

NALLAMUTHU GOUNDER MAHALINGAM COLLEGE (AUTONOMOUS)-POLLACHI

398	B.Sc Computer Science	Core Elective II:MongoDB	21UCS6E6	2021
399	B.Sc Computer Science	Core Elective III:Information retrieval	21UCS6E7	2021
400	B.Sc Computer Science	Core Elective III:HTML,JAVA Script and JQuery for	21UCS6E8	2021
401	B.Sc Computer Science	Core Elective III:Angular NodeJS	21UCS6E9	2021
402	B.Sc.IT	Visual Programming	21UIT414	2021
403	B.Sc.IT	Visual Programming Lab	21UIT416	2021
404	B.Sc.IT	Skill Based Major Elective - Lab. I WebProgramming(ASP.NET)	21UIT5S12	2021
405	B.Sc.IT	Artificial Intelligence	21UIT5E12	2021
406	B.Sc.IT	Core-XIV:Skill Enhanced Course: Python Programming	21UIT621	2021
407	B.Sc.IT	Core Lab - IX: Python Programming Lab	21UIT622	2021
408	B.Sc.IT	Core Elective-II: Internet of Things	21UIT6E22	2021
409	B.Sc.IT	Core Elective-II: Block Chain Technology	21UIT6E23	2021
410	B.Sc.IT	Core Elective-II: R Programming	21UIT6E21	2021
411	B.Sc.IT	Project Planning and Management	21UIT623	2021
412	B.Sc. CT	Core IX: Linux And Shell Programming	21UCT413	2021
413	B.Sc. CT	Core VI: Database Management System	21UCT308	2021
414	B.Sc. CT	Lab - VI : Linux And Shell Programming Lab	21UCT416	2021
415	B.Sc. CT	Core Elective - I : Management Information System	21UCT5E3	2021
416	B.Sc. CT	Core Elective - II : Software Project Management	21UCT 6E2	2021
417	B.Sc. CT	Core Elective - II : Grid Computing	21UCT 6E3	2021
418	B.Sc. CT	Core Elective - III : Digital Image Processing	21UCT 6E6	2021
419	B.Sc. CT	Software Testing	21UCT5AL	2021
420	B.Sc. CT	Data Analytics	21UCT6AL	2021
421	BCA	Programming in C++	21UBC206	2021
422	BCA	Web Designing Lab	21UBC418	2021
423	BCA	Software Testing	21 UBC520	2021

BOS Highlighted



DEPARTMENT OF INFORMATION TECHNOLOGY

NALLAMUTHU GOUNDER MAHALINGAM COLLEGE

POLLACHI - 642001

13th Board of Studies Meeting in the Department of
Information Technology
(Online Mode)

Date & Time: 22.05.2021 & 10 AM

Agenda

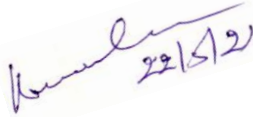
BoS / IT 13.1	:	Welcome address and Opening Remarks by Chairman, Board of studies in the Department of Information Technology
BoS / IT 13.2	:	Confirmation of the Minutes of the 12 th / Previous meeting of Board of studies in the Department of Information Technology held on 22.02.2020 and Action taken report of 12 th meeting of Board of studies
BoS / IT 13.3	:	Syllabus of B.Sc. INFORMATION TECHNOLOGY under Regulation 2021-2022
		Any other Discussions if any
BoS / IT 13.4	:	Suggestion given by BOS Members
BoS / IT 13.5	:	Any other items

NALLAMUTHU GOUNDER MAHALINGAM COLLEGE
POLLACHI
DEPARTMENT OF INFORMATION TECHNOLOGY

MINUTES OF BOS MEETING

The 13th Meeting of the Board of studies of the DEPARTMENT OF INFORMATION TECHNOLOGY was held on 22.05.2021 at 10.00 a.m. in the DEPARTMENT, NALLAMUTHU GOUNDER MAHALINGAM COLLEGE, POLLACHI - 642001.

