomes (PSO)**					**Mean Score of CO's**
	1	**2**	**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	
CO-1	4	4	4	4	4	5	4	4	5	4	4	4.18
CO-2	4	4	5	4	4	4	4	4	4	4	4	4.09
CO-3	4	3	4	4	4	3	4	4	4	4	4	3.81
CO-4	5	4	4	4	4	3	4	4	5	4	3	4
CO-5	4	4	5	4	4	4	3	4	4	4	4	4
Overall Mean Score												**4.01**

Result: The score for this course is 4.01 (Very high)

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$

UNIT I

Positive thinking-Seven steps in dealing with doubts. Traits of positive thinking. Goal setting-techniques of positive thinking to achieve the goals-creativity and components of creativity (6 Hours)

UNIT II

Leadership - Types of Leadership - Team work and public speaking - Importance of maintaining good interpersonal relationship with Team - Motivation - Self confidence - Attitude - Working in Group - Time Management - Effective Planning. (6 Hours)

UNIT III

Skilful usage of Social media (Whatsapp, Twitter, Facebook, Instagram, other app). Cyber bulling, photo, video morphing & editing, fake news. Useful study apps, e learning apps, Health, Police, Lawyer help app, Social issues complaint app. (6 Hours)

UNIT IV

Online interaction with Experts – Mushroom Cultivation – Mrs. Arthi (Batlagundu) –Apiculture –Mrs. Josephine (Madurai), Garment making – Mr. Alagusundaram (Tirupur) - Terrace Garden – Mrs. Megala – (Madurai) – Spirulina Cultivation - D. Aarthi (Madurai) – Antenna Foundation, (Madurai) (6 Hours)

UNIT V

Film Review: Thani Oruvan , Peranmai, Dhangal, 36 Vayadhinile, Kaatrin Mozhi, Ratchasi, English Vinglish - Short Film Making–Submission of Short Flim.

(6 Hours)

BOOKS FOR REFERENCE:

1. Power of positive thinking, Mile, D.J.Rohan Book Company Delhi, 2004.
2. Dolmans 1922, A Handbook Public Speaking 1922, New York, Harcourt Breaee and company.

1. http://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/positive-thinking/art-20043950.
2. http://mayoclinic.org/healthy-lifestyle/stress-management/in-depth/3-simple-strategies-to-help-you-focus-and-de-stress/art-20390057.
3. http://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/3-ways-to-become-more-stress-resilient/art-20267213
4. http://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/3-ways-to-learn-patience-and-amp-up-your-well-being/art-20390072
5. http://www.mayoclinic.org/4-proven-ways-you-can-feel-happier/art-20390079
6. http://mayoclinic.org/healthy-lifestyle/adult-health/in-depth/anger-management/art-20048149

7. http://www.gaiam.com/blogs/discover/positive-thinking-strategies-to-help-you-achieve-yourgoals#:-text=Focus%20on%20what's20%20of20old%20failures.
8. http://www.linkedin.com/pulse/what-makes-positive-attitude-10-components-gary
9. http://ifflab.org/how-to-prevent-cyber-bullying -anti-cyber-bullying-law-in- india/
10. http://www.sciencedaily .com/terms/morphing.htm#:text=Morphing%20 is %special %effect,little%20 instruction%20 from%20the %20 user.
11. http://www.educationalappstore.com/
12. http:// www.mobihealthnews.com/37340/38-more-health-and-wellness-apps-that-connect-to-apples-healthkit
13. http://www.youtube.com/watch?v=skfqt9mm7j4
14. http://www.youtube .com/watch?v-rvy44i-ciE
15. https://www.youtube.com.com/watch?v=rINOELMCiqc
16. http:// www.youtube.com/watch?v=N5R-KCWPzr0&list=PLHw83Z MxtQ9 NdRd5yAxYrxkRsxqcvw iae@index=3
17. http://www.youtube.com/watch?v=PUzaLjSjERE
18. http:// www.youtube.com/watch?v=QkVue8XmVr8
19. http:// www.youtube.com/watch?v=XcRs4JBN43o
20. http:// www.youtube.com/watch?v=dzvpQG-2xC4

Continuous Internal Assessment Component (CIA)

Theory:

Component	Marks
Internal test I	40
Internal test II	40
Quiz	10
Assignment	5
Attendance	5
Total	**100**

Continuous Internal Assessment Component (CIA)

Passing Minimum: 40% out of 100

Internal Question Pattern

Part - A

10 Questions × 1Mark =10 Marks

Part - B

2 Questions × 5 Marks = 10 Marks
(Internal Choice)

Part - C

2 Questions × 10 Marks = 20 Marks (2 Questions out of 3)
(Open Choice and atleast one Question from allotted Units)

STREAM - A

COMPUTER FUNDAMENTALS

Semester: I **Hours: 2**

Code : 20SE1CE1A **Credits: 2**

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO-1	Understand the input and output devices of Computers and how it works and recognize the basic terminology used in computer programming.	PSO-1	K
CO-2	Comprehend the basics Knowledge on handling operating system.	PSO-1,2	C
CO-3	Understand the basics of Word processing.	PSO-1,2	U
CO-4	Acquire basic knowledge on Internet, Applications of Internet and the World Wide Web.	PSO-5	K
CO-5	Present the content using presentation software	PSO-4	C

