

UG Syllabus Model

Semester I To VI

(With effect from the academic year 2020-2021)

Holy Cross College (Autonomous), Nagercoil

Nationally Re-Accredited with A+ by NAAC (CGPA 3.35)

Nagercoil, Kanyakumari District, Tamil Nadu, India.

Affiliated to

Manonmaniam Sundaranar University, Tirunelveli



DEPARTMENT OF COMPUTER SCIENCE



Vision

1. To demonstrate proficiency in problem-solving techniques using the computer.
2. To demonstrate proficiency in at least two high-level programming languages and two
3. Operating systems
4. To show the ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
5. To show the ability to function effectively on teams to accomplish a common goal.
6. To sensitize the students to the social realities around them with the vision of making them responsible citizens.

Mission

To provide a high-quality undergraduate education in computer science that prepares students for productive careers and lifelong learning.

Programme Educational Objectives (PEOs)

PEO - 1	The graduates will apply appropriate theory and scientific knowledge to participate in activities that support humanity and economic development nationally and globally, developing as leaders in their fields of expertise.
PEO - 2	The graduates pursue lifelong learning and continuous improvement of The knowledge and skills with the highest professional and ethical standards.
PEO - 3	The graduates are trained to be employed in IT industries by providing domain knowledge, career and entrepreneurial skills.

Programme Outcomes (POs)

POs	Upon completion of B.Sc. Computer Science programme, the graduates will be able to:
PO - 1	utilize scientific knowledge to pursue higher studies in the relevant field.
PO - 2	create innovative ideas to enhance entrepreneurial skills for economic independence.
PO - 3	face challenging competitive examinations that offer rewarding careers.
PO - 4	reflect upon green initiatives and take responsible steps to build a sustainable environment.
PO - 5	handle ethical issues with social responsibility.
PO - 6	communicate effectively and collaborate successfully with peers to become competent professionals.

Programme Specific Outcomes (PSOs)

PSOs	Upon completion of the B.Sc. Degree Programme, the graduates will be able to:
PSO – 1	acquire the domain knowledge with critical thinking to serve the technical society as software engineer, data analyst and designing professional.
PSO - 2	enrich the managerial skills through team building and social responsibility.
PSO – 3	enhance the communication skills with lifelong learning.
PSO - 4	apply modern techniques to sustain the ever-changing era with values.

Eligibility Norms for Admission

Those who seek admission to B.Sc. Computer Science must have passed the Higher Secondary Examinations conducted by the Board of Higher Secondary Examination, Tamil Nadu with Computer Science or Mathematics as one of the subjects or any other examination recognized and approved by the Syndicate of the Manonmaniam Sundaranar University, Tirunelveli.

Duration of the Programme:3 years

Medium of Instruction: English

Passing Minimum

A minimum of 40% in the external examination and an aggregate of 40% is required. There is no minimum pass mark for the Continuous Internal Assessment.

Components of the B.Sc. Computer Science Programme

Part III (Major and Allied)

Major	Core – Theory papers	12 x100	1200
	Practicals (Core applied)	9 x100	900
	Elective - Theory papers	3 x 100	300
	Project		100
	Total marks		2500
Allied (I & II)	Theory	4x100	400
	Total marks		400
Part III - Total marks			2900

Course Structure
Distribution of Hours and Credits

Course	Sem. I	Sem. II	Sem. III	Sem. IV	Sem. V	Sem. VI	Total	
							Hours	Credits
Part I –Language	6 (4)	6 (4)	-	-	-	-	12	8
Part II -English	6 (4)	6 (4)	-	-	-	-	12	8
Part-III								
Major Core - Theory	4(4)	4(4)	5(4)+ 5(4)+ 5(4)	5(5) + 5(5)	6(5) + 5(5)	5(5)+ 5(5)+ 5(5)	59	55
Major Core -Practical	4(2)	4(2)	4(2) 4(2)	4(2) 4(2)	6(3)	4(2) 4(2)	38	19
Elective	-	-	-	5(4)	5(4)	5(4)	15	12
Project	-	-	-	-	6(6)		6	6
Allied- Theory	4(3)	4(3)	5(3)	5(3)	-	-	18	12
Part IV								
Add on Course(Professional English)	2(2)	2(2)	2 (2)	2 (2)	-	-	8	8
Non-Major Elective	2 (2)	2 (2)	-	-	-	-	4	4
SEC(Skill Enhancement Course)	2 (2)	2 (2)	-	-		2 (2)	6	6
AEC(Ability Enhancement Course)					2(2)		2	2
Total	30(23)	30(23)	30(21)	30(23)	30(25)	30(25)	180	140
Non Academic Courses								
Part V								
FC –I(Values for Life)	-	(1)	-	-	-	-	-	1

FC– II(Personality Development)	-	-	-	(1)	-	-	-	1
FC–III (Human Rights Education)	-	-	-	-	(1)	-	-	1
FC –IV (Gender Equity Studies)	-	-	-	-	-	(1)	-	1
SLP-Community Engagement Course	-	-	(2)	-	-	-	-	2
SLP-Extension activity (RUN)			-	(2)				2
STP - Clubs & Committees / NSS	-	-	-	(2)	-	-	-	2

Total number of hours = 180

Total number of credits = 140+10

Non Academic Courses are Mandatory and conducted outside the regular working hours

Skill Development Programme (Mandatory Certificate Course- 60 hours) will be offered in the first year for all the students.

Courses Offered

Semester	Course	Course Code	Title of the Course	Hours / Week	Credits
I	Part I	TL2012/ FL2111	Language: Tamil/French	6	4
	Part II	GE2013	General English	6	4
	Part III	SC2011	Major Core I: Programming Concepts in C	4	4
		SC20P1	Major Practical I: C Programming	4	2
		SA2011	Allied I: Theory: Digital Principles and Applications	4	3
	Part IV	APS201	Add on Course: Professional English for Physical Sciences - I	2	2
		SNM201	Non Major Elective (NME): Internet and Web Designing with HTML	2	2
		SEC201 / SEC202	Skill Enhancement Course (SEC): Meditation and Exercise / Computer Literacy	2	2
	Part V	FCV201	Foundation Course I: Values for Life	-	-
STP201		Student Training Programme (STP): Clubs & Committees / NSS	-	-	
II	Part I	TL2021/ FL2121	Language: Tamil/French	6	4
	Part II	GE2023	General English	6	4
	Part III	SC2021	Major Core II: Object Oriented Programming Using C++	4	4
		SC20P2	Major Practical II: C++ Programming	4	2
		SA2021	Allied II: Theory: Computer Organization and Architecture	4	3
	Part IV	APS202	Add on Course: Professional English for Physical Sciences – II	2	2
		SNM202	Non Major Elective (NME): Desktop Publishing using Scribus	2	2
		SEC201 / SEC202	Skill Enhancement Course (SEC): Meditation and Exercise / Computer Literacy	2	2
	Part V	FCV201	Foundation Course I: Values for Life	-	1
		SLP201	Service Learning Programme: Community Engagement Course		
STP201		Student Training Programme (STP): Clubs & Committees / NSS	-	-	
III	Part III	SC2031	Major Core III: Programming in Java	5	4
		SC2032	Major Core IV: Data Structures and Algorithms	5	4
		SC2033	Major Core V: Computer Networks	5	4
		SC20P3	Major Practical III: Java Programming	4	2
		SC20P4	Major Practical IV: Data Structure Using C++	4	2
		SA2031	Allied III: Theory: Numerical and Statistical Methods	5	3
	Part IV	APS203	Add on Course: Professional English for Physical Sciences	2	2
	Part V	FCV202	Foundation Course II: Personality Development	-	-
		STP201	Student Training Programme (STP): Clubs & Committees / NSS	-	-
SLP201		Service Learning Programme (SLP): Community Engagement Course	-	2	

