

ANNEXURE 18D03

V.V. VANNIAPERUMAL COLLEGE FOR WOMEN



(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

**CHOICE BASED CREDIT SYSTEM
REGULATIONS AND SYLLABUS
(with effect from Academic Year 2018 - 2019)**

V.V. Vanniaperumal College for Women, Virudhunagar, established in 1962, offers 19 UG Programmes, 14 PG Programmes, 6 M.Phil. Programmes and 3 Ph.D. Programmes. All these programmes, except Ph.D. Programmes, have been framed as per the guidelines given by UGC under Choice Based Credit System (CBCS).

The Departments of Commerce, English and History upgraded as Research Centres offer Ph.D. Programmes as per the norms and regulations of Madurai Kamaraj University, Madurai and do not come under the purview of CBCS.

CHOICE BASED CREDIT SYSTEM (CBCS)

Choice based credit system is followed as per the guidelines formulated by the UGC. The CBCS provides an opportunity for the students to choose courses from the prescribed courses comprising Core, Elective and Skill Enrichment Courses. The performance of students is evaluated based on the uniform grading system. The uniform grading system will also enable potential employers in assessing the performance of the candidates. Computation of the Cumulative Grade Point Average (CGPA) is made to ensure uniformity in evaluation system.

List of Programmes in which CBCS/Elective Course System is implemented

UG PROGRAMMES

- | | | |
|--------------------------|---|--|
| Arts & Humanities | : | History (E.M. & T.M.), English and Tamil |
| Physical & Life Sciences | : | Mathematics, Zoology, Chemistry, Physics, Biochemistry, Home Science - Nutrition and Dietetics, Costume Design and Fashion, Microbiology, Biotechnology, Computer Science, Information Technology and Computer Applications. |
| Commerce & Management | : | Commerce, Commerce with Computer Applications, Commerce with Professional Accounting, Business Administration. |

PG PROGRAMMES

Arts & Humanities	:	History, English, Tamil.
Physical & Life Sciences	:	Mathematics, Physics, Biochemistry, Food Processing & Quality Control, Chemistry, Zoology, Computer Science, Information Technology, Computer Applications (MCA*)
Commerce & Management	:	Commerce, Business Administration (MBA*)

* AICTE approved Programmes

PRE-DOCTORAL PROGRAMMES (M.Phil.)

Arts & Humanities	:	History, English, Tamil
Physical & Life Sciences	:	Mathematics, Biochemistry
Commerce & Management	:	Commerce

OUTLINE OF CHOICE BASED CREDIT SYSTEM (UG)

1. Core Courses
2. Elective Courses
 - 2.1. Discipline Specific Elective Courses (DSEC)
 - 2.2. Dissertation / Project
3. Non Major Elective Courses (NMEC)
4. Generic Elective Courses (GEC)
5. Ability Enhancement Courses (AEC)
 - 5.1 Ability Enhancement Compulsory Courses (AECC)
 - 5.2. Skill Enhancement Courses (SEC)

List of Non Major Elective Courses (NMEC) offered

UG PROGRAMMES

Name of the Course	Semester	Department
Indian National Movement (A.D 1885-1947)	III	History(EM)
இந்திய Njrpய இயக்கம் (கி.பி. 1885 – 1947)	III	History (TM)
Constitution of India	IV	History(EM)
இந்தியாவில் அரர்பயல் அமைப்பு	IV	History(TM)
Communication Skills-I	III	English
Communication Skills-II	IV	
இக்காலநீதி இலக்கியம்	III	Tamil
உரைநடை இலக்கியம்	IV	
Basic Hindi - I	III	Hindi
Basic Hindi - II	IV	
Practical Banking	III	Commerce
Basic Accounting Principles	IV	
Business Management	III	Business Administration
Entrepreneurship Development	IV	
Quantitative Aptitude – I	III	Mathematics
Quantitative Aptitude - II	IV	
Physics in Everyday life	III	Physics
Digital Electronics	IV	
Industrial Chemistry-I	III	Chemistry
Industrial Chemistry-II	IV	
Applied Zoology	III	Zoology
Animal Science	IV	
Basic Food Science	III	Home Science – Nutrition and Dietetics
Basic Nutrition and Dietetics	IV	
Women and Health	III	Biochemistry
Life style associated disorders	IV	
Medical Lab Technology	III	Microbiology
Applied Microbiology	IV	
Infectious Diseases	III	Biotechnology
Organic Farming	IV	
Basics of Fashion	III	Costume Design And Fashion
Interior Designing	IV	
Introduction to Computers and Office Automation	III	Computer Science
Introduction to Internet and HTML 5	IV	
Computer Fundamentals and E-mail	III	Information Technology
Introduction to HTML	IV	
Fundamentals of Computers	III	Computer Applications
Web Design with HTML	IV	
Horticulture – I	III	Botany
Horticulture – II	IV	
மருத்துவ தாவரவியல் - I	III	
மருத்துவ தாவரவியல் - II	IV	
Library and Information Science – I	III	Library Science
Library and Information Science - II	IV	

List of Generic Elective Courses (GEC) Offered

GENERIC ELECTIVE COURSES – 1

1. Human Rights/
2. Women Studies

GENERIC ELECTIVE COURSES – 2

1. Constitution of India/
2. Modern Economics/
3. Adolescent Psychology/
4. Disaster Management

ABILITY ENHANCEMENT COMPULSORY COURSES (AECC)

1. Environmental Studies
2. Value Education

ELIGIBILITY FOR ADMISSION

Candidate should have passed the Higher Secondary Examination with 10+2 pattern conducted by the Board of Higher Secondary Education, Govt. of Tamil Nadu or any other examination accepted by the Syndicate as equivalent thereto and the candidate should have studied +2 level Mathematics in the 10+2 pattern.