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: I			**COMPUTER FUNDAMENTALS**								**Hours: 2**
Code : 20SE1CE1A											**Credits: 2**
Course Outcomes	**Programme Outcomes (PO)**						**Programme Specific Outcomes (PSO)**				**Mean Score of CO's**
	1		**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	
CO-1	5	5	5	3	4	2	5	5	3	3	2	3.82
CO-2	5	4	5	3	3	3	5	5	4	3	2	3.82
CO-3	5	4	4	2	3	2	5	5	3	3	3	3.55
CO-4	5	4	5	2	3	2	5	5	4	3	3	3.73
CO-5	4	3	4	2	3	3	4	5	3	3	3	3.36
Overall Mean Score												**3.66**

Result: The score for this course is **3.66** (High Relationship)

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = Total of Values / Total No. of Pos & PSOs	Mean Overall Score for Cos= Total of Mean Scores / Total No. of Cos

UNITI

Introduction to Computers: Evolution of Computers - Generation of Computers - Classification of Computers Analog Digital and Hybrid Computers. **Classification of Computers**: Super Computers - Mainframe Computers - Personal Computers (Different Types) and Terminals (Different Types). Characteristics of Computers - Block Diagram of a Digital Computer - types of OS. **(6 Hours)**

UNIT II

Input / Output Devices: Input Devices – Keyboard – Mouse - Output Devices – VDU - Printers. The User Interface - Using Mouse - Using right Button of the Mouse and Moving Icons on the screen - Use of Common Icons - Status Bar - Using Menu and Menu – selection - Running an Application - Viewing of File - Folders and Directories. Creating and Renaming of files and folders - Opening and closing of different Windows - Using help - Creating Short cuts - Basics of OS Setup - Common utilities. **(6 Hours)**

UNIT III

Understanding Word Processing: Word Processing Basics - Opening and Closing of documents - Text creation and Manipulation - Formatting of text - Table handling - Spell check - language setting and thesaurus - Printing of word document. **(6 Hours)**

UNIT IV

Internet and Internet application: Introduction - Internet evolution Working of Internet - Use of Internet Overview of World Wide Web (Web Server and Client) - Introduction to Search engine and Searching the Web Downloading files Introduction to Web Browsers Working with E-mail (creation and use of the same). **(6 Hours)**

UNIT V

Demonstration in Lab: Word Processing: Write files to optical discs - Create curriculum vitae (CV) of a B. Sc graduate with the specification - To prepare a class timetable using Merge rows, Split row, Insert rows, columns and convert the table into text format. **Making Small Presentation:** Basics of presentation software - Creating Presentation - Preparation and Presentation of Slides - Slide Show - Taking printouts of presentation / handouts. Practice And Understand Different Email Services – Outlook - Practice Creating E-Mail Accounts, Sending, Receiving & Storing of Mails. **(6 Hours)**

BOOK FOR STUDY:

Course Material prepared by parent Department.

BOOKS FOR RESERENCE:

1. **"Fundamentals of Computers",** E. Balagurusamy, Tata McGraw Hill Pvt, Limited 2010
2. **"Computer Fundamentals"-** D.P Nagpal, S. Chand & Company Ltd, New Delhi. 2010
3. **"Fundamentals of Computers"** - Rajaraman, Sixth Edition, Prentice-Hall of India Private Limited. 2015

NATIONAL CADET CORPS

NON MAJOR ELECTIVE

Sem.	Part	Code	Title of Paper	Hours	Credits
V	IV	20GE5NC01	NCC - National Integration and Personality Development	2	2
VI	IV	20GE6NC02	NCC- Organization and Health Programme in NCC	2	2

INTERNAL COMPONENTS

Internal - I	:	30 marks
Internal - II	:	30 marks
Component - I	:	10 marks
Component - II	:	10 marks
Component - III	:	10 marks
Component - IV	:	10 marks
Total	**:**	**100 marks**

NATIONAL INTEGRATION AND PERSONALITY DEVELOPMENT

Semester: V **Hours: 2**

Code : 20GE5NC01 **Credits: 2**

UNIT I: NATIONAL INTEGRATION

Motto of National Integration - Importance of National Integration Culture and heritage of Tamil Nadu. **(6 Hours)**

UNIT II: CIVIL AFFAIRS

Aim of aid to civil authority - Role of NCC Cadets during natural calamities - Types of disaster - Essential services during natural calamities **(6 Hours)**

UNIT III: CIVIL DEFENCE AND SELF DEFENCE

Civil Defence - Organization - Aims and services - Aid to Civil authorities in emergency - Self Defence -Aims of Self Defence - Women and Self Defence **(6 Hours)**

UNI IV: LEADERSHIP AND PERSONALITY DEVELOPMENT

Leadership - Types and traits - Man Management in NCC - Duties of a Good Citizen - Role of Youth in Nation Building - Morale - Factors which affect morale - Factors which develop high morale Personality Development - Factor influencing Personality-Time Management . **(6 Hours)**

UNIT V: SOFT SKILLS

Soft skills - interview skill - influencing skill - social skill - communication skill - self motivation - self esteem - body language. **(6 Hours)**

BOOK FOR REFERENCE:

Mishra R.C., **A Handbook of NCC,** Kanti Prakashan, Etawah, 2000.