1. The following members were present:

1.	Mr. K. VIJAYAKUMAR Assistant Professor and Head	Chairman 
2.	Mr R. SEKAR Assistant Professor	Internal Members 
3.	Mrs C. R. DURGADEVI Assistant Professor	
4.	Mrs B. KALAISELVI Assistant Professor	
5.	Mrs. V. PRABAVATHI Assistant Professor	
6.	Mr. R. Boobathiraj Assistant Professor, Dept. of Computer Science – IT Dr. GRD College of Science, Coimbatore – 641 014. E-Mail: boobathi191@gmail.com Mobile No. : 99659 75295	University Nominee 
7.	Dr. P. Joseph Charles Asst. Prof. & Head Dept. of Information Technology St. Joseph's College (Autonomous) Trichy – 620002. (Bharathidasan University) E-Mail: charles_pjm74@yahoo.com Mobile No.: 9443281372	Academic Experts 

8.	Ms.D. Anitha, Technology Analyst, Infosys Limited, Bangalore. E-Mail: anitha.ngm@gmail.com Mobile No. 8526830042	Industrial Expert  22/5/21
9.	Mrs. K. Chandrakala Assistant Manager, Systems Information Technology, SAP ABAP Developments, TVS Motor Company Ltd, Hosur. E-Mail: chandrakumararaja@gmail.com Mobile No. 9486843413	Alumnus nominated by HoD  22/5/21
10.	Mrs. A. Poongodi Asst. Professor in Computer Science, Prof. Dhanapalan College of Arts and Science, Padur, Kelambakkam, Chennai. (Chennai University) E-Mail: poongodimca1979@gmail.com Mobile No.: 9710907426.	Special Invitee (Subject Expert)  22/5/21
11.	Selvan V. Nandhakumar Final Year	Student Members  22/05/21
12.	Selvi V. AARTHI Final Year	 22/5/21

HoD

CDC Co-ordinator

COE

PRINCIPAL

BoS/IT 13.1 WELCOME ADDRESS AND OPENING REMARKS BY CHAIRMAN, BOARD OF STUDIES IN THE DEPARTMENT OF INFORMATION TECHNOLOGY. The Chairman, BoS of the Department of Information Technology welcomed and introduced the members of 13th Board of Studies and thanked each one of them for sparing their valuable time to attend the meeting.

BoS/IT 13.2 TO CONFIRM THE MINUTES OF PREVIOUS BOS MEETING NO. BoS/IT 12.2 HELD ON 22.02.2020. The minutes of the BoS/IT 12.3 Board of Studies

meeting held on 22.02.2020 were communicated to the members. The comments received have been incorporated and placed for confirmation. The same was approved by the 28th Academic council.

~ Action Taken Report (Enclosed in Annexure 1)

BoS/IT 13.3

The presented syllabus was accepted by the experts and a **few suggestions** were given as noted into 13.4.

BoS/IT 13.3.1

B.Sc. INFORMATION TECHNOLOGY (I & II SEMESTER)

The following papers from B.Sc. IT were accepted by the experts fully without further suggestions

1. 21UIT101 - Core - I : Programming in 'C'
2. 21UIT102 - Core - II : Computer System Architecture
3. 21UIT1A1 - Allied - I : Mathematics - I (Statistics)
4. 21UIT103 - Core Lab - I : Programming in 'C'
5. 21UIT204 - Core - III: Object Oriented Programming with Java
6. 21UIT205 - Core - IV: Data Structures
7. 21UIT2A2 - Allied - II: Mathematics II (Discrete Mathematics)
8. 21UIT206 - Core Lab - II: Programming in Java

BoS/IT 13.3.2

B.Sc. INFORMATION TECHNOLOGY (III & IV SEMESTER)

The presented syllabus was accepted by the experts and a few suggestions were given as follows:

1. In (21UIT412) Core - VIII: Data Communication and Networks course IP address classes can be included
2. In (21UIT307) Core - V: Operating Systems Text book may be changed

The following courses were revised with major / minor modifications.

1. 21UIT414 **Core - X: Visual Programming**
2. 21UIT416 **Core Lab - VI: Visual Programming**

The following papers from B.Sc. IT were accepted by the experts fully without further suggestions:

1. 21UIT307 - Core - V: Operating Systems
2. 21UIT308 - Core - VI: Relational Database Management System
3. 21UIT309 - Core - VII: Service Oriented Architecture
4. 21UIT3A3 - Allied - III: Microprocessor and Assembly Language Programming
5. 21UIT310 - Core Lab - III: RDBMS
6. 21UIT311 - Core Lab - IV: Web Designing (HTML, CSS, JavaScript & Angular)
7. 21UIT3N11 / 21UIT3N12 - Non Major Elective - I: Social Networks /
Non Major Elective - I: Hardware & Networking
8. 21VIT304 - Basics of Animation Technology
9. 21UIT413 - Core - IX: Advanced Java Programming
10. 21UIT4A4 - Allied - IV: Software Engineering
11. 21UIT415 - Core Lab - V: Programming in Advanced Java
12. 21UIT4N21 / 21UIT4N22 - Non Major Elective - II : Data Analytics / Computer
Security
13. 21VIT404 - Basics of Block Chain Architecture