DURATION OF THE PROGRAMME

The candidates shall undergo the prescribed course of study for a period of three academic years (six semesters)

MEDIUM OF INSTRUCTION

English

COURSES OFFERED

Part I : Tamil/Hindi

Part II : English

Part III : Core Courses

Elective Courses: Discipline Specific Electives Courses

Allied Courses: 1. Digital Electronics

2. Mathematics

Part IV: Non-Major Elective Courses (NMEC)

Generic Elective Courses (GEC)

Ability Enhancement Compulsory Courses (AECC)

Skill Enhancement Courses (SEC)

Part V: National Service Scheme, Physical Education, Youth Red Cross Society, Red Ribbon Club, Science Forum, Eco Club, Library and Information Science, Consumer Forum, Health and Fitness Club

EVALUATION SCHEME

Components	Internal Assessment Marks	External Examination Marks	Total Marks
Theory	25	75	100
Practical	40	60	100

PART III - Core Courses, Discipline Specific Elective Courses & Allied Courses**INTERNAL ASSESSMENT****Distribution of Marks****Theory**

Mode of Evaluation		Marks
Periodic Test	:	15
Assignment	:	5
Quiz	:	5
Total	:	25

Three Periodic Tests - Average of the best two will be considered

Two Assignments - Better of the two will be considered

Three Quiz Tests - Best of the three will be considered

Practical

Mode of Evaluation		Marks
Three tests (Best two average)	:	30
Performance	:	5
Record	:	5
Total	:	40

Question Pattern for Periodic Tests**Duration: 2 Hours**

Section	Type of Question	No. of Questions	No. of Questions to be answered	Marks for each question	Total Marks
A Q. No.(1- 4)	Multiple choice	4	4	1	4
B Q. No.(5 - 7)	Either or type	3	3	7	21
C Q. No.(8-10)	Open Choice	3	2	10	20
Total					45

EXTERNAL EXAMINATION**For Core Courses, Discipline Specific Electives Courses and Allied Courses****Question Pattern for External Examination****Duration: 3 Hours**

Section	Type of Question	No. of Questions	No. of Questions to be answered	Marks for each question	Total Marks
A Q. No.(1- 10)	Multiple choice (At least Two question from each unit)	10	10	1	10
B Q. No.(11 -15)	Either or type (one set from each unit)	5	5	7	35
C Q. No.(16-20)	Open Choice (one from each unit)	5	3	10	30
Total					75

CORE COURSES ASSESSMENT

Online Test will be conducted for the Core Courses in V & VI Semester.

Multiple Choice questions Pattern will be followed.

PART IV - Skill Enhancement Courses and Non Major Elective Courses

INTERNAL ASSESSMENT**Distribution of Marks****Theory**

Mode of Evaluation		Marks
Periodic Test	:	25
Assignment	:	10
Quiz	:	5
Total	:	40

- Three Periodic tests - Average of the best two will be considered
 Two Assignments - Better of the two will be considered
 Three Quiz Tests - Best of the three will be considered

Question Pattern**Duration: 1 Hour**

Section	Type of Question	No. of Questions	No. of Questions to be answered	Marks for each Question	Total Marks
A Q. Nos.1- 4	Open Choice	4	3	5	15
B Q. Nos.5- 6	Open Choice	2	1	10	10
Total					25

EXTERNAL EXAMINATION**Question Pattern****Duration: 2 Hours**

Section	Type of Question	No. of Questions	No. of Questions to be answered	Marks for each Question	Total Marks
A Q. Nos.1- 8	Open Choice	8	6	5	30
B Q. Nos.9- 13	Open Choice	5	3	10	30
Total					60

PART IV - Generic Electives and Ability Enhancement Compulsory Courses

- Assessment by Internal Examiner only
- Model Examination is conducted after two periodic tests.
- Book and Study Material prepared by the Faculty Members of the respective departments will be prescribed.

ASSESSMENT PATTERN

Mode of Evaluation		Marks
Periodic Test	:	30
Assignment	:	10
Model Examination	:	60
Total	:	100

Two Periodic tests - Better of the two will be considered

Two Assignments - Better of the two will be considered

Question Pattern for Periodic Test**Duration: 1 Hour**

Section	Type of Question	No. of Questions	No. of Questions to be answered	Marks for each Question	Total Marks
A Q. Nos.1- 4	Open Choice	4	3	6	18
B Q. Nos.5- 6	Open Choice	2	1	12	12
Total					30

Question Pattern for Model Examination**Duration: 2 Hours**

Section	Type of Question	No. of Questions	No. of Questions to be answered	Marks for each Question	Total Marks
A Q. Nos.1- 8	Open Choice	8	5	6	30
B Q. Nos.9- 13	Open Choice	5	3	10	30
Total					60

ELIGIBILITY FOR THE DEGREE

1. The candidate will not be eligible for degree without completing the prescribed Courses of study and a minimum Pass marks in all the Courses.
2. Attendance, progress and conduct certification from the Head of the Institution will be required for the students to write the examination.
 - No Pass minimum for Internal Assessment.
 - Pass minimum for External Examination is 27 marks out of 75 marks for Core Courses, Allied Courses and Discipline Specific Elective Courses.
 - Pass minimum for External Examination is 21 marks out of 60 marks for Non Major Elective Courses and Skill Enhancement Courses.
 - The aggregate minimum pass percentage is 40.
 - Pass minimum for External Practical Examination is 21 marks out of 60 marks.
 - Pass minimum for Generic Elective Course and Ability Enchantment Compulsory Course is 40.

ATTENDANCE

The following rules are applicable to the students of all UG, PG and M.Phil. Programmes with effect from 2018-2019.





- a) The students with an attendance of 85% and above are permitted to appear for the Summative Examinations without any condition.
- b) The students with 78% - 84 % of attendance are permitted to appear for the Summative Examinations by paying a fine of ₹500/-
- c) The students with 66% - 77% of attendance can appear for the Summative Examinations only after getting special permission from the Principal. Special permission shall be granted by the Principal only on medical grounds and those students should also pay a fine of ₹1000/- along with the application form for exemption. If permission is not granted, they have to appear for the Summative Examinations in the next Semester by paying a fine of ₹1000/-
- d) The students who have less than 65% of attendance cannot appear for the Summative Examinations and have to repeat the whole semester.
- e) For Part V Courses, the students require 75% of attendance to get the required credit.
- f) For Certificate, Diploma, Advanced Diploma and Post Graduate Diploma Programmes, the students require 75% of attendance to appear for the Theory/Practical Examinations.