		SLP202	Service Learning Programme (SLP): ExtensionActivity (RUN)	-	-
IV	Part III	SC2041	Major Core VI: UNIX and Shell Programming	5	5
		SC2042	Major Core VII: Relational Database Management Systems	5	5
		SC2043 SC2044 SC2045	Elective I: (a) Software Engineering (b) System Administration and Maintenance (c) Software Testing	5	4
		SC20P5	Major Practical V: Shell Programming	4	2
		SC20P6	Major Practical VI: SQL and PLSQL	4	2
		SA2041	Allied IV: Theory: Discrete Mathematics	5	3
		Part IV	APS204	Add on Course: Professional English for Physical sciences	2
	Part V	FCV202	Foundation Course II: Personality Development	-	1
		SLP202	Service Learning Programme (SLP) Extension Activity(RUN)		
		STP201	Student Training Programme (STP): Clubs & Committees / NSS	-	2
V	Part III	SC2051	Major Core VIII: Web Technology: Theory and Practice	6	5
		SC2052	Major Core IX: Mobile Computing and its Applications	5	5
		SC2053 SC2054 SC2055	Elective II: (a) Multimedia Systems (b) Microprocessor & Assembly Language Programming (c) Open Source Technology	5	4
		SC20P7	Major Practical VII: Web Technology Lab	6	3
		SC20PR	Project	6	6
		Part IV	AEC201	Ability Enhancement Course (AEC): Environmental Studies	2
	Part V	FCV203	Foundation Course III: Human Rights Education	-	1
	VI	Part III	SC2061	Major Core X: Android Programming	5
SC2062			Major Core XI: Computer Graphics	5	5
SC2063			Major Core XII: Operating Systems: Design Principles	5	5
SC2064 SC2065 SC2066			Elective III (a) PHP Programming (b) Network Security (c) E-Commerce Technologies	5	4
SC20P8			Major Practical VIII: Android Programming Lab	4	2
SC20P9			Major Practical IX: Computer Graphics Lab	4	2
Part IV			SSK206	Skill Enhancement Course (*SEC): Photoshop CS6	2
Part V		FCV204	Foundation Course IV: Gender Equity Studies (GES)	-	1
				TOTAL	180

***SBC for the VI semester is offered by the departments for their students**

SBC - We offer PHP Programming during VI semester. The objective of this SBC is to develop webpage.

NMEC – We offer Internet and Web Designing with HTML and Desktop Publishing using Scribus during I and II semester. The objective of Internet and Web Designing with HTML is to design webpage and browse in internet and Desktop Publishing using Scribus to design and create magazines, newsletter, brochures etc and to easily produce stylised documents. **Project** – We offer project in V semester. The aim is to equip the students to develop real time projects.

Self-Learning – Extra Credit Courses

Semester	Course Code	Title of the Course	Hours / Week	Credits
III	SC20S1	Web Designing with HTML	-	2
IV	SC20S2	Maya	-	2

Value Added Courses

Semester	Course Code	Title of the course	Total hours
I	VASC201	DCA-I	30
II	VASC202	DCA-II	30

Instruction for Course Transaction

Distribution of total hours for Theory (Major Core)

Components	Sem I	Sem II	Sem III	Sem IV	Sem V	Sem VI
Lecture Hours	45	45	60	60	75/60	60
Continuous Internal Assessment (2)	5	5	5	5	5	5
Quiz(2)	1	1	1	1	1	1
Class test(3)	3	3	3	3	3	3
* Class assignment/Group discussion/ Problem Solving(any other)	6	6	6	6	6	6
Total Hours	60	60	75	75	90/75	75

Distribution of total hours for Theory (Elective / Allied)

Components	Elective			Allied			
	Sem IV	Sem V	Sem VI	Sem I	Sem II	Sem III	Sem IV
Lecture Hours	60	60	60	45	45	60	60
Continuous Internal Assessment (2)	5	5	5	5	5	5	5
Quiz(2)	1	1	1	1	1	5	1
Class test(3)	3	3	3	3	3		3
* Class assignment/Group discussion/ Problem Solving(any other)	6	6	6	6	6	6	6
Total Hours	75	75	75	60	60	75	75

Distribution of total hours for Practical

Major	Semester	Hours / Week	Total Hours / Semester
	I /II	4/4	120
	III / IV	4/4	120
	V	6	90
	VI	4/4	120

Examination Pattern Ratio of Internal and External Components

Each paper carries an internal component. •

There is a passing minimum for external component.

A minimum of 40% in the external examination and an aggregate of 40% is required.

i) a. Part I - Tamil

Ratio of Internal and External= 30:70

Continuous Internal Assessment (CIA) Internal Components and Distribution of Marks

Components	Marks
Internal test (2)	15
Quiz (2)	4
Class Test (2)	6
Class assignment/ Home assignment/ Field assignment/ Article review/ Group discussion/ Problem solving	5
Total	30

Question Pattern

Internal Test	Marks	External Exam	Marks
Part A 4 x 1	4	Part A 10 x 1 (No choice)	10
Part B 3 x 4	12	Part B 5 x 4 (Internal choice)	20
Part C 3 x 8	24	Part C 5 x 8 (Internal choice)	40
Total	40	Total	70

b. Part I -French

Ratio of Internal and External= 30:70

Continuous Internal Assessment (CIA) Internal Components and Distribution of Marks

Components	Marks
Internal test (2)	15
Quiz (2)	4
Class Test (2)	6
Class assignment/ Home assignment/ Field assignment/ Article review/ Group discussion/ Problem solving	5
Total	30

Question Pattern for I & II Semesters

Internal Test	Marks	External Exam	Marks
Part A (Translation)	5	Part A (Translation) 4x5	20
Part B (Grammar) 5x5	25	Part B (Grammar) 6x5 (Paragraph Writing) 15x1	30

Part C (Paragraph Writing) 10x1	10	Part C (Translation, Comprehension) 2x5	10
		Part D 5x2	10
Total	40	Total	70

ii) Part II - General English

Ratio of Internal and External= 30:70

**Continuous Internal Assessment (CIA)
Internal Components and Distribution of Marks**

Components	Marks
Internal test (2)	15
Quiz (2)	4
Class Test (3)	6
GD/Open Book Test/Role Play/Assignment/Article Review/Seminar	5
Total	30

Question Pattern

Internal Test	Marks	External Exam	Marks
Part A (Objective Type)	4 x 1 = 4	Part A (Objective Type)	10 x 1 = 10
Part B	3 x 4 = 12	Part B	5 x 4 = 20
Part C	3 x 8 = 24	Part C	5 x 8 = 40
Total	40	Total	70

iii) Part III (Major/ Elective/ Allied)

Ratio of Internal and External= 30:70

**Continuous Internal Assessment (CIA)
Internal Components and Distribution of Marks**

Internal Components	Marks
Internal test (2)	15
Quiz (2)	4
Class test (3)	6
Open Book Test/ Home assignment / Class Assignment/ Group Discussion	5
Total	30

Question Pattern

Internal Test	Marks	External Exam	Marks
Part A 4 x 1	4	Part A 10 x 1 (No choice)	10
Part B 3 x 4	12	Part B 5 x 4 (Internal choice)	20
Part C 3 x 8	24	Part C 5 x 8 (Internal choice)	40
Total	40	Total	70

Practicals : Major Core & Allied papers

Ratio of Internal and External= 40:60

Total: 100 marks

Internal Components and Distribution of Marks

Internal Components	Marks
Performance of the Experiments	10
Regularity in attending practical and submission of records	10
Record	5
Model exam	15
Total	40