ORGANIZATION AND HEALTH PROGRAMME IN NCC

Semester: VI **Hours: 2**

Code : 20GE6NC02 **Credits: 2**

UNIT I: INDIAN MILITARY AND NCC ORGANIZATION

History of Indian Military - Paramilitary forces - BSF- CRPF and CISF - NCC Organization and History - Aims and Objectives of NCC - Motto of NCC - DG's Four Cardinal Principles of NCC - NCC Song- Ranks in Army, Air force and Navy - Certificate Examination in NCC- Honours and Awards. **(6 Hours)**

UNIT II: MAP READING

Map and its features - kinds of north - Service protractor and Compass-bearing - Conversion of bearings - Conventional signs - Setting of map - Finding own position - Map to ground - Ground to map - Night March chart. **(6 Hours)**

UNIT III: HYGIENE AND SANITATION

Personal Hygiene - Sanitation - Methods of purification of drinking water -Latrine types - Urinal Types. **(6 Hours)**

UNIT IV: TYPES OF DISEASE AND POLLUTION

Define Health - Types of Health - Communicable and Non communicable Disease - Pollution and its type. **(6 Hours)**

UNIT V: FIRST AID

Aims of First Aid - Principle of First Aid - Motto of First Aid - List of items in First aid Box - Types of Bandages - Types of Fracture - Dislocation - Types of Wounds - Burns and Scalds - Sprain - Strain - Asphyxia - Drowning - Poison - Shock - Snake bite - Sun and Heat Stroke - Insect bite - Dog bite - Hanging - Artificial Respiration - Haemorrhage. **(6 Hours)**

BOOK FOR REFERENCE:

Mishra R.C., **A Handbook of NCC,** Kanti Prakashan, Etawah, 2000.

INTERNAL QUESTION PATTERN

Time: 2 hours **Marks: 30**

PART - A

Answer Any 4 out of five 4 x 2 = 8

PART- B

Two either or questions (one from each) 2 x 4 = 8

PART - C

Two either or questions (one from each 2 x 7 = 14

DEPARTMENT OF PHYSICAL EDUCATION

COURSE PATTERN

(PART V)

Sem.	Code	Title of the Paper	Hours	Credits
I & II	20STPPE01	Yoga and Rhythmic Activities	120	-
III & IV		Fundamentals of Physical Education	120	1
		Total	**240**	**1**

YOGA AND RHYTHMIC ACTIVITIES

Semester: I & II **Hours: 120**

Code : 20STPPE01

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	COGNITIVE LEVEL
1.	Recall the principle of Asnas	K
2.	Classify Pranayama for different needs	C
3.	Appraise the application and effects of Suryanamaskar for human wellness	An
4.	Execute the techniques in Free Hand Exercise	Ap
5.	Construct Pyramids based on the underlying principles	S

UNIT I: ASNAS

Sitting Postures - Standing Posture - Prone Posture - Supine Postures.

(24 hours)

UNIT II: PRANAYAMA

Pranayama - Suga Pranayama - Chandra bethana - Nadi Sudhi - Ujjayee - Seethali -Seethakari - Brahmari. **(24 hours)**

UNIT III: SURYANAMASKAR

Suryanamaskar: 12 Postures - 12 Postures & Breathe consioius - 12 Postures With manthra - Relaxation Techiniques. **(24 hours)**

UNIT IV: CALLISTHENICS (FREE HAND EXERCISE)

Standing series - Bending series - Sitting series - Twisting series - Dumb - bells - Indian Clubs - Lezium - Hoops. **(24 hours)**

UNIT V: AEROBICS & PYRAMIDS

Aerobics: Aerobic Basics - Aerobic Movements - Aerobic With Rhythm - Aerobic Programme Pyramids: Basics of Pyramids - Types of Pyramids. **(24 hours)**

BOOKS FOR REFERENCE:

1. Wuest Jeborah,A and Charles A. Bucher (1987), 'Foundation of Physical Education, B.I Publication Pvt.Ltd., New Delhi.
2. Elangovan.R, (2002), 'Utarkalvi Oru Arimugam', Ashwin Publication, Triunelveli.
3. Chandrasekaran.K, (1999), 'Sound Health through Yoga, Prem Kalyan Publication, Sedapatti.
4. Iyengar, B.K.S,'Lights on Yoga', Unwin Hyman Company, London