**BACHELOR OF INFORMATION TECHNOLOGY
PROGRAM CODE - 2025**

PROGRAMME OUTCOMES

- Encourage intellectually disciplined process of thinking in analyzing, synthesizing, evaluating and applying scientific concepts.
- Develop good rapport with fellow-beings through efficient oral, written and technical communication.
- Connect with the society to transform ideas into action.
- Volunteer support in spreading scientific temperament and stand for the national cause in all core issues.
- Uphold the values and beliefs inherent in the nation's tradition and culture.
- Strive to preserve nature in all forms for a sustainable future.
- Develop an independent and self-disciplined specialized learning in tune with the changing socio-technological scenario

PROGRAMME SPECIFIC OUTCOMES

-  Prepare the students to manage the hardware and software components in a computer independently
-  Professionalize the students in Programming skills.
-  Prepare the students to be Professional Software Engineers.
-  Impart knowledge of software managed in a computer.

V.V. VANNIAPERUMAL COLLEGE FOR WOMEN



(Belonging to Virudhunagar Hindu Nadars)
An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai
Re-accredited with 'A' Grade (3rd Cycle) by NAAC
VIRUDHUNAGAR - 626 001

PART I-TAMIL

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1.	I	18UTAG11	தாள்: 1 பொதுத்தமிழ்	3	100
2.	II	18UTAG21	தாள்: 2 பொதுத்தமிழ்	3	100
3.	III	18UTAG31C	fzpdp jkpoĒ I	3	100
4.	IV	18UTAG41C	fzpdp jkpoĒ II	3	100
Total				12	400

PART I –HINDI

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1.	I	18UHGD11	Prose – I & II, Ekganki - I, Short stories, Functional Hindi – I & Grammar	3	100
2.	II	18UHGD21	Drama, Ekganki – II, Letter Correspondence, Functional Hindi-II & Grammar	3	100
3.	III	18UHGD31	Ancient poetry, Drama, Indian History, Poetics and functional Hindi-III	3	100
4.	IV	18UHGD41	Modern poetry, History of Modern Hindi Literature and functional Hindi -IV	3	100
TOTAL				12	400

PART II

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1.	I	18UENG11A	English for Advanced Learners I	3	100
		18UENG11B	English for Career Guidance - I		
		18UENG11C	English for Communicative Competence-I		
2.	II	18UENG21A	English for Advanced Learners II	3	100
		18UENG21B	English for Career Guidance - II		
		18UENG21C	English for Communicative Competence - II		
3.	III	18UENG31A	English for Advanced Learners III	3	100
		18UENG31B	English for Career Guidance – III		
		18UENG31C	English for Communicative Competence - III		
4.	IV	18UENG41A	English for Advanced Learners IV	3	100
		18UENG41B	English for Career Guidance – IV		
		18UENG41C	English for Communicative Competence - IV		
TOTAL				12	400

PART III – CORE COURSES, DISCIPLINE SPECIFIC ELECTIVE COURSES

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1	I	18UITC11	Introduction to IT and Programming in C	4	100
2	I	18UITC11P	Programming in C lab	3	100
3	II	18UITC21	Advanced Concepts in C and Data Structures	4	100
4	II	18UITC21P	Data structures lab using C	3	100
5	III	18UITC31	Data Base Management Systems	4	100
6	III	18UITC32	Computer organization	3	100
7	III	18UITC31P	RDBMS Lab	2	100
8	IV	18UITC41	PHP and MYSQL	4	100
9	IV	18UITC41P	Web Design using PHP Lab	2	100
10	V	18UITC51	Java Programming	5	100
11	V	18UITC52	Operating Systems	5	100
12	V	18UITC53	Computer Algorithms	5	100
13	V	18UITC51P	Java Programming lab	2	100
14	V	18UITO51	Core Course Assessment-Online	1	50
15	V	18UITE51/ 18UITE52/ 18UITE53	System Software/ Client/Server Computing/ Microprocessor and Assembly Language	4	100
16	V	18UITE51P/ 18UITE52P	VB.NET Lab/ Visual Basic Lab	2	100
17	VI	18UITC61	Mobile Computing	5	100
18	VI	18UITC62	Computer Networks	5	100
19	VI	18UITC63	Software Engineering	5	100
20	VI	18UITC61P	Android Lab	2	100
21	VI	18UITO61	Core Course Assessment-Online	1	50
22	VI	18UITE61/ 18UITE62/ 18UITE63	Computer Graphics/ Data Mining/ Embedded System	4	100
23	VI	18UITE61PR	Project	2	100
Total				77	2200

PART III – ALLIED COURSES

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1.	I	18UITA11	Digital Principles and Applications	4	100
2.	II	18UITA21	Discrete Mathematics	4	100
3.	III	18UITA31	Numerical Methods	4	100
4.	IV	18UITA41	Resource Management Techniques	4	100
Total				16	400

PART IV – SKILL ENHANCEMENT COURSES

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1.	I	18UITS11P	Hardware Simulator Lab	2	100
2.	II	18UITS21	Object Oriented Programming in C++	2	100
3.	II	18UITS21P	Object Oriented Programming using C++ Lab	2	100
4.	IV	18UITS41	Numerical Aptitude	2	100
5.	IV	18UITS41P	Multimedia Lab	2	100
6.	VI	18UITS61P	Python Programming Lab	2	100
Total				12	600

PART IV – NON MAJOR ELECTIVE COURSES

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1	III	18UITN31	Computer Fundamentals and E-mail	2	100
2	IV	18UITN41	Introduction to HTML	2	100
Total				4	200