Question pattern

External Exam	Marks
Major Practical	60
Minor Practical / Spotters /Record	
Total	60

iv) Part IV

Ratio of Internal and External = **50: 50**

a) Add-on Course: Professional English for Physical Sciences

Internal Components and Distribution of Marks

Internal Components	Marks
Listening and speaking	25
Reading and Writing	25
Total	50

Question pattern

External Exam	Marks
Written Test : Open choice – 5 out of 7 questions (5 x 10)	50
Total	50

b) Non – Major Elective (NME)

**Continuous Internal Assessment (CIA)
Internal Components and Distribution of Marks**

Internal Components	Marks
Internal test (2)	20
Quiz (2)	15
Class assignment/ Home assignment/ Project report	15
Total	50

Question Pattern

Internal Test	Marks	External Exam	Marks
Part A 4 x 1 (No Choice)	4	Part A 5 x 1 (No Choice)	5
Part B 3 x 4 (Internal Choice)	12	Part B 5 x 3 (Internal Choice)	15
Part C 3 x 8 (Internal Choice)	24	Part C 5 x 6 (Internal Choice)	30
Total	40	Total	50

c) Skill Enhancement Course (SEC) - Computer Literacy

Internal Components

Component	Marks
Objective type questions (30x1)	30
Exercise (Book) compulsory (2x10)	20
Total	50

External Components

Component	Marks
Exercise 1	20
Exercise 2	10
Procedures for both Exercises	20
Total	50

d) Skill Enhancement Course (SEC) - Meditation and Exercise

Internal Components

Component	Marks
Objective type questions (20x1)	20
Exercise (2x10)	20
Assignment	10
Total	50

External Components

Component	Marks
Quiz	20
Written test : Open choice –10 out of 15 questions (10x3)	30
Total	50

e) Ability Enhancement Course (AEC) - Environmental Studies

Internal Components

Component	Marks
Project Report	30
Viva voce	20
Total	50

External Components

Component	Marks
Quiz	20
Written Test : Open choice – 10 out of 15 questions (10x3)	30
Total	50

v) Part V

i) Foundation course (Values for life, Personality development, Human rights education and Gender equity studies)

Ratio of Internal and External = 50: 50

a) Foundation Course I: Values for Life

Internal Components

Component	Marks
Song, Mime, Skit	20
Book Activities	20
A Kind Action	10
Total	50

External Components

Component	Marks
Quiz	20
Written Test : Open choice – 5 out of 7 questions (5 x 6)	30
Total	50

b) Foundation Course II: Personality Development**Internal Components**

Component	Marks
Exercise from book	20
Skit	10
Group Album	20
Total	50

External Components

Component	Marks
Quiz	20
Written Test : Open choice – 5 out of 7 questions (5 x 6)	30
Total	50

c) Foundation Course III: Human Rights Education**Internal Components**

Component	Marks
Album on current issues	20
Group Song/ Mime/ Skit	10
Open book test (Objective type questions)	20
Total	50

External Components

Component	Marks
Quiz	20
Written Test : Open choice – 5 out of 7 questions (5 x 6)	30
Total	50

d) Foundation Course IV: Gender Equity Studies**Internal Components**

Component	Marks
Album on current issues	20
Group Song/ Mime/ Skit	10
Open book test (Objective type questions)	20
Total	50

External Components

Component	Marks
Quiz	20
Written Test : Open choice – 5 out of 7 questions (5 x 6)	30
Total	50

- e) **SLP -Community Engagement Course (CEC)**
(Field Work – 15 hrs; Class Hours – 15 hrs)

Internal Components

Component	Marks
Assignment	10
Group Discussion	10
Attendance (Field work)	30
Total	50

External Components

Component	Marks
Project Report / Case Study (10-15 pages in print)	50
Group project	
Total	50

- f) **SLP – Service Learning Programme: Reaching the Unreached Neighbourhood (RUN)**

- 60 Hours mandatory programme included in the curriculum (2 credits).

- g) **STP – Student Training Programme**

- Compulsory for all I &II year students (2 credits).
- Clubs and Committees – Eco Club, YRC, Rotaract Club, NSS/ RRC, AICUF, Consumer Club, Sports, Legal Literacy and Women’s Cell.
- Each student can opt for one club/ commit

Semester I

NME: Internet and Web Designing with HTML

Course Code: SNM201

No. of Hours per Week	Credits	Total No. of Hours	Marks
2	2	30	100

Objectives:

1. To enable the students to specify design rules in constructing web pages and sites.
2. To enable the students to learn the basic working scheme of the Internet and World Wide Web.

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO Addressed	CL
CO - 1	analyze a web page and identify its elements and attributes.	PSO-1	AN
CO - 2	design web pages using DHTML and Cascading Style Sheets.	PSO-2	C
CO - 3	design and construct web sites.	PSO-4	C
CO - 4	create e-mail ID and browse in internet.	PSO-4	AP, C

Unit I

Introduction to Internet: Internet –World Wide Web - Web Browsers. **E-mail:** E-mail - Creating an E-mail id - Sending and Receiving mails – Attaching a File – Functions of e-mail – Advantages and Disadvantages of e-mail.

Unit II

Introduction to HTML: Designing a Home Page - HTML Documents - Anchor Tag. **Head and Body Section:** Colorful Web Page. **Designing the Body Section:** Horizontal Rule – Aligning the Headings - Image and Pictures.

Unit III

Ordered and Unordered lists: List - Unordered lists - Ordered Lists - Nested Lists. **Table Handling:** Tables - Table Creation in HTML - Cells Spanning Multiple Rows/ Columns - Coloring Cells.

Unit IV

DHTML and Style Sheets: Defining Styles - Linking a Style Sheet to an HTML

Document - Inline Styles – Internal Style Sheets - External Style Sheets. **Frames:** Frameset
Definition - Frame Definition.

Unit V

Forms: Action Attributes - Method Attributes - Enctype Attribute - Drop Down List.

Text Books:

1. Xavier, C. (2010). *World Wide Web Design with HTML*. (23rd edition). New Delhi:TMH Publication.
2. Rizwan Ahmed, P. (2013). *Internet and its Application*. (2nd edition). Chennai: Margham Publications.

Reference Books:

1. Paul J. Deitel, Deitel, (2008). *Internet & World Wide Web: How to Program*. (5th edition). Pearson Education.
2. Raymond Greenlaw, Ellen Hepp. (2007). *Fundamentals of Internet and www*. (2nd edition). New Delhi: Tata Mc GrawHill.
3. Ivan Bayross. (2010). *HTML, DHTML, JavaScript, Perl CGI*. (4th edition). BPB Publications.
4. Kogent Learning Solutions Inc., (2012). *Web Technologies Black Book*. (New Edition). New Delhi: Dream Tech Press Publishers.
5. David Pitt, (2014). *Modern Web Essential Javascript & Html5*. (2nd edition), New Delhi: Infoq Publication

Semester II

NME: Desktop Publishing using Scribus

Course Code: SNM202

No. of Hours per Week	Credits	Total No. of Hours	Marks
2	2	30	100

Objectives:

1. To provide information about open source philosophy surrounding scribus and understand what scribus can help you do.
2. To learn how the different aspects of scribus's interface can be used to develop all of the different document needs that we might have for desktop publishing.

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO Addressed	CL
CO - 1	use critical thinking skills to independently design and create magazines, newsletter, brochures etc.	PSO-1	C
CO - 2	understand the importance of lifelong, student driven learning	PSO-2	U
CO - 3	know the fundamentals of DTP and easily produce stylised documents	PSO-2	U
CO - 4	apply major design and marketing concepts to real world projects	PSO-4	AP

Unit I

Scribus Basics: Welcome to Scribus – Download and Installation: GhostScript - Scribus 1.4.5 –Installation of Scribus on Windows. Before you open Scribus - An introductory tour of the Scribus Workspace: Introduction to Frames: Insert Sample Text, Working with Image Frames, Creating Inline Characters, Saving a Document, Zoom in on your Documents. Navigating your Documents: The Page List, Page Arrows, Document Outline, Switching between Documents, Adding and Deleting Pages, Arranging Pages.