FUNDAMENTALS OF PHYSICAL EDUCATION

Semester: III & IV **Hours: 120**

Code : 20STPPE01 **Credits: 1**

COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	COGNITIVE LEVEL
1.	Familiarize the fundamentals of Physical Education	K
2.	Illustrate different rules for different games and athletic events	C
3.	Examines the need for good nutrition	Ap
4.	Synthesis the relation between hygiene and health	S
5.	Apply the first aid techniques	Ap

UNIT I: PHYSICAL EDUCATION

Definition, need, scope, aims and objectives of physical education. **(24 hours)**

UNIT II: GAMES AND ATHLETEIC EVENTS

History of Games: Basketball, Volley Ball, Kho-Kho, Kabaddi, Badminton and Ball Badminton - Rules and regulation of the Games and Athletic Events. **(24 hours)**

UNIT III: NUTRITION

Balanced Diet, Daily Energy Requirement, Nutrient Balance, Nutrition Intake, Diet and Competition, Nutritional Tips, Your Ideal Weight. **(24 hours)**

UNIT IV: HEALTH EDUCATION

Meaning of health education, Definition of health education, Personal Hygiene, Communicable Diseases **(24 hours)**

UNIT V: FIRST AID

First Aid: Injuries to bones and Muscles, Sprain, Strain, Muscle Cramp and joints Dislocation and Fractures Snake-bite, Dog bite Poisoning, Artificial Respiration, (Drowning) **(24 hours)**

BOOKS FOR REFERENCE:

1. Sathyanesan, R.C., 'Hand Broken Physical Education, 'Gheena Publishers, Madurai.
2. Thirunarayanan,C and Hariharan,s, 'Analytical History of physical Education 'South India Press, Karaikudi.
3. St. John Ambulance Association, 'First Aid to the Injured' New Delhi.
4. Prabhakar Eric, (1995), 'The way to Atheletic Gold', Affliated East West Pvt. Ltd., New Delhi.

SCHEME OF EVALUATION

1.	Summative Examination (2 hours)	:	40 marks
2.	Continuous Internal Assessment	:	60 marks
	Total	**:**	**100 marks**

SCHEME OF EVALUATION FOR COTINUOUS INTERNAL ASSESSMENT

1.	Attendance (240 hrs)			:	20 marks
	❖ Theory Class	:	120 hrs		
	❖ Games	:	60 hrs		
	❖ Field Work	:	60 hrs		
2.	Performance in any one Game			:	10 marks
3.	Performance in any one of Athletic event			:	10 marks
4.	Performance in Yoga / Rhythmic activities			:	10 marks
5.	Assignment			:	10 marks
	Total			**:**	**60 marks**

QUESTION PATTERN FOR SUMMATIVE EXAMINATION

Total marks: 40 **Time: 2 hours**

SECTION - A

Answer All Questions (5x1=5)

(Choose the best Answer)

SECTION - B

Answer any four questions (4x2=8)

(Four question out of six)

SECTION - C

Answer any Four out of Six questions (4x5=20)

(Four question out of six)

SECTION - D

Answer any one question (1x7=7)

(One question out of two)

CERTIFICATE COURSE ON GANDHIAN THOUGHT

PROGRAMME OUTCOMES

PO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO
1.	Think critically, evaluate analytically and apply the acquired knowledge of their discipline in related scenario.
2.	Formulate hypothesis, design experiments, use appropriate tools and interpret the results.
3.	Demonstrate the precise understanding of the principles and theories of their discipline through experiments.
4.	Enhance the communicative skills and gain confidence to disseminate knowledge through oral/verbal communications effectively at various situations.
5.	Identify the different roles in an organizational structure of the work place and carry out multiple roles in social responsibilities.
6.	Increase self-awareness, set and pursue meaningful goals, and develop positive personal qualities such as self-esteem, positive attitude, self-discipline and self-motivation.

PROGRAMME SPECIFIC OUTCOMES

PSO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PO MAPPED
PSO - 1	Analyse the social, political, economic, cultural and religious conditions of the various dynasties of India, British India, Indian Constitution, Indian Administration and Indian Economy to acquire the special skill in the field of administration.	PO- 1, PO-2, PO-4
PSO - 2	Evaluate the History of World Civilizations and Europe in the world politics and compare the various types of constitution and the constitutional development in England.	PO- 1, PO-2
PSO - 3	Get knowledge on the principles of Economics, functions of banking system, development of Science and Technology, Tourism, the importance of Human Rights and equip with computer knowledge and applications for all competitive examinations.	PO- 1, PO-4, PO-5
PSO - 4	Recognize the sacrifice of the freedom fighters in the National Movement and picturize the traditional values in the right perception on Women Studies and Women Entrepreneurship.	PO- 1, PO- 5, PO- 6
PSO - 5	Participate in discussions by listening to others perspectives, asking productive questions, articulating original ideas, correspond efficiently with good vocabulary, realize the need of historical research and excel in General Studies for Competitive Examinations.	PO- 2, PO- 5, PO- 6