BoS/IT 13.3.3

B.Sc. INFORMATION TECHNOLOGY (V & VI SEMESTER)

The presented syllabus was accepted by the experts and a few suggestions were given as follows:

1. In scheme Internship Main Project Field Visit is given in fifth semester. This can be renamed as Internship Main Project.
2. In sixth semester for (21UIT623) Project if possible make a tie up with experts of Industries/MNC companies
3. In MS Office, we have Power app (front end) and Share Point as Backend that can be utilized for project development.
4. Instead of (21UIT5S11 / 21UIT5S12) Skill Based Elective - I: Lab. Web Programming (PHP)/ (ASP.NET), it was suggested to include Machine Learning and Robotics. But due to inadequate lab infrastructure, these changes can be done in future.

5. In 21UIT520- Core Lab - VIII: Software Testing Tools, Selenium can be used.

6. In general, Identify the slow Learners and Flipped Class method can be followed.

The following papers from B.Sc. IT were accepted by the experts fully without further suggestions:

1. 21UIT517 - Core -XI: Information Security
2. 21UIT518 - Core - XII: Skill Enhanced Course Open Source Methodologies
3. 21UIT5E11 / 21UIT5E13- Core Elective - I: Data Mining and Analytics/
E-Commerce
4. 21UIT519 - Core Lab - VII: Open Source Methodologies
5. 21UIT5AL1 - Advanced Learner Course - I Big Data Analytics (Optional)
6. 21UIT6E31 / 21UIT6E32 / 21UIT6E33 Core Elective - III: Mobile
Computing/Computer Graphics/Cloud Computing
7. 21UIT6AL2 Advanced Learner Course - II R-Programming Lab. (Optional)
8. 21UIT6S21 / 21UIT6S22 - Skill Based Elective - II: - Lab. DTP Software
(Photoshop)/ Skill Based Elective - II: - Lab. II DTP Software (CorelDraw)

The following courses were revised with major / minor modifications.

1. 21UIT5E12 - Artificial Intelligence
2. 21UIT623 – Project

The following courses were removed

1. 20UIT5S2 - Skill Based Major Elective - Lab. I Web Programming (Python)
2. 20UIT5E3 - Digital Image Processing
3. 20UIT622 - Lab. IX - Graphics & Multimedia
4. 20UIT6E4 - Embedded Systems
5. 20UIT6E8 - Software Project Management
6. 20UIT6E9 - Multimedia Techniques

New Course Added:

1. 21UIT5S12 - Skill Based Major Elective - Lab. I Web Programming (ASP.NET)
2. 21UIT621 - Core - XIV: Skill Enhanced Course Python Programming
3. 21UIT622 - Core Lab - IX: Python Programming
4. 21UIT6E21 - Core Elective - II: R Programming
5. 21UIT6E22 - Core Elective - II: Internet of Things

6. 21UIT6E23 - Core Elective - II: Block Chain Technology

These changes have been made effect for the students admitted in 2021 with I to VI Semesters accordingly.

BoS/IT 13.4 SUGGESTIONS GIVEN BY THE BoS MEMBERS

The members had a brainstorming discussion and interaction among themselves. After discussion, fruitful suggestions were incorporated appropriately in the Curriculum and Syllabi.

Based on the suggestions given by the members, BOS resolved to recommend the following to the Academic Council for further approval.

a) The syllabus of B.Sc. Information Technology under Regulation BoS/IT 13.3

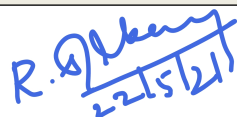
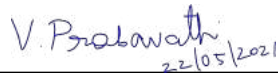
13.4.1: In MS Office, we have Power app (front end) and Share Point as Backend that can be utilized for project development.

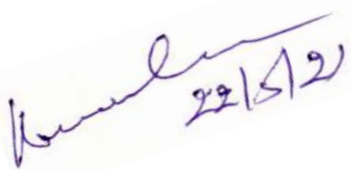
13.4.2: They suggested to include Machine Learning and Robotics. But due to inadequate lab. infrastructure, these changes can be done in future.