Unit II

Getting to know the Workspace: The Scribus Workspace: The Menu Bar, The File Menu: Preferences, Preferences: The General Tab, The Document Tab, The Fonts Tab, The Guides Tab, Grab Radius, The Typography Tab, The Tools Tab, The Scrapbook. The Edit Menu – ThePage Menu – The Insert Menu – The Item Menu: The Toolbar – The Properties Palette.

Unit III

Text Frames and Font Management: Using Frames– Editing your Text Frames –The Story Editor – The Text Tab – Text Wrapping: Flowing Text Around a Quote – TextAlignment – kerning and Tracking– Adding a Text FrameBackground – Creating Text over a Semi-transparent Background.

Unit IV

Working with Graphics: Working with Graphics Files – Working with Image Effects – Image Formats. **Working with Colors:** Choosing Colors: The Color Wheel – Applying Colors – Gradients.

Unit V

Exporting and Printing your Documents: Copy Editing and Proofreading – Print

Preview. Automating Scribus: Styles – Master Pages.

Text Book:

Robert White. (2015). *Beginning Scribus*.(3rd edition). New York: Apress Publication.

Reference Books:

1. Cedric Gemy, (2010). *Scribus 1.3.5: Beginner’s Guide*. (1st edition). Packt Publishing.
2. Thomas Ecclestone. (2015). *Use Scribus: The Desk Top Publishing Program*. (1st edition). CreateSpace Independent Publishing Platform.
3. Gregory Pittman, Christoph Schafer, (2009). *Scribus: Open Source Desktop Publishing: the Official Manual*. (reprint edition). FLES Books Publications.
4. Alice Chen, Gang Chen., (2010). *Using Free Scribus Software to Create Professional Presentations*. (New Edition). California: ArchiteG, Inc. Publishers.
5. John R. Culleton, (2011). *Create Book Covers with Scribus 1. 4. 0 and Gimp 2. 6. 11: Desktop Guide with Layflat Wire-O Binding*. (illustrated edition), Wexford Press Publishers.

Semester VI

Skill Enhancement Course(SEC): Photoshop CS6

Sub. Code:SSK206

No. of Hours per Week	Credit	Total No. of Hours	Marks
2	2	30	100

Objectives:

1. To enable students to create images for web design, logos, graphics, layouts, image touch-ups and colour enhancement.
2. To develop the skills for manipulating the images creatively.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	Understand retouch and repair a scanned photograph.	PSO –1	AP

CO -2	Create abilities to use Photoshop that are employable and rewarding.	PSO – 3	C
CO -3	Understand how to do basic photo repairs and color enhancements techniques.	PSO –1	AP
CO -4	Define and apply the basic functions of pixel selection, painting and editing tools	PSO - 4	R
CO -5	Understand file compression, Import and export files and save files in different formats	PSO –1	AN
CO -6	Utilize retouching features to make pictures perfect	PSO - 1	C

Unit I

Starting Photoshop CS2 : Getting Started with Photoshop CS2 – Opening an Existing File – The Photoshop Program Window – Guidelines for Working with Toolbox – Screen Modes – Creating a New File – Saving Files – Removing Files – Closing File.

Unit II

Working with Images: Vector and Bitmap Images – Opening Recently used Files – Image Size – Image Resolution – Editing Images – Opening Files Created in Illustrator or Freehand – Color Modes – Setting a Current Foreground and Background Colors – File Formats.

Unit III

Making Selections: Making Selection – The Grow and Similar Commands – Moving a Portion of an Image – Editing Selections – Copying a Selection into another Image – Filling a Selection – Transforming Selections.

Unit IV

Painting, Drawing and Retouching Tools: The painting Tools – The Drawing Tools – The Retouching Tools – Layers - Layers Palette – Working with Layers.

Unit V

Filters: The Filter Menu – Filter Gallery – Extract Filter – Liquify Filter – Vanishing Point

Filter – Artistic Filters – Blur Filters – Brush Stroke Filters.

Text Book:

Vikas Gupta, (2009). *Comdex DTP Course Kit*. (2nd edition). New Delhi: Dream Tech PressPublications.

Reference Books:

1. Martin Evening, (2012). *Adobe Photoshop CS6 for Photographers*. (2nd edition). New Delhi: Elsevier Pvt. Ltd.
2. Tanya Staples, (2005). *Photoshop CS2 for the Web*. (2nd edition). New Delhi: Peachpit Press.
3. Taz Tally, (2006). *Photoshop CS2 Before and After Makeovers*. (2nd edition). New York: John Wiley & Sons Publisher.
4. Philip Andrews, (2005). *Adobe Photoshop CS2*. (2nd edition). New Delhi: Focal Press.
5. Kogent Learning, (2012). *Photoshop CS2 in Simple Steps*. (3rd edition). New Delhi: Dreamtech Press.

Professional Ethics

Holy Cross College (Autonomous), Nagercoil
Kanyakumari District, Tamil Nadu

Nationally Re-Accredited with A+ by NAAC IV cycle - CGPA 3.35

Affiliated to

Manonmaniam Sundaranar University, Tirunelveli



DEPARTMENT OF COMPUTER SCIENCE
RATIFIED SYLLABUS FOR UNDERGRADUATE PROGRAMME
(With effect from the Academic year 2021 – 2022)

DEPARTMENT OF COMPUTER SCIENCE



Vision

1. To demonstrate proficiency in problem-solving techniques using the computer.
2. To demonstrate proficiency in at least two high-level programming languages and two operating systems
3. To show the ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
4. To show the ability to function effectively on teams to accomplish a common goal.
5. To sensitize the students to the social realities around them with the vision of making them responsible citizen.

Mission

To provide a high-quality undergraduate education in computer science that prepares students for productive careers and lifelong learning.

Programme Educational Objectives (PEOs)

PEO -1	The graduates will apply appropriate theory and scientific knowledge to participate in activities that support humanity and economic development nationally and globally, developing as leaders in their fields of expertise.
PEO - 2	The graduates pursue lifelong learning and continuous improvement of the knowledge and skills with the highest professional and ethical standards.
PEO - 3	The graduates are trained to be employed in IT industries by providing domain knowledge, career and entrepreneurial skills.

Programme Outcomes (POs)

POs	Upon completion of B.Sc. Computer Science programme, the graduates will be able to:
PO - 1	utilize scientific knowledge to pursue higher studies in the relevant field.
PO - 2	create innovative ideas to enhance entrepreneurial skills for economic independence.
PO – 3	face challenging competitive examinations that offer rewarding careers.
PO – 4	reflect upon green initiatives and take responsible steps to build a sustainable environment.
PO – 5	handle ethical issues with social responsibility.
PO – 6	communicate effectively and collaborate successfully with peers to become competent professionals.

Programme Specific Outcomes (PSOs)

PSOs	Upon completion of the B.Sc. Degree Programme, the graduates will be able to:
PSO – 1	acquire the domain knowledge with critical thinking to serve the technical society as software engineer, data analyst and designing professional.
PSO - 2	enrich the managerial skills through team building and social responsibility.
PSO – 3	enhance the communication skills with lifelong learning.
PSO - 4	apply modern techniques to sustain the ever-changing era with values.

Eligibility Norms for Admission

Those who seek admission to B.Sc. Computer Science must have passed the Higher Secondary Examinations conducted by the Board of Higher Secondary Examination, Tamil Nadu with Computer Science or Mathematics as one of the subjects or any other examination recognized and approved by the Syndicate of the Manonmaniam Sundaranar University, Tirunelveli.