PAPER I: LIFE OF MAHATMA GANDHI - CCHYGT01

Code: CCHYGT01 **Hours: 1**

Credit: 1

COURSE OUTCOMES:

CO. NO	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO- 1	Gain Knowledge on the Early Life of Mahatma Gandhi	PSO - 5	K
CO-2	Analyse the racial equality and Mahatma Gandhi's Experience in South Africa	PSO - 5	An
CO-3	Explain the role of Mahatma Gandhi in Indian Freedom Struggle	PSO - 2	Ap
CO-4	Assess the constructive works of Mahatma Gandhi in Indian Nationalism	PSO - 2	Ap
CO-5	Discuss the major Incidents from the Life of Mahatma Gandhi	PSO - 5	Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Code: CCHYGT01	PAPER I: LIFE OF MAHATMA GANDHI - CCHYGT01										Hours: 1 Credits: 1
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 2	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 3	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 4	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 5	5	5	5	5	5	5	4	5	4	3	3	4.45
Overall Mean Score												**4.45**

Result: The score for this course is High

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = Total of Values / Total No. of Pos & PSOs	Mean Overall Score for Cos= Total of Mean Scores / Total No. of Cos

UNIT I

Family background and beginnings of the Mahatma - Birth and childhood - Education and family life - lessons learned - The London Experience

UNIT II

Making of the Mahatma: Gandhi in South Africa - From a barrister to a people's leader - Towards racial equality - From family life to ashram life - Birth of Satyagraha and constructive work - experiments with truth

UNIT III

Beginnings of Indian Freedom Struggle: Early resistances and 1857 Revolt - Birth of Indian National Congress: Moderates, Extremists and Terrorists - Gandhi leads the nation in a new direction - Early micro satyagrahas

UNIT IV

Mahatma Gandhi leads the Freedom struggle to victory: Major satyagrahas - Constructive Work - Sabarmathi and Sevagram - Various currents of Indian Nationalism - Towards partition and freedom - The final martyrdom

UNIT V

Video shows on Gandhi - Field and life experiences - Incidents from the life of Gandhi that inspired and shaped your life.

PAPER II: NON VIOLENCE AND SARVODAYA - CCHYGT02

Code: CCHYGT02 **Hours: 1**

Credit: 1

COURSE OUTCOMES:

CO. NO	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO- 1	Gain Knowledge on Mahatma Gandhi's Non - violence	PSO - 5	As
CO-2	Discuss the Policies of Mahatma Gandhi on Truth and Action	PSO - 5	An
CO-3	Analyse Sarvodaya and Antyodaya	PSO - 5	K
CO-4	Assess the values introduced through Brahmacharya and Aparigraha	PSO - 5	Ap
CO-5	Relate violence and Truth in our day today life with the teachings of Gandhiji	PSO - 2	Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PAPER II: NON VIOLENCE AND SARVODAYA - CCHYGT02											Hours: 1
Code: CCHYGT02												Credits: 1
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 2	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 3	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 4	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 5	5	5	5	5	5	5	4	5	4	3	3	4.45
Overall Mean Score												**4.45**

Result: The score for this course is High

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = Total of Values / Total No. of Pos & PSOs	Mean Overall Score for Cos= Total of Mean Scores / Total No. of Cos

UNIT I

Meaning of Nonviolence (*ahimsa*): Nonkilling and noninjuring - Love, service and forgiving - Nonviolent Action: Peaceful resolution of conflict, nonviolent life style & constructive work and Satyagraha - Nonviolent values and ethics

UNIT II

Truth: Absolute and Relative - Moving beyond falsehood, errors and mistakes - Truth and pluralism - Truth and action - Truth and Nonviolence

UNIT III

Sarvodaya (welfare of all at all levels) and Antyodaya (welfare of the last first) - Means and Ends - Removal of untouchability - Communal Harmony - Uplift of Women

UNIT IV

Removal of poverty: Full & total appropriate employment - Self-dependence, Self - reliance, Swaraj and Swadeshi (love thy neighbour) - Self-control and Sublimation (*brahmacharya*) - Simple and Ethical living - *Aparigraha* (nonpossession) and Trusteeship (stewardship) - Appropriate and Holistic Science and Technology.

UNIT V

Place of Nonviolence and truth in our day to-day life and ways to enhance them - learn and practice three skills which would enhance your self-reliance and ability to help (serve) others in need - Resolve conflicts peacefully - Experience inter-religious relationships, dialogue and prayers.