**PART IV–GENERIC ELECTIVE AND ABILITY ENHANCEMENT
COMPULSORY COURSES**

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1	I	18UGVE11	Value Education	2	100
2	III	18UGHR31	Human Rights	1	100
		18UGWS32	Women studies		
3	IV	18UGEC41/	Constitution of India/	1	100
4		18UGEM42/	Modern Economics/		
6		18UGEA43/	Adolescent Psychology/		
7		18UGED44	Disaster Management		
8			Extension Activities		
9	V	18UGES51	Environmental Studies	2	100
Total				7	400

PART –V - EXTENSION ACTIVITIES

S.No.	Sem.	Code	Extension Activity	Credit
1	I, II, III & IV	18UVNS1	National Service Scheme	1
2		18UVNS2	Physical Education	
3		18UVYR1 18UVYR2	Youth Red Cross Society	
4		18UVRR1	Red Ribbon Club	
5		18UVSF1	Science Forum	
6		18UVEC1	Eco Club	
7		18UVLI1	Library and Information Science	
8		18UVCC1	Consumer Forum	
9		18UVHF1	Health and Fitness Club	



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

INFORMATION TECHNOLOGY (UG)

Course Structure - Allotment of Hours and Credits

For those who join in the Academic Year 2018 - 2019 and after

Components	Semester						Total Number of Hours / Credits
	I	II	III	IV	V	VI	
Part I : Tamil /Hindi	6 (3)	6 (3)	5(3)	5 (3)	-	-	22(12)
Part II : English	6(3)	6(3)	6(3)	6 (3)	-	-	24(12)
Part III : Core, Allied and DSEC Courses:							
Core Course	5(4)	5(4)	4(4)	4(4)	5(5)	5 (5)	28(26)
Core Course	-	-	4(3)	-	5 (5)	5 (5)	14(13)
Core Course	-	-	-	-	5 (5)	5 (5)	10(10)
Core Practical	5 (3)	5 (3)	4 (2)	4 (2)	5 (2)	4 (2)	27(14)
Core Courses Assessment - Online	-	-	-	-	0 (1)	0 (1)	0 (2)
Allied Course	4 (4)	4 (4)	4 (4)	4 (4)	-	-	16(16)
DSEC	-	-	-	-	4 (4)	5 (4)	9 (8)
DSEC Practical	-	-	-	-	4 (2)	4 (2)	8 (4)
Part IV : Non Major Elective and Value Added Courses:							
Value Education	2 (2)	-	-	-	-	-	2 (2)
Environmental Studies	-	-	-	-	2 (2)	-	2 (2)
Non Major Elective	-	-	2 (2)	2 (2)	-	-	4 (4)
Generic Elective	-	-	1(1)	1(1)	-	-	2(2)
SEC	2 (2)	2 (2)	-	2 (2)	-	2 (2)	8 (8)
SEC	-	2 (2)	-	2 (2)	-	-	4 (4)
Part V – Extension Activities NSS/ Physical Education/YRC/ RRC/ Science Forum/ ECO Club/ Library and Information Science/ Consumer Club/ Fitness Club	-	-	-	0 (1)	-	-	0 (1)
Total	30 21)	30(21)	30 (22)	30 (24)	30(26)	30 26)	180(140)

DSEC: Discipline Specific Elective Course

SEC: Skill Enhancement Course

V.V. VANNIAPERUMAL COLLEGE FOR WOMEN



(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. INFORMATION TECHNOLOGY

SEMESTER I

S.No.	Components	Title of the Course	Course Code	Hours per week	Credits	Exam. Hours	Marks			
							Int.	Ext.	Total	
1	Part I	Tamil / Hindi Course I	18UTAG11/ 18UHDG11	6	3	3	25	75	100	
2	Part II	English Course I	18UENG11	6	3	3	25	75	100	
3	Part III	Core Course 1	Introduction to IT and Programming in C	18UITC11	5	4	3	25	75	100
4		Core Practical 1	Programming in C Lab	18UITC11P	5	3	3	40	60	100
5		Allied Course 1	Digital Principles and Applications	18UITA11	4	4	3	25	75	100
6	Part IV	SEC Practical 1	Hardware Simulator Lab	18UITS11P	1 T*+1P'	2	2	40	60	100
7		AECC – 1	Value Education	18UGVE11	2	2	-	100	-	100
Total				30	21				700	

T* - Tutorial P' - Practical

B.Sc. INFORMATION TECHNOLOGY - SEMESTER II

S.No.	Components	Title of the Course	Course Code	Hours per week	Credits	Exam. Hours	Marks			
							Int.	Ext.	Total	
1	Part I	Tamil / Hindi Course II	18UTAG21/ 18UHDG21	6	3	3	25	75	100	
2	Part II	English Course II	18UENG21	6	3	3	25	75	100	
3	Part III	Core Course 2	Advanced Concepts in C and Data Structures	18UITC21	5	4	3	25	75	100
4		Core Practical 2	Data Structures using C Lab	18UITC21P	5	3	3	40	60	100
5		Allied Course 2	Discrete Mathematics	18UITA21	4	4	3	25	75	100
6	Part IV	SEC 1	Object Oriented Programming in C++	18UITS21	2	2	2	40	60	100
7		SEC Practical 2	Object Oriented Programming using C++ Lab	18UITS21P	1 T*+1P'	2	2	40	60	100
Total				30	21				700	

B.Sc. INFORMATION TECHNOLOGY - SEMESTER III

S.No.	Components	Title of the Course	Course Code	Hours per week	Credits	Exam. Hours	Marks			
							Int.	Ext.	Total	
1	Part I	Tamil / Hindi Course III	18UTAG31C/ 18UHDG31	5	3	3	25	75	100	
2	Part II	English Course III	18UENG31	6	3	3	25	75	100	
3	Part III	Core Course 3	Data Base Management Systems	18UITC31	4	4	3	25	75	100
4		Core Course 4	Computer Organization	18UITC32	4	3	3	25	75	100
5		Core Practical 3	RDBMS Lab	18UITC31P	4	2	3	40	60	100
6		Allied Course 3	Numerical Methods	18UITA31	4	4	3	25	75	100
7	Part IV	NMEC 1	Computer Fundamentals and E-mail	18UITN31	2	2	2	40	60	100
8		GEC 1	1.Human Rights/ 2. Women Studies	18UGHR31 18UGWS32	1	1	2	100	-	100
		GEC 2	1. Constitution of India/ 2. Modern Economics/ 3. Adolescent Psychology/ 4. Disaster Management	18UGEC41/ 18UGEM42/ 18UGEA43/ 18UGED44	1	-	-	-	-	-
Total				31	22				800	