Duration of the Programme: 3 years

Medium of Instruction: English

Passing Minimum

A minimum of 40% in the external examination and an aggregate of 40% is required. There is no minimum pass mark for the Continuous Internal Assessment.

Components of the B.Sc. Computer Science Programme

Part III (Major and Allied)

Major	Core – Theory papers	12 x100	1200
	Practical's (Core applied)	9 x100	900
	Elective - Theory papers	3 x 100	300
	Major Project		100
	Total marks		2500
Allied (I & II)	Theory	4x100	400
	Total marks		400
Part III - Total marks			2900

Course Structure
Distribution of Hours and Credits

Course	Sem. I	Sem. II	Sem. III	Sem. IV	Sem. V	Sem. VI	Total	
							Hours	Credits
Part I -Language	6 (4)	6 (4)	6(4)	6(4)	-	-	24	16
Part II -English	6 (4)	6 (4)	6(4)	6(4)	-	-	24	16
Part-III								
Major Core - Theory	4(4)	4(4)	4(4)+4(4)	5(4)	4(4) + 4(4)+ 4(4)	5(4)+ 4(4)+ 4(4)+4(4)	50	48
Major Core - Practical	4(2)	4(2)	3(2) 2(1)	4(2)	4(2) 3(2)	4(2) 3(1)	31	16
Major Elective	-	-	-	4(3)	4(3)	4(3)	12	9
Major Project	-	-	-	-	5(3)		5	3
Allied- Theory	4(3)	4(3)	3(3)	3(3)	-	-	14	12
Part IV								
Add on Course (Professional English)	2(2)	2(2)	2 (2)	2 (2)	-	-	8	8
SEC(Skill Enhancement Course)	2 (2)	2 (2)	-	-		2 (2)	6	6
AEC(Ability Enhancement Course)					2(2)		2	2
Non-Major Elective	2 (2)	2 (2)	-	-	-	-	4	4
Total	30(23)	30(23)	30(24)	30(22)	30(24)	30(24)	180	140
Non Academic Courses								
Part V								
*FC –I(Values for Life)	-	(1)	-	-	-	-	-	1
*FC– II(Personality Development)	-	-	-	(1)	-	-	-	1
*FC–III (Human Rights Education)	-	-	-	-	(1)	-	-	1
*FC –IV (Gender Equity Studies)	-	-	-	-	-	(1)	-	1
*SLP-Community Engagement Course	-	-	(2)	-	-	-	-	2
*SLP-Extension activity (RUN)			-	(2)				2
*STP - Clubs & Committees / NSS	-	-	-	(2)	-	-	-	2

Total number of hours = 180

Total number of credits = 140+10

**Non Academic Courses are Mandatory and conducted outside the regular working hours
Skill Development Programme (Mandatory Certificate Course- 60 hours) will be offered in
the first year for all the students.**

Courses Offered

Semester	Course	Course Code	Title of the Course	Hours / Week	Credits
I	Part I	TL2012/ FL2012	Language: Tamil/French	6	4
	Part II	GE2111	General English	6	4
	Part III	SC2011	Major Core I: Programming Concepts in C	4	4
		SC20P1	Major Practical I: C Programming	4	2
		SA2011	Allied I: Theory: Digital Principles and Applications	4	3
	Part IV	APS201	Add on Course: Professional English for Physical Sciences – I	2	2
		SNM201	Non Major Elective (NME): Internet and Web Designing with HTML	2	2
	Part V	SEC201 / SEC202	Skill Enhancement Course (SEC): Meditation and Exercise / Computer Literacy	2	2
		FCV201	Foundation Course I: Values for Life	-	-
STP201		Student Training Programme (STP): Clubs & Committees / NSS	-	-	
II	Part I	TL2022/ FL2022	Language: Tamil/French	6	4
	Part II	GE2121	General English	6	4
	Part III	SC2021	Major Core II: Object Oriented Programming Using C++	4	4
		SC20P2	Major Practical II: C++ Programming	4	2
		SA2021	Allied II: Theory: Computer Organization and Architecture	4	3
	Part IV	APS202	Add on Course: Professional English for Physical Sciences – II	2	2
		SNM202	Non Major Elective (NME): Desktop Publishing using Scribus	2	2
		SEC201 / SEC202	Skill Enhancement Course (SEC): Meditation and Exercise / Computer Literacy	2	2
	Part V	FCV201	Foundation Course I: Values for Life	-	1
SLP201		Service Learning Programme: Community Engagement Course			
STP201		Student Training Programme (STP): Clubs & Committees / NSS	-	-	
III	Part I	TL2031 FL2031	Language: Tamil/French	6	4
	Part II	GE2131	General English	6	4
	Part III	SC2131	Major Core III: Programming in Java	4	4
		SC2132	Major Core IV: Data Structures and Algorithms	4	4
		SC21P3	Major Practical III: Java Programming	3	2
		SC21P4	Major Practical IV: Data Structure Using C++	2	1
		SA2131	Allied III: Theory : Numerical and Statistical Methods	3	3
	Part IV	APS203	Add on Course: Professional English for Physical Sciences	2	2
	Part V	FCV202	Foundation Course II: Personality Development	-	-
STP201		Student Training Programme (STP): Clubs & Committees / NSS	-	-	
SLP201		Service Learning Programme (SLP):Community Engagement Course	-	2	

		SLP202	Service Learning Programme (SLP): Extension Activity (RUN)	-	-
IV	Part I	TL2041 FL2041	Language: Tamil/French	6	4
	Part II	GE2141	General English	6	4
	Part III	SC2141	Major Core V: UNIX and Shell Programming	5	4
		SC2142 SC2143 SC2144	Major Elective I: (a) Software Engineering (b) System Administration and Maintenance (c) Software Testing	4	3
		SC21P5	Major Practical V: Shell Programming	4	2
		SA2141	Allied IV: Theory: Discrete Mathematics	3	3
		Part IV	APS204	Add on Course: Professional English for Physical sciences	2
	Part V	FCV202	Foundation Course II: Personality Development	-	1
		SLP202	Service Learning Programme (SLP) Extension Activity (RUN)	-	2
		STP201	Student Training Programme (STP): Clubs & Committees / NSS	-	2
V	Part III	SC2151	Major Core VI: Web Technology: Theory and Practice	4	4
		SC2152	Major Core VII: Relational Database Management Systems	4	4
		SC2153	Major Core VIII: Mobile Computing and its Applications	4	4
		SC2154 SC2155 SC2156	Major Elective II: (a) Multimedia Systems (b) Microprocessor & Assembly Language Programming (c) Open Source Technology	4	3
		SC21P6	Major Practical VI: Web Technology Lab	4	2
		SC21P7	Major Practical VII: SQL and PLSQL	3	2
		SC21PR	Major Project	5	3
	Part IV	AEC201	Ability Enhancement Course (AEC): Environmental Studies	2	2
	Part V	FCV203	Foundation Course III: Human Rights Education	-	1
	VI	Part III	SC2161	Major Core IX: Android Programming	5
SC2162			Major Core X: Computer Graphics	4	4
SC2163			Major Core XI: Operating Systems: Design Principles	4	4
SC2164			Major Core XII: Computer Networks	4	4
SC2165 SC2166 SC2167			Major Elective III: (a) PHP Programming (b) Network Security (c) E-Commerce Technologies	4	3
SC21P8			Major Practical VIII: Android Programming Lab	4	2
SC21P9			Major Practical IX: Computer Graphics Lab	3	1
Part IV		SSK206	Skill Enhancement Course (*SEC): Photoshop CS6	2	2
Part V		FCV204	Foundation Course IV: Gender Equity Studies (GES)	-	1
			TOTAL	180	140+ 10

***SBC for the VI semester is offered by the departments for their students**

SBC - We offer PHP Programming during VI semester. The objective of this SBC is to develop webpage.