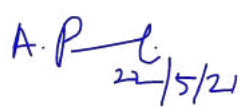
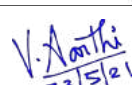
13.4.3: Software Testing Tools, Selenium can be used.

13.4.4: Instead of giving Online Course (Optional) (MOOC/NPTEL/SWAYAM) in first and second semester, they can be provided in third and fourth semesters

Members Present:

<i>Chairman</i>	<i>Sign</i>
Mr. K. VIJAYAKUMAR Assistant Professor and Head	 22/5/21
<i>Internal Members</i>	
Mr R. SEKAR Assistant Professor	 22/5/21
Mrs C. R. DURGADEVI Assistant Professor	 22/5/2021
Mrs B. KALAISELVI Assistant Professor	 22/5/21
Mrs. V. PRABAVATHI Assistant Professor	 22/05/2021

University Nominee	
Mr. R. Boobathiraj Assistant Professor, Dept. of Computer Science – IT Dr. GRD College of Science, Coimbatore – 641 014 E-Mail: boobathi191@gmail.com Mobile No. : 99659 75295	
Academic Experts	
Dr. P. Joseph Charles Asst. Prof. & Head Dept. of Information Technology St. Joseph's College (Autonomous) Trichy – 620002. (Bharathidasan University) E-Mail: charles_pjm74@yahoo.com Mobile No.: 9443281372	
Industrial Experts	
Ms.D. Anitha, Technology Analyst, Infosys Limited, Bangalore. E-Mail: anitha.ngm@gmail.com Mobile No. 8526830042	
Alumnus nominated by Principal / HoD	
Mrs. K. Chandrakala Assistant Manager, Systems Information Technology, SAP ABAP Developments, TVS Motor Company Ltd, Hosur. E-Mail: chandrakumararaja@gmail.com Contact No. 9486843413	

Special Invitee (Subject Expert)	
Mrs. A. Poongodi Asst. Professor in Computer Science, Prof. Dhanapalan College of Arts and Science, Padur, Kelambakkam, Chennai. (Chennai University) E-Mail: poongodimca1979@gmail.com Mobile No.: 9710907426.	
Student Members	
Selvan V. Nandhakumar Final Year	
Selvi V. Aarthi Final Year	

ANNEXURE I

Minutes of the BoS/IT 12th / Previous Meeting – Action Taken Report

S.No.	Suggestion given by expert members	Action taken
1	In Computer System Architecture course (20UIT102), Number system and Binary codes can be included.	Reviewed and Implemented
2	In Operating system course (20UIT307), Windows XP & 7 can be included	Implemented
3	In Data Communication and Networks course (20UIT412), TCP/IP concepts can be included	Implemented
4	In Major Elective-III: Mobile Computing course (20UIT6E7), Concepts about 4G and 5G can be included.	Implemented

HoD

List of Courses having focus on local, national, regional and global developmental needs offered by the Department of Information Technology

Information Technology						
Programme: B.Sc. Information Technology			Year 2021 - 2022			
Course Code	Title of the Course	Need(s)				Rationale
		Local	Regional	National	Global	
21UIT101	Programming in 'C'			✓		To know well about the basic programming concepts
21UIT102	Computer System Architecture	✓				To meet the requirements of appearing National Eligible Test (NET) and SET
21UIT103	Lab. I - Programming in 'C'			✓		To know well about the basic programming skills
21UIT1A1	Mathematics I (Statistics)	✓		✓		To build the mathematical skills for programming
21UIT204	Object Oriented Programming with Java			✓		To design and program stand-alone Java applications.
21UIT205	Data Structures				✓	To solve problems using data structures and writing programs
21UIT206	Lab. II - Programming in Java			✓		To design and program stand-alone Java applications.
21UIT2A2	Mathematics II (Discrete Mathematics)		✓			To build the mathematical skills for programming
21UIT307	Operating Systems		✓			To make the computer system convenient to use in an efficient