B.Sc. INFORMATION TECHNOLOGY - SEMESTER IV

S.No.	Components	Title of the Course	Course Code	Hours per week	Credits	Exam. Hours	Marks			
							Int.	Ext.	Total	
1	Part I	Tamil / Hindi Course IV	18UTAG41C/ 18UHDG41	5	3	3	25	75	100	
2	Part II	English Course IV	18UENG41	6	3	3	25	75	100	
3	Part III	Core Course 5	PHP and MYSQL	18UITC41	4	4	3	25	75	100
4		Core Practical 4	Web Design using PHP Lab	18UITC41P	4	2	3	40	60	100
5		Allied Course 4	Resource Management Techniques	18UITA41	4	4	3	25	75	100
6	Part IV	SEC 3	Numerical Aptitude	18UITS41	2	2	2	40	60	100
7		SEC Practical 2	Multimedia Lab	18UITS41P	1T*+1P'	2	2	40	60	100
8		NMEC 2	Introduction to HTML	18UITN41	2	2	2	40	60	100
9		GEC 2	1. Constitution of India 2. Modern Economics 3. Adolescent Psychology 4. Disaster Management	18UGEC41 18UGEM42 18UGEA43 18UGED44	1	1	2	100	-	100
	Part V	Extension Activity		-	1		-			
Total				30	24		900			

B.Sc. INFORMATION TECHNOLOGY - SEMESTER V

S.No.	Components	Title of the Course	Course Code	Hours per week	Credits	Exam. Hours	Marks			
							Int.	Ext.	Total	
1	Part III	Core Course 6	Java Programming	18UITC51	5	5	3	25	75	100
2		Core Course 7	Operating Systems	18UITC52	5	5	3	25	75	100
3		Core Course 8	Computer Algorithms	18UITC53	5	5	3	25	75	100
4		Core Practical 5	Java Programming Lab	18UITC51P	5	2	3	40	60	100
5		DSEC 1	System Software/ Client/Server Computing/ Microprocessor and Assembly Language Programming	18UITE51/ 18UITE52/ 18UITE53	4	4	3	25	75	100
6		DSEC Practical 1	VB.Net Lab/ Visual Basic Lab	18UITE51P/ 18UITE52P	4	2	3	40	60	100
		Online Courses	Core Courses Assessment – Online	18UITO51	–	1	–	50	-	50
7	Part IV	AECC 2	Environmental Studies	18UENV51	2	2	2	100		100
				Total	30	26				750

SEMESTER VI

S.No.	Components	Title of the Course	Course Code	Hours per week	Credits	Exam. Hours	Marks			
							Int.	Ext.	Total	
1	Part III	Core Course 9	Mobile Computing	18UITC61	5	5	3	25	75	100
2		Core Course 10	Computer Networks	18UITC62	5	5	3	25	75	100
3		Core Course 11	Software Engineering	18UITC63	5	5	3	25	75	100
4		Core Practical 6	Android Lab	18UITC61P	4	2	3	40	60	100
5		DSEC 2	Computer Graphics/ Data Mining/ Embedded System	18UITE61/ 18UITE62/ 18UITE63	5	4	3	25	75	100
6		DSEC Practical 2	Project	18UITE61PR	4	2	3	100	-	100
7	Part IV	SEC Practical 3	Python Programming Lab	18UITS61P	1 T*+1P'	2	2	40	60	100
			Core Course Assessment – Online	18UITO61	-	1	-	50	-	50
Total					30	26				750



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. INFORMATION TECHNOLOGY (SEMESTER) (2018 -19 onwards)

Semester I	INTRODUCTION TO IT AND PROGRAMMING IN C	Hours/Week: 5	
Core Course 1		Credits: 4	
Course Code 18UITC11		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- have fundamental knowledge on Information Technology.
- know the concepts and programming logic.
- acquire programming skill.
- knowledge about Control Statements.
- understand the concepts of Arrays.
- know about User defined Functions.

UNIT I

Information Technology Today – An Overview: Information Technology – An Introduction – Information Systems – Software and Data – IT in Business Industry – IT in the Home and Play – IT in Education and Training – IT in Entertainment and the Arts – IT in Science, Engineering and Math.

Overview of C: History of C – Importance of C – Basic structure of C – Programming style – Executing a 'C' Program. (15 Hours)

UNIT II

Constants, Variables and Data types: 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 – Overflow and Underflow of Data.

Operators and Expressions: Arithmetic Operators - Relational Operators - Logical Operators – Assignment Operators - Increment and Decrement Operators – Conditional Operators - Bitwise Operators - Special Operators – Arithmetic Expression – Evaluation of Expressions – Precedence of Arithmetic Operators – Type Conversions in Expression – Operator Precedence and Associativity – Mathematical functions.

(10 Hours)

UNIT III

Managing Input and Output Operations: Reading a Character – Writing a Character- Formatted Input- Formatted Output.

Decision Making and Branching: Simple If statement – The If...Else Statement – Nesting of If ...Else Statement – The Else if Ladder – The Switch Statement – The ?: Operator –The GOTO Statement.

Decision Making and Looping: The while Statement – The do Statement – The for Statement.

(20 Hours)

UNIT IV

Arrays: One-Dimensional Arrays – Declaration of One-Dimensional Arrays - Initialization of One-Dimensional Arrays – Two-Dimensional Arrays – Initialization of Two Dimensional Arrays – Multi Dimensional Arrays.

Character Arrays and Strings: Declaring and Initializing String Variables – Reading Strings from Terminal – Writing String to Screen –Arithmetic Operations on Characters –Putting Strings Together –Comparison of two Strings- String Handling Function.