NMEC – We offer Internet and Web Designing with HTML and Desktop Publishing using Scribus during I and II semester. The objective of Internet and Web Designing with HTML is to design webpage and browse in internet and Desktop Publishing using Scribus to design and create magazines, newsletter, brochures etc and to easily produce stylised documents. **Project** – We offer project in V semester. The aim is to equip the students to develop real time projects.

Self-Learning – Extra Credit Courses

Semester	Course Code	Title of the Course	Hours / Week	Credits
III	SC20S1	Web Designing with HTML	-	2
IV	SC20S2	Maya	-	2

Value Added Courses

Semester	Course Code	Title of the course	Total hours
I	VASC201	DCA-I	30
II	VASC202	DCA-II	30

Instruction for Course Transaction

Distribution of total hours for Theory (Major Core)

Components	Sem I	Sem II	Sem III	Sem IV	Sem V	Sem VI
Lecture Hours	45	45	45	60	45	45/60
Continuous Internal Assessment (2)	5	5	5	5	5	5
Quiz(2)	1	1	1	1	1	1
Class test(3)	3	3	3	3	3	3
* Class assignment/Group discussion/ Problem Solving(any other)	6	6	6	6	6	6
Total Hours	60	60	60	75	60	60/75

Distribution of total hours for Theory (Elective / Allied)

Components	Elective			Allied			
	Sem IV	Sem V	Sem VI	Sem I	Sem II	Sem III	Sem IV
Lecture Hours	45	45	45	45	45	30	30
Continuous Internal Assessment(2)	5	5	5	5	5	5	5
Quiz(2)	1	1	1	1	1	1	1
Class test(3)	3	3	3	3	3	3	3
* Class assignment/Group discussion/ Problem Solving(any other)	6	6	6	6	6	6	6
Total Hours	60	60	60	60	60	45	45

Distribution of total hours for Practical

Major	Semester	Hours / Week	Total Hours / Semester
	I /II		4/4
III		3 2	75
IV		4	60
V		4 3 5	180
VI		4 3	105

Examination Pattern Ratio of Internal and External Components

Each paper carries an internal component. •

There is a passing minimum for external component.

A minimum of 40% in the external examination and an aggregate of 40% is required.

i) a. Part I - Tamil

Ratio of Internal and External= 30:70

Continuous Internal Assessment (CIA) Internal Components and Distribution of Marks

Components	Marks
Internal test (2)	15
Quiz (2)	4
Class Test (2)	6
Class assignment/ Home assignment/ Field assignment/ Article review/ Group discussion/ Problem solving	5
Total	30

Question Pattern

Internal Test	Marks	External Exam	Marks
Part A 4 x 1	4	Part A 10 x 1 (No choice)	10
Part B 3 x 4	12	Part B 5 x 4 (Internal choice)	20
Part C 3 x 8	24	Part C 5 x 8 (Internal choice)	40
Total	40	Total	70

b. Part I -French

Ratio of Internal and External= 30:70

Continuous Internal Assessment (CIA) Internal Components and Distribution of Marks

Components	Marks
Internal test (2)	15
Quiz (2)	4
Class Test (2)	6
Class assignment/ Home assignment/ Field assignment/ Article review/ Group discussion/ Problem solving	5
Total	30

Question Pattern for I & II Semesters

Internal Test	Marks	External Exam	Marks
Part A (Translation)	5	Part A (Translation) 4x5	20
Part B (Grammar) 5x5	25	Part B (Grammar) 6x5 (Paragraph Writing) 15x1	30

Part C (Paragraph Writing) 10x1	10	Part C (Translation, Comprehension) 2x5	10
		Part D 5x2	10
Total	40	Total	70

ii) Part II - General English

Ratio of Internal and External= 30:70

**Continuous Internal Assessment (CIA)
Internal Components and Distribution of Marks**

Components	Marks
Internal test (2)	15
Quiz (2)	4
Class Test (3)	6
GD/Open Book Test/Role Play/Assignment/Article Review/Seminar	5
Total	30

Question Pattern

Internal Test	Marks	External Exam	Marks
Part A (Objective Type)	4 x 1 = 4	Part A (Objective Type)	10 x 1 = 10
Part B	3 x 4 = 12	Part B	5 x 4 = 20
Part C	3 x 8 = 24	Part C	5 x 8 = 40
Total	40	Total	70

iii) Part III (Major/ Elective/ Allied)

Ratio of Internal and External= 30:70

**Continuous Internal Assessment (CIA)
Internal Components and Distribution of Marks**

Internal Components	Marks
Internal test (2)	15
Quiz (2)	4
Class test (3)	6
Open Book Test/ Home assignment / Class Assignment/ Group Discussion	5
Total	30

Question Pattern

Internal Test	Marks	External Exam	Marks
Part A 4 x 1	4	Part A 10 x 1 (No choice)	10
Part B 3 x 4	12	Part B 5 x 4 (Internal choice)	20
Part C 3 x 8	24	Part C 5 x 8 (Internal choice)	40
Total	40	Total	70

Practical's: Major Core & Allied papers

Ratio of Internal and External= 40:60

Total: 100 marks

Internal Components and Distribution of Marks

Internal Components	Marks
Performance of the Experiments	10
Regularity in attending practical and submission of records	10
Record	5
Model exam	15
Total	40

Question pattern

External Exam	Marks
Major Practical	60
Minor Practical / Spotters /Record	
Total	60

iv) Part IV

Ratio of Internal and External = **50: 50**

a) Add-on Course: Professional English for Physical Sciences

Internal Components and Distribution of Marks

Internal Components	Marks
Listening and speaking	25
Reading and Writing	25
Total	50

Question pattern

External Exam	Marks
Written Test : Open choice – 5 out of 7 questions (5 x 10)	50
Total	50

b) Non – Major Elective (NME)

**Continuous Internal Assessment (CIA)
Internal Components and Distribution of Marks**

Internal Components	Marks
Internal test (2)	20
Quiz (2)	15
Class assignment/ Home assignment/ Project report	15
Total	50

Question Pattern

Internal Test	Marks	External Exam	Marks
Part A 4 x 1 (No Choice)	4	Part A 5 x 1 (No Choice)	5
Part B 3 x 4 (Internal Choice)	12	Part B 5 x 3 (Internal Choice)	15
Part C 3 x 8 (Internal Choice)	24	Part C 5 x 6 (Internal Choice)	30
Total	40	Total	50

c) Skill Enhancement Course (SEC) - Computer Literacy

Internal Components

Component	Marks
Objective type questions (30x1)	30
Exercise (Book) compulsory (2x10)	20
Total	50

External Components

Component	Marks
Exercise 1	20
Exercise 2	10
Procedures for both Exercises	20
Total	50

d) Skill Enhancement Course (SEC) - Meditation and Exercise

Internal Components

Component	Marks
Objective type questions (20x1)	20
Exercise (2x10)	20
Assignment	10
Total	50

External Components

Component	Marks
Quiz	20
Written test : Open choice –10 out of 15 questions (10x3)	30
Total	50

e) Ability Enhancement Course (AEC) - Environmental Studies

Internal Components

Component	Marks
Project Report	30
Viva voce	20
Total	50

External Components

Component	Marks
Quiz	20
Written Test : Open choice – 10 out of 15 questions (10x3)	30
Total	50

v) Part V

i) Foundation course (Values for life, Personality development, Human rights education and Gender equity studies)

Ratio of Internal and External = 50: 50

a) Foundation Course I: Values for Life

Internal Components

Component	Marks
Song, Mime, Skit	20
Book Activities	20
A Kind Action	10
Total	50

External Components

Component	Marks
Quiz	20
Written Test : Open choice – 5 out of 7 questions (5 x 6)	30
Total	50

b) Foundation Course II: Personality Development**Internal Components**

Component	Marks
Exercise from book	20
Skit	10
Group Album	20
Total	50

External Components

Component	Marks
Quiz	20
Written Test : Open choice – 5 out of 7 questions (5 x 6)	30
Total	50

c) Foundation Course III: Human Rights Education**Internal Components**

Component	Marks
Album on current issues	20
Group Song/ Mime/ Skit	10
Open book test (Objective type questions)	20
Total	50