						manner
21UIT308	Relational Database Management System			✓		To have a broad understanding of database concepts and database management system software.
21UIT309	Service Oriented Architecture				✓	To provide a new way to design, develop, architect and consume software applications or components.
21UIT310	Lab. III RDBMS			✓		To know well about the basics of database programming.
21UIT311	Lab. IV Web Designing (HTML, CSS, JavaScript & Angular)	✓				To get better knowledge to build a website.
21UIT3A3	Microprocessor and Assembly Language Programming			✓		To meet the requirements of appearing National Eligible Test (NET) and SET
21UIT3N11	Skill Based Non-Major- I (Social Networks)	✓		✓	✓	To prepare students for evaluating the best social media platform(s) for their business
21UIT3N12	Skill Based Non-Major- I (Hardware&Networking)	✓		✓	✓	To understand and Identify the existing configuration of the computers & peripherals.
21UIT412	Data Communication and Networks				✓	To meet the requirements of appearing National Eligible Test (NET) and SET
21UIT413	Advanced Java Programming			✓		To learn test, and debug adv. level OOP programs using Java

21UIT414	Visual Programming			✓		Create and manipulate GUI components in C#.Net and VB.Net
21UIT415	Lab. V – Programming in Advanced Java			✓		To learn test, and debug advanced-level Object-Oriented programs using Java
21UIT416	Lab. VI - Visual Programming	✓		✓		To Design and Implement Windows Applications using Windows Forms, Control Library, Advanced UI Programming & Data Binding concepts.
21UIT4A4	Software Engineering	✓	✓	✓	✓	This broad education is necessary to understand the High impact of software Engineering solutions in local and global, economic, environmental, and societal context
21UIT4N23	Skill Based Non-Major- II (Data Analytics)				✓	To Apply principles of Data Science to the analysis of business problems.
21UIT4N24	Skill Based Non-Major- II (Computer Security)			✓	✓	To prepare students with the technical knowledge and skills needed to protect and defend computer systems and networks.

21UIT517	Information Security				✓	To enhance the security of various components using algorithms globally
21UIT518	Open Source Methodologies			✓		To know about design and working principles of open source software.
21UIT5E11	Data Mining and Analytics				✓	Different types of organizations use the technology to harness the data and extract value from it.
21UIT5E12	Artificial Intelligence		✓	✓	✓	Learning and analyzing the Artificial Intelligence techniques and concepts helps in solving real world problems
21UIT5E13	E-Commerce	✓	✓	✓	✓	Utilizing this powerful E-commerce tools wisely has become eminently important for business-to-business (B2B) companies
21UIT519	Lab. VII - Open Source Methodologies			✓		To give practical knowledge on commands and editors available in linux platform.
21UIT520	Lab. VIII - Software Testing Tools			✓		Improves ability to use the techniques, skills, and to rapidly learn and apply emerging software testing technologies necessary for SW development and usage.

21UIT5S11	Skill Based Major Elective - Lab. I Web Programming (PHP)	✓	✓			To get better knowledge to build a website.
21UIT5S12	Skill Based Major Elective - Lab. I Web Programming (ASP.NET)					To get better knowledge to build a website.
21UIT621	Python Programming				✓	Design and develop Python programs in the areas related to web design, cloud computing, IoT and data analytics.
21UIT6E21	R-Programming			✓	✓	Design and develop R programs in the areas related to web design, cloud computing, IoT and data analytics.
21UIT6E22	Internet of Things			✓	✓	The functional aspect of learning IoT is to unite every object of the world under one common infrastructure;
21UIT6E23	Block Chain Technology		✓	✓	✓	Ability to link knowledge of Computer Science with other auxiliary disciplines of study.
21UIT6E31	Mobile Computing	✓		✓		To enable the Students to learn mobile techniques such as 2G, 3G, 4G & 5G
21UIT6E32	Computer Graphics		✓		✓	To motivate Students about the Computer Graphics field because they want to understand how to build fascinating applications like online games.

21UIT6E33	Cloud Computing		✓	✓	✓	To enhance the effectiveness of various businesses using cloud storage globally
21UIT622	Lab. IX - Python Programming			✓		Design and develop Python programs in the areas related to web design, cloud computing, IoT and data analytics.
21UIT623	Project				✓	To give the practical knowledge on courses studied throughout and used to develop software.
21UIT6S23	Skill Based Major Elective - Lab. II DTP Software (CorelDraw)	✓	✓			Ability to become an entrepreneur in field of advertising and marketing
21UIT6S24	Skill Based Major Elective - Lab. II DTP Software (Photoshop)	✓	✓			To Demonstrate Photoshop related and transferable skills that are relevant to industry and employment opportunity