(15 Hours)

UNIT V

User Defined functions: Elements of User Defined Functions - Definition of Functions – Return Values and Their Types – Function Calls – Function Declaration – Category of Functions –No Arguments and No Return Values - Arguments but No Return Values - Arguments with Return Values - No Arguments but Returns a Value - Nesting of Functions – Recursion.

(15 Hours)

TEXT BOOKS

1. Dennis Curtin, *Information Technology, The Breaking Wave*, 23rd Reprint, Tata McGraw-Hill publication.
2. Balagurusamy.E (2010), *Programming in ANSI C*, Edition 6, Tata McGraw-Hill Publishing Company.

UNIT	CHAPTER	SECTION
I	In book 1 – 2	2.1 – 2.8
	In book 2 – 1	1.1,1.2, 1.8-1.10
II	In book 2 – 2,3	2.2-2.14 , 3.2-3.12, 3.14-3.16
III	In book 2 – 4, 5, 6	4.2-4.5, 5.3-5.9, 6.2-6.4
IV	In book 2 – 7 ,8	7.2-7.7, 8.2- 8.8
V	In book 2 – 9	9.4-9.13, 9.15, 9.16

REFERENCE BOOKS

1. Byron S. Gottfried (2006), *Programming with C*, Second Edition, McGraw Hill.
2. Rajaraman.V (2018), *Introduction to Information Technology*, Third Edition, PHI Learning Ltd.,.
3. Reema Thareja (2015), *Introduction to C Programming*, Second Edition, Oxford University Press.



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. INFORMATION TECHNOLOGY (SEMESTER) (2018 -19 onwards)

Semester I	PROGRAMMING IN C LAB	Hours/Week: 5	
Core Practical 1		Credits: 3	
Course Code 18UITC11P		Internal 40	External 60

1. Write a program to find
 - a. Largest number
 - b. reverse of a given number
 - c. factorial of a given number
2. Write a program to convert
 - a. decimal to binary
 - b. binary to decimal
3. Write a program to check whether given number is perfect or not.
4. Write a program to calculate sum of digits.
5. Write a program to read the text and count the number of vowels, Constants and digits in it.
6. Write a program to check whether given number is prime or not.
7. Write a program to check whether given number is Armstrong or not.
8. Write a program to find the sum, average, standard deviation for the given n numbers using switch case.
9. Write a program to count the positive, negative and zeros among n numbers using one dimensional array.
10. Write a program to check whether given string is palindrome or not using one dimensional array.
11. Write a program to perform matrix addition, subtraction, multiplication using two dimensional array.

12. Write a program to sort the list of names and sort the list of integers in ascending order using functions.
13. Write a program to find the factorial of a given number using functions
14. Write a program to find sum of series using functions
15. Write a program to reverse the text using recursion concept.



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. INFORMATION TECHNOLOGY (SEMESTER)

(2018-19 onwards)

Semester I	DIGITAL PRINCIPLES AND APPLICATIONS	Hours/Week: 4	
Allied Course 1		Credits: 4	
Course Code 18UITA11		Internal 25	External 75

COURSE OUTCOMES

On Completion of this course, the students will be able to

- convert binary to decimal, octal and hexadecimal
- give strong foundation on circuit analysis
- understand flip flops, Timers and clocks.
- understand the Register and Counter.

UNIT I

Number Systems and Codes: Introduction - Number system - Floating point Representation of Numbers - Arithmetic Operation - 1's and 2's Complements - 9's Complement - 10's Complement-Binary Coded Decimal(BCD) - Codes. (15 Hours)

UNIT II

Boolean Algebra and Minimization Techniques: Introduction - Development of Boolean Algebra - Boolean Logic Operations - Basic Laws of Boolean Algebra - Demorgan's Theorems - Sum of Products and Product of Sums - Karnaugh Map.

(15 Hours)

UNIT III

Logic Gates: Introduction - Positive and Negative Logic Designation - Logic Gates.

Arithmetic Circuits: Introduction - Procedure for the Design of Combinational Circuits - Half-Adder - Full-Adder - K-Map Simplification - Half- Subtractor- Full-Subtractor.

(10 Hours)

UNIT IV

Combinational Circuits: Introduction - Multiplexers (Data Selectors) – Demultiplexers (Data Distributors) – Decoders – Encoders - Parity Generators/Checkers.

Flip-Flops: Introduction – Latches - Flip-Flops - S-R Flip-Flop - D Flip-Flop - J-K Flip-Flop - T Flip-Flop. (15 Hours)

UNIT V

Counters: Introduction - Asynchronous (Ripple or Serial) Counter - Ripple Counter with Decoded Outputs - Asynchronous Down Counter - Up-Down Counter.

Registers: Introduction - Shift Registers. (10 Hours)

TEXT BOOK

S.Salivahanan & S.Arivazhagan (2009), *Digital Circuits and Design*, Third Edition, Vikas Publishing House Pvt. Ltd.

UNIT	CHAPTER	SECTIONS
I	1	1.1 - 1.9
II	2	2.1 - 2.7
III	3, 5	3.1 - 3.3, 5.1 - 5.7
IV	6, 7	6.1, 6.2, 6.4(6.4.1&6.4.2), 6.5(6.5.1, 6.5.2, 6.5.6, 6.5.9), 6.7(6.7.1, 6.7.2), 6.8, 7.1 - 7.7
V	8,9	8.1-8.3, 8.6, 8.7, 9.1, 9.2(9.2.1, 9.2.3, 9.2.5, 9.2.7)

REFERENCE BOOKS

1. Tocci R.J Widmer. N. S, *Digital Systems: Principles and Applications*, Eighth edition, Pearson Education Pvt., Ltd.
2. Albert Paul Malvino & Donald P.Leach, GoutamSaha (2011), *Digital Principles and Applications*, Seventh Edition, Tata McGraw-Hill, New Delhi.
3. Floyd, *Digital Fundamentals*, 8/e, Pearson Education.