External Components

Component	Marks
Quiz	20
Written Test : Open choice – 5 out of 7 questions (5 x 6)	30
Total	50

d) Foundation Course IV: Gender Equity Studies**Internal Components**

Component	Marks
Album on current issues	20
Group Song/ Mime/ Skit	10
Open book test (Objective type questions)	20
Total	50

External Components

Component	Marks
Quiz	20
Written Test : Open choice – 5 out of 7 questions (5 x 6)	30
Total	50

e) SLP -Community Engagement Course (CEC)
(Field Work – 15 hrs; Class Hours – 15 hrs)

Internal Components

Component	Marks
Assignment	10
Group Discussion	10
Attendance (Field work)	30
Total	50

External Components

Component	Marks
Project Report / Case Study (10-15 pages in print)	50
Group project	
Total	50

f) SLP – Service Learning Programme: Reaching the Unreached Neighborhood (RUN)

- 60 Hours mandatory programme included in the curriculum (2 credits).

g) STP – Student Training Programme

- Compulsory for all I &II year students (2 credits).
- Clubs and Committees – Eco Club, YRC, Rotaract Club, NSS/ RRC, AICUF, Consumer Club, Sports, Legal Literacy and Women’s Cell.
- Each student can opt for one club/ committee.

Semester I

NME: Internet and Web Designing with HTML

Course Code: SNM201

Hours/Week	Credits	Total Hours	Marks
2	2	30	100

Objectives:

1. To enable the students to specify design rules in constructing web pages and sites.
2. To enable the students to learn the basic working scheme of the Internet and World Wide Web.

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO Addressed	CL
CO - 1	analyze a web page and identify its elements and attributes.	PSO-1	AN
CO - 2	design web pages using DHTML and Cascading Style Sheets.	PSO-2	C
CO - 3	design and construct web sites.	PSO-4	C
CO – 4	create e-mail ID and browse in internet.	PSO-4	AP, C

Unit I

Introduction to Internet: Internet –World Wide Web - Web Browsers. **E-mail:** E-mail - Creating an E-mail id - Sending and Receiving mails – Attaching a File – Functions of e-mail – Advantages and Disadvantages of e-mail.

Unit II

Introduction to HTML: Designing a Home Page - HTML Documents - Anchor Tag. **Head and Body Section:** Colorful Web Page. **Designing the Body Section:** Horizontal Rule – Aligning the Headings - Image and Pictures.

Unit III

Ordered and Unordered lists: List - Unordered lists - Ordered Lists - Nested Lists. **Table Handling:** Tables - Table Creation in HTML - Cells Spanning Multiple Rows/ Columns - Coloring Cells.

Unit IV

DHTML and Style Sheets: Defining Styles - Linking a Style Sheet to an HTML Document - Inline Styles – Internal Style Sheets - External Style Sheets. **Frames:** Frameset Definition - Frame Definition.

Unit V

Forms: Action Attributes - Method Attributes - Enctype Attribute - Drop Down List.

Text Books:

1. Xavier, C. (2010). *World Wide Web Design with HTML*.(23rd edition). New Delhi: TMH Publication.
2. Rizwan Ahmed, P. (2013). *Internet and its Application*. (2nd edition). Chennai: Margham Publications.

Reference Books:

1. Paul J. Deitel, Deitel, (2008). *Internet & World Wide Web: How to Program*. (5th edition). Pearson Education.
2. Raymond Greenlaw, Ellen Hepp. (2007). *Fundamentals of Internet and www*. (2nd edition). New Delhi: Tata McGrawHill.
3. Ivan Bayross. (2010). *HTML, DHTML, JavaScript, Perl CGI*. (4th edition). BPB Publications.
4. Kogent Learning Solutions Inc., (2012). *Web Technologies Black Book*. (New Edition).

New Delhi: DreamTech Press Publishers.

- David Pitt, (2014). *Modern Web Essential Javascript & Html5*. (2nd edition), New Delhi: Infoq Publication.

Semester II

NME: Desktop Publishing using Scribus

Course Code: SNM202

Hours/Week	Credits	Total Hours	Marks
2	2	30	100

Objectives:

- To provide information about open source philosophy surrounding scribus and understand what scribus can help you do.
- To learn how the different aspects of scribus's interface can be used to develop all of the different document needs that we might have for desktop publishing.

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO Addressed	CL
CO - 1	use critical thinking skills to independently design and create magazines, newsletter, brochures etc.	PSO-1	C
CO - 2	understand the importance of lifelong, student driven learning	PSO-2	U
CO - 3	know the fundamentals of DTP and easily produce stylised documents	PSO-2	U
CO - 4	apply major design and marketing concepts to real world projects	PSO-4	AP

Unit I

Scribus Basics: Welcome to Scribus – Download and Installation: GhostScript - Scribus 1.4.5 –Installation of Scribus on Windows. Before you open Scribus - An introductory tour of the Scribus Workspace: Introduction to Frames: Insert Sample Text, Working with Image Frames, Creating Inline Characters, Saving a Document, Zoom in on your Documents. Navigating your Documents: The Page List, Page Arrows, Document Outline, Switching between Documents, Adding and Deleting Pages, Arranging Pages.

Unit II

Getting to know the Workspace: The Scribus Workspace: The Menu Bar, The File Menu: Preferences, Preferences: The General Tab, The Document Tab, The Fonts Tab, The Guides Tab, Grab Radius, The Typography Tab, The Tools Tab, The Scrapbook. The Edit Menu – ThePage Menu – The Insert Menu – The Item Menu: The Toolbar – The Properties Palette.

Unit III

Text Frames and Font Management: Using Frames– Editing your Text Frames –The Story Editor – The Text Tab – Text Wrapping: Flowing Text Around a Quote – Text Alignment – kerning and Tracking– Adding a Text Frame Background – Creating Text over a Semi-transparent Background.

Unit IV

Working with Graphics: Working with Graphics Files – Working with Image Effects – Image Formats. **Working with Colors:** Choosing Colors: The Color Wheel – Applying Colors – Gradients.

Unit V

Exporting and Printing your Documents: Copy Editing and Proofreading – Print Preview. **Automating Scribus:** Styles – Master Pages.

Text Book:

Robert White. (2015). *Beginning Scribus*. (3rd edition). New York: Apress Publication.

Reference Books:

1. Cedric Gemy, (2010). *Scribus 1.3.5: Beginner's Guide*. (1st edition). Packet Publishing.
2. Thomas Ecclestone. (2015). *Use Scribus: The Desk Top Publishing Program*. (1st edition). CreateSpace Independent Publishing Platform.
3. Gregory Pittman, Christoph Schafer, (2009). *Scribus: Open Source Desktop Publishing: the Official Manual*. (reprint edition). FLES BooksPublications.
4. Alice Chen, Gang Chen., (2010). *Using Free Scribus Software to Create Professional Presentations*. (New Edition). California: ArchiteG, Inc.Publishers.
5. John R. Culleton, (2011). *Create Book Covers with Scribus 1. 4. 0 and Gimp 2. 6. 11: Desktop Guide with Layflat Wire-O Binding*. (illustrated edition), Wexford Press Publishers.