HoD

PRINCIPAL

List of Courses having focus on employability/ entrepreneurship/ skill development offered by the Department of Information Technology

DEPARTMENT OF INFORMATION TECHNOLOGY						
PROGRAMME: B.Sc. IT			YEAR : 2021 - 2022			
COURSE	TITLE OF THE COURSE	EMPLOYABILITY (EM) / ENTREPRENEURSHIP (EN) / SKILL DEVELOPMENT(SD)			FOCUS	YEAR OF INTRODUCTION
		EM	EN	SD		
21UIT101	Programming in 'C'	✓	✓	✓	EM : Programming EN: Debugging SD: Problem Solving	2009
21UIT102	Computer System Architecture	✓	✓		EN : Logical Design EM : Model Formulation	2015
21UIT103	Lab. I - Programming in 'C'	✓	✓	✓	EM : Programming EN: Debugging SD: Problem Solving	2009
21UIT1A1	Mathematics – I (Statistics)			✓	SD: Problem Solving	2018
21UIT204	Object Oriented Programming with Java		✓	✓	EN: Application Development SD: OOP	2016
21UIT205	Data Structures			✓	SD: Memory Architecture	2009
21UIT206	Lab. II - Programming in Java			✓	EN: Application Development SD: OOP	2016
21UIT2A2	Mathematics – II (Discrete Mathematics)			✓	SD: Problem Solving	2019

21UIT307	Operating Systems		✓	✓	EM: Recent Platforms SD: System Structure	2012
21UIT308	Relational Database Management System	✓		✓	EM : Database concepts SD: Database Programming	2008
21UIT309	Service Oriented Architecture		✓		EM: Client server communication	2019
21UIT310	Lab. III – RDBMS	✓		✓	EM : Database concepts SD: Database Programming	2008
21UIT311	Lab. IV – Web Designing (HTML, CSS, JavaScript & Angular)	✓		✓	EM : Web Designing SD: Script programming	2019
21UIT3A3	Microprocessor and Assembly Language Programming			✓	SD : Hardware architecture	2008
21UIT3N1	Skill Based Non-Major- I (Social Networks)			✓	SD: Aware of social media	2019
21UIT3N2	Skill Based Non-Major- I (Hardware & Networking)	✓		✓	EM : Hardware service provider SD : Hardware architecture	2011
21UIT412	Data Communication and Networks	✓		✓	EM : Network Administration SD: Networking Concepts	2014
21UIT413	Advanced Java Programming	✓	✓	✓	EM : Application programmer EN: Application Development SD: Programming for web	2011

21UIT414	Visual Programming	✓		✓	EM: Software developer SD: Real time Application Development	2018
21UIT415	Lab. V – Programming in Advanced Java	✓	✓	✓	EM : Application programmer EN: Application Development SD: Programming for web	2011
21UIT416	Lab. VI - Visual Programming	✓		✓	EM: Software developer SD: Real time Application Development	2018
21UIT4A4	Software Engineering	✓		✓	EM: Software developer SD: Modular Programming using software models	2013
21UIT4N3	Skill Based Non-Major-II (Data Analytics)	✓		✓	EM: To become a Data Analyst SD : Learn how to analysis Data in large scale	2019
21UIT4N4	Skill Based Non-Major-II (Computer Security)	✓		✓	EM: Solving Security issues SD: Handle Security mechanisms	2011
21UIT517	Information Security	✓		✓	EM: Solving Security issues SD: Handle Security mechanisms	2018

21UIT518	Open Source Methodologies	✓		✓	EM : OS administration SD: Programming for Open source OS	2016
21UIT5E1	Data Mining and Analytics	✓	✓	✓	EM: To become a Data Analyst SD : Learn how to analysis Data in large scale	2018
21UIT5E2	Artificial Intelligence	✓	✓	✓	EM: Robotics designer SD: How to Apply AI in various domain	2012
21UIT5E3	E-Commerce		✓	✓	EN: E-Business SD: Electronic Trading	2014
21UIT519	Lab. VII - Open Source Methodologies	✓		✓	EM : OS administration SD: Programming for Open source OS	2016
21UIT520	Lab. VIII - Software Testing Tools	✓		✓	EM : Software tester SD: To learn testing tools	2014
21UIT5S1 1	Skill Based Major Elective - Lab. I Web Programming (PHP)	✓		✓	EM: Web Programmer SD: Web Designing	2013
21UIT5S1 2	Skill Based Major Elective - Lab. I Web Programming (ASP.NET)	✓		✓	EM: Web Programmer SD: Web Designing	2013
21UIT621	Python Programming	✓		✓	EM: Programmer SD: Develop new softwares using Python	2021