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. INFORMATION TECHNOLOGY (SEMESTER) (2018-19 Onwards)

Semester I	HARDWARE SIMULATOR LAB	Hours/Week: 2	
SEC Practical 1		Credits: 2	
Course Code 18UITS11P		Internal 40	External 60

1. Design a AND, OR, NOT gates
2. Design an Universal gates
3. Design a Half Adder
4. Design a Full Adder
5. Design a Half Subtractor
6. Design a Full Subtractor
7. Design a Flip flops
8. Design a Shift Registers
9. Design a Counters

V.V. VANNIAPERUMAL COLLEGE FOR WOMEN



(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

Semester I	VALUE EDUCATION (2018-19 Onwards)	Hours/Week: 2	
Ability Enhancement Compulsory Course		Credits: 2	
Course Code 18UGVE11		Internal 100	External -

COURSE OUTCOMES

On completion of the course, the students will be able to

- instill moral values of life in mind of students
- realize potential of human being and glory of human life
- be aware of Indian culture and heritage
- be aware of their rights as women and thereby enabling them to meet the challenges of life.

UNIT I: Values of Life

Introduction - Definition of Values - Significance of Values - Classification of Values – Need for Value Education.

UNIT II: Values for Individual Welfare

Honesty and Integrity- Punctuality- Positive Thinking - Commitment at the Workplace .

UNIT III: Values for Familial Welfare/Peace

Respect and Love for Elders – Truthfulness- Harmonious Relationship – Hospitality.

UNIT IV: Values for Social Welfare/Prosperity

Patriotism and Non-Violence-Human Rights-Women's Rights.

UNIT V: Values for Spiritual Welfare/Well being

Faith in God- Meditation- Purity- Self Surrender.

BOOK PRESCRIBED

Maithili.B & Thilakam.C., *et al.* (2014) . *Value Education*. Chennai: New Century Book House (P) Ltd.



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. INFORMATION TECHNOLOGY (SEMESTER)

(2018 - 2019 onwards)

Semester II	ADVANCED CONCEPTS IN C AND DATA STRUCTURES	Hours/Week: 5	
Core Course 2		Credits: 4	
Course Code 18UITC21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- write efficient structured programs in C.
- promote pointers into the programming in C.
- perform file manipulations of C.
- understand how the data is read with its different data types.
- understand how much time taken for primitive operations performed using data structures.
- understand stack, queue, linked list, trees, graphs.
- have the programming Knowledge to implement data structures concept.
- be professional in Algorithms.
- impart programming skills using data structures.

UNIT I

Structures and Unions: Defining a Structure – Declaring Structure Variables – Accessing Structure Members – Structure Initialization – Arrays of Structures – Arrays within Structures – Structures within Structures – Structures and Functions - Unions – Size of Structures. (14 Hours)

UNIT II

Pointers: Understanding Pointers – Accessing the Address of a Variable – Declaring Pointer Variables - Initialization of Pointer Variables – Accessing a Variable through its Pointer.

File Management in C: Defining and Opening a File - Closing File – Input / Output Operations on Files – Command Line Arguments. (18 Hours)

UNIT III

Introduction and Overview: Definitions – Concept of Data Structures – Overview of Data Structures – Implementation of Data Structures.

Arrays: Definition- Terminology – One-Dimensional Array- Multi Dimensional Arrays – Pointer Array. (16 Hours)

UNIT IV

Linked Lists: Definition – Single Linked List – Circular Linked List- Double Linked Lists. (15 Hours)

UNIT V

Stacks: Definition – Representation of a Stack – Operations on Stack.

Queues: Definition – Representation of Queues – Various Queue Structures – Circular Queue – Deque. (12 Hours)

TEXT BOOKS

1. Balagurusamy.E (2010), *Programming in ANSI C*, Edition 6, Tata McGraw-Hill Publishing Company.
2. Debasis Samantha (2009), *Classic Data Structures*, Second Edition, PHI Learning Private Limited.

UNIT	CHAPTERS	SECTIONS
I	In book 1 -10	10.2-10.13
II	In book 1-11,12	11.2-11.6 , 12.2-12.4,12.7
III	In book 2- 1,2	1.1-1.4, 2.1-2.5
IV	In book 2- 3	3.1-3.4
V	In book 2- 4,5	4.2-4.4, 5.2-5.4(5.4.1,5.4.2)

REFERENCE BOOKS

1. Sartaj Sahni (2000), *Data structures and applications in C++*, McGraw Hill.
2. Chitra, Rajan (2005), *Data Structures*, First edition, Vijay Nicole publishers.
3. James A. Storer (2002), *An Introduction to Data Structures and Algorithms*, Springer Science + Business Media, LLC.



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. INFORMATION TECHNOLOGY (SEMESTER)

(2018 - 2019 onwards)

Semester II	DATA STRUCTURES USING C LAB	Hours/Week: 5	
Core Practical 2		Credits: 3	
Course Code 18UITC21P		Internal 40	External 60

1. Write a program to create and process employee pay bill system using structures.
2. Write a program to prepare a student mark statement using structures.
3. Write a program to swap the two numbers using pointers.
4. Write a program to determine length of a character string using pointers.
5. Write a program to count the number of lines, words, characters in a file.
6. Write a program to separate odd and even numbers using file.
7. Write a program to perform linear search using array.
8. Write a program to perform binary search using array.
9. Write a program to perform Singly Linked List Operations.
10. Write a program to perform stack operation using array.
11. Write a program to perform Queue operation using array
12. Write a program to perform stack operation using Linked List
13. Write a program to perform Queue operation using Linked List.



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. INFORMATION TECHNOLOGY (SEMESTER)

(2018 - 2019 onwards)

Semester II	DISCRETE MATHEMATICS	Hours/Week: 4	
Allied Course 2		Credits: 4	
Course Code 18UITA21		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, the students will be able to

- have knowledge on complexity of algorithms using recurrence relations
- have an understanding in identifying patterns on many levels.
- have knowledge about groups.

UNIT I

Relations: Cartesian product of two Sets – Relations – Representation of relation – Operations on relations – Equivalence relations - Closures and Warshall's algorithm (Excluding Theorems) – Partitions and Equivalence classes. (10 Hours)

UNIT II

Functions and Mathematical Induction: Functions : Functions and operators - One – to – one, Onto functions - Special types of functions – Invertible functions - Composition of functions.