RECOMMENDED BOOKS

PAPER I

Mahatma Gandhi	:	An Autobiography சத்திய சோதனை
R. Nanda	:	Mahatma Gandhi - A Biography
டி.டி. திருமலை	:	காந்தி
கல்கி	:	மாந்தருள் ஒரு தெய்வம்
திரு.வி.க.	:	காந்தியடிகளும் மனித வாழ்க்கையும்
ஜெயகாந்தன்	:	வாழ்விக்க வந்த காந்தி
J.B. Kriplani	:	Gandhi His Life and Thought
லூயி பிஷர்	:	மகாத்மா காந்தி
Louis Fischer	:	The Life of Mahatma Gandhi
பா. ஆனந்தி, மங்களவதி கேப்ரியல் & வி.ஏ. வித்யா	:	காந்திய சிந்தனை வினா-விடை (Gandhian Thought Quiz)
சி. பெரிதாய் & பா. ஆனந்தி	:	மகாத்மா காந்தியடிகளின் காலம்

PAPER II

M.K. Gandhi	:	Sarvodaya
_____	:	Nonviolence in Peace and War (2 Vols)
_____	:	Truth is God
Richard B. Gregg	:	Power of Nonviolence
மு. வசந்தா (பதி.)	:	சர்வோதயம்
R.R. Diwakar	:	The Saga of Satyagraha
ச. செயப்பிரகாசம்	:	அகிம்சை

COURSE BOOK:

மகாத்மா காந்தியின் வாழ்வும் அறவியலும் - டாக்டர் பா. ஆனந்தி & டாக்டர் ச. செயப்பிரகாசம்

Life and Values of Mahatma Gandhi - Dr. B. Ananthi & Dr. S. Jeyapragasam

தாள் I - மகாத்மா காந்தியின் வாழ்வு - CCHYGT01

Code: CCHYGT01 **Hours: 1**

Credit: 1

COURSE OUTCOMES:

CO. NO	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO- 1	Gain Knowledge on the Early Life of Mahatma Gandhi	PSO - 5	K
CO-2	Analyse the racial equality and Mahatma Gandhi's Experience in South Africa	PSO - 5	An
CO-3	Explain the role of Mahatma Gandhi in Indian Freedom Struggle	PSO - 2	Ap
CO-4	Assess the constructive works of Mahatma Gandhi in Indian Nationalism	PSO - 2	Ap
CO-5	Discuss the major Incidents from the Life of Mahatma Gandhi	PSO - 5	Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Code: CCHYGT01				தாள் I - மகாத்மா காந்தியின் வாழ்வு - CCHYGT01								Hours: 1 Credits: 1
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 2	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 3	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 4	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 5	5	5	5	5	5	5	4	5	4	3	3	4.45
Overall Mean Score												**4.45**

Result: The score for this course is High

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = Total of Values / Total No. of Pos & PSOs	Mean Overall Score for Cos= Total of Mean Scores / Total No. of Cos

அலகு 1

குடும்ப பின்னணியும் மகாத்மாவின் தொடக்கமும் - பிறப்பும் குழந்தைப் பருவமும் - கல்வியும் குடும்ப வாழ்வும் - கற்ற பாடங்கள் - இலண்டன் அனுபவங்கள்.

அலகு 2

மகாத்மா உருவாகிறார் - தென்னாப்பிரிக்காவில் காந்தி - பாரிஸ்டரிலிருந்து மக்கள் தலைவராக - இன சமத்துவத்தை நோக்கி - குடும்ப வாழ்விலிருந்து ஆசிரம வாழ்வுக்கு - சத்தியாகிரகம் மற்றும் தீர்மானப்பணியின் தொடக்கம் - சத்திய பரிசோதனைகள்.

அலகு 3

இந்திய விடுதலைப் போராட்டத்தின் தொடக்கம் - ஆரம்ப கால எதிர்ப்புகளும் 1857 எழுச்சியும் - இந்திய தேசிய காங்கிரசின் தொடக்கம் - மிதவாதிகள், தீவிரவாதிகள் மற்றும் பயங்கரவாதிகள் - காந்தி நாட்டை புதிய திசையில் நடத்துகிறார் - ஆரம்ப வட்டார சத்தியாகிரங்கள்.

அலகு 4

மகாத்மா காந்தி இந்திய விடுதலைப் போராட்டத்தை தலைமையேற்று நடத்துகிறார் - தேசிய சத்தியாகிரங்கள் - நிர்மாணப் பணிகள் - சபர்மதியும் சேவாகிராமும் - இந்திய தேசியத்தின் பல்வேறு போக்குகள் - பிரிவினையும் விடுதலையும் - மகத்தான உயிர் தியாகம்.

அலகு 5

காந்தியைப் பற்றிய படங்கள் - கள மற்றும் வாழ்க்கை அனுபவங்கள் - உங்களது வாழ்வை பரவசப்படுத்திய, உருக்கிய மகாத்மா காந்தியின் வாழ்க்கை நிகழ்ச்சிகள்.