Semester IV

Major Elective I: (a) Software Engineering

Course Code: SC2142

Hours / Week	Credits	Total Hours	Marks
4	3	60	100

Objectives:

1. To understand the software engineering concepts.
2. Understand the coding, testing and user interface design
3. Design, develop the software projects and software reliability and quality management

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	apply software engineering principles and techniques	PSO – 1	AP
CO -2	develop, maintain and evaluate large-scale software systems.	PSO – 4	C
CO -3	produce efficient, reliable, robust and cost-effective software solutions.	PSO - 4	C
CO -4	ability to work as an effective member or leader of software engineering teams.	PSO – 2	AP
CO -5	ability to manage time, processes and resources effectively by prioritising competing demands to achieve personal and team goals	PSO – 2	U

Unit I

Introduction - Software Engineering Discipline - Evolution and Impact - Programs Vs Software Products. Software Life Cycle Models: Classical Waterfall Model -Iterative Waterfall Model - Prototyping Model - Evolutionary Model - Spiral Model. Software Project Management: Responsibilities of a Software Project Manager - Project Planning - Risk Management.

Unit II

Requirements Analysis and Specification: Requirements Gathering and Analysis - Software Requirements Specification (SRS): Users of SRS Document, Characteristics of a Good SRS Document, Attributes of Bad SRS Documents –Software Design: Characteristics of a Good Software Design - Cohesion and Coupling.

Unit III

Function-Oriented Software Design: Overview of SA/SD Methodology - Structured Analysis - Data Flow Diagrams (DFDs). Object Modeling Using UML: - UML Diagrams - Use Case Model: Representation of Use Cases. Why Develop Use Case Diagram, how to identify the Use Cases of a system - Class Diagrams - Interaction Diagrams - State Chart Diagram.

Unit IV

User Interface Design: Characteristics of a Good User Interface - Basic Concepts - Types of User Interfaces - Coding and Testing: Coding – Testing: Basic Concepts and Terminologies, Testing Activities -NIT Testing - Black-Box Testing - White-Box Testing - Debugging - Integration Testing.

Unit V

Software Reliability and Quality Management: Software Reliability - Statistical Testing -Software Quality - Software Quality Management System - ISO 9000:What is ISO 9000 Certification, ISO 9000 for Software Industry-Computer Aided Software Engineering: CASE Environment - CASE support in Software Life Cycle - Characteristics of CASE Tools - Software Maintenance: Characteristics of Software Maintenance - Software Reverse Engineering - Software Maintenance Process Models.

Text Book:

Rajib Mall, "Fundamentals of Software Engineering",3rd Edition, Prentice Hall of India Private Limited, 2008.

Reference Books:

1. Rajib Mall, "Fundamentals of Software Engineering", 4thEdition, Prentice Hall of India Private Limited, 2014.
2. Richard Fairley, "Software Engineering Concepts", TMGH Publications, 2004.

Semester V

Major Core VI: Web Technology: Theory and Practice

Course Code: SC2151

Hours / Week	Credits	Total Hours	Marks
4	4	60	100

Objectives:

1. To study the various HTML tags and design simple web pages
2. To study the scripting language Java Script.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	develop an ability to design and implement static and dynamic web pages.	PSO – 1	C
CO -2	differentiate web applications using client-side (JavaScript, HTML, XML) and server-side technologies (ASP.NET, ADO.NET).	PSO – 1	AN
CO -3	define the fundamental ideas and standards underlying Web Service Technology	PSO – 1	U
CO -4	apply the knowledge of the internet and related internet concepts that are vital in understanding web application development and analyze the insights of internet programming to implement complete application over the web.	PSO – 3	AP

Unit I

Structuring Documents for the Web: Introducing HTML and XHTML - Basic Text Formatting - Presentational Elements–Phrase Elements - Lists - Core Elements and Attributes.
Links and Navigation: Basic Links - Creating Links with the <a> Element. **Images, Audio, and Video:** Adding Images Using the Element - Using Images as Links.

Unit II

Images, Audio, and Video: Adding Flash, Video and Audio to your web pages: Adding videos to your Site, Adding Audio to your Site. **Tables:** Basic Table Elements and Attributes – Adding a <caption> to a Table - Grouping Section of a Table - Nested Tables. **Forms:** Introducing Forms - Form Controls - Sending Form Data to the Server.

Unit III

Frames: Introducing Frameset – The <frameset> Element–The <frame> Element - Creating Links Between Frames - Nested Framesets. **Cascading Style Sheets:** Introducing CSS - Where you can Add CSS Rules - Controlling Text - Text Formatting - Text Pseudo Classes.

Unit IV

Java Script: How to Add Script to Your Pages – Variables–Operators –Control Structures - Conditional Statements – Looping – Functions – Built in Functions. **Working with JavaScript:** Practical Tips for Writing Scripts.

Unit V

JavaScript Objects: Window Object - Document object - Browser Object - Form Object - Navigator object - Screen object – Events - Event Handlers – Forms Validations.

Text Book:

Jon Duckett, “Beginning HTML, XHTML, CSS and Java Script”, Second Edition, Wiley Publishing, 2010.

Reference Books:

1. Chris Bates, “ Web Programming”, Third Edition, Wiley Publishing, 2014
2. Srinivasan. M, “Web Technology: Theory and Practice”, Pearson Publication

Semester VI
Skill Enhancement Course(SEC): Photoshop CS6
Course Code: SSK206

Hours /Week	Credits	Total Hours	Marks
2	2	30	100

Objectives:

1. To enable students to create images for web design, logos, graphics, layouts, image touch-ups and colour enhancement.
2. To develop the skills for manipulating the images creatively.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	understand retouch and repair a scanned photograph.	PSO –1	AP
CO -2	create abilities to use Photoshop that are employable and rewarding.	PSO – 3	C
CO -3	understand how to do basic photo repairs and color enhancements techniques.	PSO –1	AP
CO -4	define and apply the basic functions of pixel selection, painting and editing tools	PSO - 4	R
CO -5	understand file compression, Import and export files and save files in different formats	PSO –1	AN
CO -6	utilize retouching features to make pictures perfect	PSO - 1	C

Unit I

Starting Photoshop CS2 : Getting Started with Photoshop CS2 – Opening an Existing File – The Photoshop Program Window – Guidelines for Working with Toolbox – Screen Modes – Creating a New File – Saving Files – Removing Files – Closing File.

Unit II

Working with Images: Vector and Bitmap Images – Opening Recently used Files – Image Size – Image Resolution – Editing Images – Opening Files Created in Illustrator or Freehand – Color Modes – Setting a Current Foreground and Background Colors – File Formats.

Unit III

Making Selections: Making Selection – The Grow and Similar Commands – Moving a Portion of an Image – Editing Selections – Copying a Selection into another Image – Filling a Selection – Transforming Selections.

Unit IV

Painting, Drawing and Retouching Tools: The painting Tools – The Drawing Tools – The Retouching Tools – **Layers** - Layers Palette – Working with Layers.

Unit V

Filters: The Filter Menu – Filter Gallery – Extract Filter – Liquify Filter – Vanishing Point Filter – Artistic Filters – Blur Filters – Brush Stroke Filters.

Text Book:

Vikas Gupta, (2009). *Comdex DTP Course Kit*. (2nd edition). New Delhi: DreamTech Press Publications.

Reference Books:

1. Martin Evening, (2012). *Adobe Photoshop CS6 for Photographers*. (2nd edition). New Delhi: Elsevier Pvt. Ltd.
2. Tanya Staples, (2005). *Photoshop CS2 for the Web*. (2nd edition). New Delhi: Peachpit Press.
3. Taz Tally, (2006). *Photoshop CS2 Before and After Makeovers*. (2nd edition). New York: John Wiley & Sons Publisher.
4. Philip Andrews, (2005). *Adobe Photoshop CS2*. (2nd edition). New Delhi: Focal Press.
5. Kogent Learning, (2012). *Photoshop CS2 in Simple Steps*. (3rd edition). New Delhi: Dreamtech Press.

Professional Ethics