Mathematical Induction: Techniques of proof – Mathematical Induction.

(15 Hours)

UNIT III

Recurrence Relations and Generating Functions: Recurrence Relations: Recurrence – An introduction - Polynomials and their evaluations – Recurrence

relations - Solution of finite order homogenous (Linear) relations - Solution of Non – homogenous relations.

Generating Functions: Generating functions – Some common recurrence relations. (15 Hours)

UNIT IV

Matrix Algebra: (Sections Excluding Theorems) - Introduction - Matrix operations - The inverse of a square matrix - Elementary operations and Rank of a matrix – Simultaneous linear equations – Inverse by partitioning – Eigen values and Eigen vectors. (10 Hours)

UNIT V

Algebraic Systems: Groups – Order of a Group – Subgroup of a Group – Cyclic Groups – Cosets – Normal Subgroups. (10 Hours)

TEXT BOOK

Dr.Venkataraman.M.K, Dr. Sridharan.N, Chandrasekaran.N (2012), *Discrete Mathematics*, The National Publishing Company Basement.

UNIT I	Chapter II	Section – 1 to 7	Page No: 2.0 – 2.44
UNIT II	Chapter III	Section – 1 to 5	Page No: 3.0 - 3.20
	Chapter IV	Section – 1 to 2	Page No: 4.0 – 4.7
UNIT III	Chapter V	Section – 1 to 5	Page No: 5.0 – 5.19
	Chapter V	Section – 6 and 7	Page No: 5.20 – 5.28
UNIT IV	Chapter VI	Section – 1 to 7	Page No: 6.0 – 6.40
UNIT V	Chapter VII	Section – 7 to 12	Page No: 7.26 – 7.55

REFERENCE BOOKS

1. Arumugam.S, Issac,A.T (2003), *Modern Algebra*, SCITECH Publications (INDIA) PVT.LTD.
2. Johnsonbaugh (2009), *Discrete Mathematics*, 6/E, Pearson Prentice Hall.
3. Somasundaram.R.M (2006), *Discrete Mathematical Structure*, PHI Learning.



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. INFORMATION TECHNOLOGY (SEMESTER)

(2018 - 2019 onwards)

Semester II	OBJECT ORIENTED PROGRAMMING IN C++	Hours/Week: 2	
SEC 1		Credits: 2	
Course Code 18UITS21		Internal 40	External 60

COURSE OUTCOMES

On completion of this course, the students will be able to

- know the differences between Procedure Oriented Programming & Object Oriented Programming.
- understand the basic concepts in Object oriented programming approach.
- develop the programming skills based on OOP.
- understand the concepts of inheritance.
- know about the advanced features like templates and exception to make programs supporting reusability.

UNIT I

Classes and Objects: Specifying a class – Defining Member Functions – Making an outside Function Inline – Nesting of Member Functions – Private Member Functions – Arrays with in a Class – Memory Allocation for Object - Static Data Members – Static Member Functions - Arrays of Objects – Object as Function Arguments – Friendly Functions – Returning Objects. (5 Hours)

UNIT II

Constructors and Destructors: Constructors – Parameterized Constructors – Multiple Constructors in a Class – Constructors with Default Arguments – Dynamic Initialization of Objects – Copy Constructor – Destructors.

Operator Overloading and Type Conversions: Defining Operator Overloading - Overloading Unary Operators - Overloading Binary Operators – Rules for Overloading Operators - Type Conversion. (6 Hours)

UNIT III

Inheritance: Extending Classes: Defining Derived Classes – Single Inheritance – making a Private Member Inheritable – Multilevel Inheritance – Multiple Inheritance – Hierarchical Inheritance. (6 Hours)

UNIT VI

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 Manipulation – Sequential Input and Output Operations – Command Line Arguments. (6 Hours)

UNIT V

Templates: Introduction- Class Templates – Function Templates –Member Function Templates.

Exception Handling: Basics of Exception handling – Exception Handling Mechanism – Throwing Mechanism – Catching Mechanism. (7 Hours)

TEXT BOOK

Balagurusamy.E (2013), *Object-oriented programming with C++*, 7th edition, Tata McGraw Hill Publication.

UNIT	CHAPTERS	SECTIONS
I	5	5.3, 5.4, 5.6 - 5.16
II	6, 7	6.2 - 6.7, 6.11, 7.2, 7.4, 7.8, 7.9
III	8	8.2 - 8.7
IV	11	11.2 – 11.7, 11.10
V	12, 13	12.1, 12.2, 12.4, 12.7, 13.2 – 13.5

REFERENCE BOOKS

1. Herbert Schildt (1998), *C++ the Complete Reference*, Tata McGraw Hill Publication.
2. Ravichandran.D (2007), *Programming With C++*, Tata McGraw Hill Publication.
3. Graham M. Seed (1996), *An Introduction to Object-Oriented Programming in C++with Applications in Computer Graphics*, Springer.



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. INFORMATION TECHNOLOGY (SEMESTER)

(2018 - 2019 Onwards)

Semester II	OBJECT ORIENTED PROGRAMMING USING C++ LAB	Hours/Week: 2	
SEC Practical 2		Credits: 2	
Course Code 18UITS21P		Internal 40	External 60

Write programs in C++ for the following

1. To check if a number is prime or not, using objects
2. To calculate simple interest using function using rate of interest as default argument.
3. To perform Area calculation using Function overloading (Minimum three functions).
4. To swap two values between two class objects using friend function.
5. To find the sum of the digits of a given number using parameterized constructor.
6. To display students information using array of objects.
7. To overload Binary plus operator to add two complex numbers.
8. To prepare a student's mark list using single inheritance.
9. To prepare pay slip of an employee using multilevel inheritance.
10. To create bank account using multiple inheritance.
11. To prepare EB bill for a customer using hybrid inheritance
12. To implement file operations.
13. To perform arithmetic operations using class templates
14. To implement exception handling.