தாள் **II - அகிம்சையும் சர்வோதயமும் - CCHYGT02**

Code: CCHYGT02 **Hours: 1**

Credit: 1

COURSE OUTCOMES:

CO. NO	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO- 1	Gain Knowledge on Mahatma Gandhi's Non - violence	PSO - 5	As
CO-2	Discuss the Policies of Mahatma Gandhi on Truth and Action	PSO - 5	An
CO-3	Analyse Sarvodaya and Antyodaya	PSO - 5	K
CO-4	Assess the values introduced through Brahmacharya and Aparigraha	PSO - 5	Ap
CO-5	Relate violence and Truth in our day today life with the teachings of Gandhiji	PSO - 2	Ap

RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Code: CCHYGT02				தாள் **II - அகிம்சையும் சர்வோதயமும் - CCHYGT02**								**Hours: 1** **Credits: 1**
Course Outcomes	**Programme Outcomes (PO)**						**Programme Specific Outcomes (PSO)**					**Mean Score of CO's**
	1	**2**	**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	
CO - 1	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 2	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 3	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 4	5	5	5	5	5	5	4	5	4	3	3	4.45
CO - 5	5	5	5	5	5	5	4	5	4	3	3	4.45
Overall Mean Score												**4.45**

Result: The score for this course is High

Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

Values Scaling:

Mean Score of Cos = Total of Values / Total No. of Pos & PSOs	Mean Overall Score for Cos= Total of Mean Scores / Total No. of Cos

அலகு 1

அகிம்சையின் பொருள் - கொல்லாமையும் துன்பம் செய்யாமையும் - அன்பு, தொண்டு மற்றும் மன்னித்தல் - அகிம்சைச் செயல்- அமைதி வழியில் சிக்கல் தீர்வு, அகிம்சை வாழ்வியலும் நிர்மாணப்பணியும், சத்தியாகிரகம் - அகிம்சை அறவியலும் விழுமியங்களும்.

அலகு 2

உண்மை : பேருண்மையும் (முழுமை உண்மையும்) சார்பு உண்மையும்- பொய்மைகள், தவறுகள் மற்றும் குற்றங்களுக்கு அப்பால் செல்லுதல் - உண்மையும் பன்மியமம் - உண்மையும் செயலும் - உண்மையும் அகிம்சையும்.

அலகு 3

சர்வோதயமும் (அனைவரின் நலம் அனைத்து நிலைகளிலும்) அந்தியோதயமும் (கடையவர் நலன் முதலில்) - குறிக்கோளும் வழிமுறையும் - தீண்டாமை நீக்கம் - சமூக ஒற்றுமை - மகளிர் முன்னேற்றம்.

அலகு 4

வறுமை நீக்கம் : முழுமையான ஏற்புடைய வேலை வாய்ப்பு - தற்சார்பும் தன்னிறைவும், சுயராஜ்ஜியம் மற்றும் சுதேசி (அயலவரை நேசி) - புலனடக்கமும் மேன்மையாக்கமும் (பிரம்மச்சரியம்) - எளிய மற்றும் அறவியல் வாழ்வு உடைமையின்மையும், அறங்காவலர் நெறியும் - ஏற்புடைய மற்றும் முழுமை அறிவியலும் தொழில் நுட்பமும்.

அலகு 5

நமது அன்றாட வாழ்வில் அகிம்சையும் உண்மையும் பெறுமிடமும் அதனை மேம்படுத்தும் வழிகளும் - உங்களது தற்சார்பையும் தேவையில் பிறருக்கு உதவும் ஆற்றலையும் வளர்க்கும் ஏதாவது மூன்று திறன்களைக் **(Skills)** கற்றல் - அமைதி வழியில் சிக்கல் தீர்வு அனுபவங்கள் - சர்வசமய நட்புறவு, உரையாடல் மற்றும் வழிபாட்டு அனுபவம் பெறல்.

DEPARTMENT OF HINDI

PART I - HINDI - COURSE PATTERN

Part	Sem.	Code	Title of the Paper	Hours	Credits
I	I	20GH1GS01	Paper - I - Prose, Short Story and Grammar- I	5	3
	II	20GH2GS02	Paper - II - Novel, One act Play, and Grammar - II	5	3
	III	20GH3GS03	Paper - III Poetry and History of Hindi Literature, Alankar	5	3
	IV	20GH4GS04	Paper IV - General Essay, Technical Hindi, Translation, and Letter Writing	5	3
		Total		**20**	**12**

TESTING AND EVALUATION

Course	Continuous Internal Assessment	Semester Examination
Hindi	40%	60%

Continuous Internal Assessment

Continuous Assessment will be carried out by the Course Teachers. The components of CIA are as follows:

Components	Marks
Test -I	30
Test -II	30
Seminar/Quiz	10
Assignment	05
Attendance	05
Total	***80**

* The total internal marks obtained for 80 will be converted into marks obtained for 40.

HINDI - EXTERNAL QUESTION PATTERN

Time: 3 Hours **Marls: 60**

Section A: (One Word / Sentence) 10 x 1 = 10 Marks

Section B: (Paragraph / Annotation) 4 x 5 = 20 Marks

Section C: (Essay) 3x 10 = 30 Marks

PAPER I - PROSE, SHORT STORY AND GRAMMAR - I

Semester: I **Hours: 5**

Code : 20GH1GS01 **Credits: 3**

1. Prose : Naveen Hindi Patamala Part-3

Published by Dakshina Bharathi Hindi Prachar Sabha,

Thyagaraya Nagar, Chennai - 600 017.

The following Lessons have been prescribed

a) Shiraj Ki Gurubhakthi

b) Shri Krishn

c) Gupth Rupya

d) Karmaveer Kamaraj

2. Short Story : Kahani Manjari

Edited by : Dakshin Bharath Hindi Prachar Sabha,

Thyagaraya Nagar, Chennai - 600 017.

The following short stories have been priscribed

a) Badegar kee beti	-	Premchand
b) Thayee	-	Vishwamranava Shrama Kaushik
c) Paanch minute	-	Mohanlalji Mahato yogi
d) Usne Kaha tha	-	Chandra dharshama Guleri

3. Grammar 1 : Vyakaran Pradeep Published by Ramdev, Hindi Bhaan,

63, Tagore Nagarm Allahabad -2

The following topics have been prescribed

a) Noun b) Gender and Number

c) Pronoun d) Adjectives

PAPER II - NOVEL, ONE ACT PLAY AND GRAMMAR - II

Semester: II **Hours: 5**

Code : 20GH2GS02 **Credits: 3**

1. **Novel** : Nirmala (Abridged version)

   by Premchand, Hamsa Prakashan Allahabad

2. **One Act Play** : Aadarsh Ekanki

   Published by Dakshina Bharath Hindi Prachar Sabha,

   Thyagaraya Nagar, Chennai - 600 017.

   The following Ekankies have been prescribed

   a) Doosra din - Kanchanlatha sabbarval

   b) Rajpoothri Ka badla - Divjendralal Rai

3. **Grammar** : Ramdev, Published by Hindi Bhavan,

   63 Tagore Nagar, Allahabad - 2

   The following topics have been prescribed

   a) Verb

   b) Tense and Voice

   c) Adverb

   d) Prepositions

   e) Conjunctions

   f) Interjunctions

PAPER III - POETRY AND HISTORY OF HINDI LITERATURE, ALANKAR

Semester: III **Hours: 5**

Code : 20GH3GS03 **Credits: 3**

1. POETRY:

Kavya Saurab Published by Dakshina Bharatha Hindi Prachar Sabha, T. Nagar, Chennai - 600 017.

The following poems have been prescribed

1. Sachche Devtha - Ayodhya Singh Upadhyay Harioudh
2. Murjhaphool
3. Vivshtha
4. Badal - Sumitranandan Panth
5. Vasanth Aayaa
6. Deep Koi jal raha hai
7. Kabir Ke Dohe - 5 numbers
8. Tulasi Ke Dohe - 5 numbers
9. Raheem Ke Dohe - 5 numbers
10. Bihari Ke Dohe - 5 numbers

2. HISTORY OF HINDI LITERATURE:

Hindi Sahitya Ka Ithas by Rajanath Sharma Vinod Pushhak Mandir, Agra - 2

The following topics have been prescribed Salient features of Aadikl Bakthikal (Gyan marg, Premmag, Rambakthi, Krishnabakthi and Reethika.

Short Notes from Adunikkal**:** Chayavad, Pragathivad, Mythili Sharan, Gupta, Dinkar Premchand Pant Prasad, Ramachandra Shukla

3. ALANKAR:

Ras chand Alankar Chandrika Karnataka Mahila Hindi Seva Samithi, Chamarajpet, Bangalore - 560 008. The following Alankars have been prescribed Anupras, Yamak, Vakrokthi, Upama, Virodabhas.

PAPER - IV - GENERAL ESSAY, TECHNICAL HINDI, TRANSLATION AND LETTER WRITING

Semester: IV **Hours: 5**

Code : 20GH4GS04 **Credits: 3**

1. General Essay:

Nibandh Praveshika, Dakshin Bharath Hindi Prachar Sabha T.Nagar, Chennai - 600 017

The following Sahityotar (General) essay have been prescribed

a. Anushashan
b. Parishram Ka Mahatva
c. Paropkar
d. Bharat Ki Kalatmak Ekta
e. Nari Ka Karthavye Aur Adhikaar

2. Translation: Anuvad Abyas - III (1-5 Lessons) English to Hindi, Hindi to English Published by Dakshina Bharath Hindi Prachar Sabha T.Nagar, Chennai - 600 017.

3. Technical Hindi: Karyalaya Sahayika, Kendriya Sachivalaya Hindi Parishad NewDelhi, Hindi Vathayan Dr. K. Chandra Mohan, Viswa Vidyalaya Prakashan Varanashi

Banking Terms	:	50 only
Nemikaryalaya Tippani	:	50 only
Name of the Ministries	:	33 only

4. Letter Writing: Pramanik Alekan Aur Tippan Prof Viraj M.A. Kashmirgate, Delhi - 110 006

PaariVarik Patra, Avedan Patra, Sampathak ke naam Patra, Padhadhikariyon ke naam Patra