21UIT6E2 1	R Programming	✓	✓	✓	EM: Programmer SD: Develop new softwares using R	2021
21UIT6E2 2	Internet of Things	✓		✓	EM: Hardware Designer SD: Real time applications of IOT	2021
21UIT6E2 3	Block Chain Technology		✓	✓	EN: E-Business SD: Usage of Digital Money	2021
21UIT6E3 1	Mobile Computing	✓		✓	EM: Mobile Application Programmer SD; Learn Recent Mobile Technology	
21UIT6E3 2	Computer Graphics	✓		✓	EM: Game Programmer SD: Learn Graphics Programming	2008
21UIT6E3 3	Cloud Computing	✓	✓	✓	EM: Data analyst EN: Service Provider SD: Cloud web services	2013
21UIT622	Lab. IX – Python Programming	✓		✓	EM: Programmer SD: Develop new softwares using Python	2021
21UIT623	Project	✓	✓	✓	EN: Start an IT company SD: Learn to work with different tools and Technology	2013

21UIT6S2 3	Skill Based Major Elective - Lab. II DTP Software (CorelDraw)	✓	✓	✓	EM: Graphics Designer EN: Graphics Designer SD: Learn DTP Software	2019
21UIT6S24	Skill Based Major Elective - Lab. II DTP Software (Photoshop)	✓	✓	✓	EM: Graphics Designer EN: Graphics Designer SD: Learn DTP Software	2019

HoD

PRINCIPAL

Percentage of Revision of Department of Information Technology Syllabus under Regulation 2021 - 2022

DEPARTMENT OF INFORMATION TECHNOLOGY							
S. No.	Course	Course Name	Changes Details	% of Changes	Content Deleted	Content Updated	Reason for Change
1	21UIT414	Visual Programming	Changed	40	Unit 1 to 5 some contents and converted into 3 Units	Unit IV, V (Vb.Net Included)	Subject Expert & Course Teacher
2	21UIT416	Lab. VI - Visual Programming	Changed	40	"	Vb.Net Programs Included	Subject Expert & Course Teacher
3	20UIT5S2	Skill Based Major Elective - Lab. I Web Programming (Python)	Removed	0	NIL	NIL	Course Teacher
4	21UIT5S12	Skill Based Major Elective - Lab. I Web	New	100	All five units	All five units	Subject Expert & Course

		Programming (ASP.NET)					Teacher
	21UIT5E12	Artificial Intelligence	Changed	25	Five unit contents suffled	Five unit contents suffled	Course Teacher
5	20UIT5E3	Digital Image Processing	Removed	0	NIL	NIL	Course Teacher
6	21UIT621	Python Programming	New	100	NIL	All five units	Industry & Alumna Expert
7	20UIT622	Lab. IX - Graphics & Multimedia	Removed	0	NIL	NIL	Course Teacher
8	21UIT622	Lab. IX – Python Programming	New	100	All five units	All five units	Subject Expert
9	20UIT6E4	Embedded Systems	Removed	0	NIL	NIL	Academic Expert
10	21UIT6E22	Internet of Things	New	100	All five units	All five units	Subject Expert
11	20UIT6E8	Software Project Management	Removed	0	NIL	NIL	Course Teacher
12	21UIT6E23	Block Chain Technology	New	100	All five units	All five units	Industry Expert & Course Teacher
13	20UIT6E9	Multimedia Techniques	Removed	0	NIL	NIL	Course Teacher
14	21UIT6E21	R Programming	New	100	All five units	All five units	Subject Expert
15	21UIT623	Project	Changed	20	NIL	Rubrics	Course Teacher

HoD

PRINCIPAL

Nallamuthu Gounder Mahalingam College
Department of Information Technology
Scheme of Examination For 2021 - 2022
Choice Based Credit System & OBES

SEMESTER - I

Part	Subject Code	Title of the Paper	Hrs / Week		Hrs / Sem.	Exam Hrs.	Maximum Marks		Total Marks	Credits
			L	P	T		Internal	External		
I	21UTL101 / 21UHN101 / 21UFR101	Tamil Paper - I /	6	-	-	3	50	50	100	3
		Hindi Paper - I /	6	-	-					
		French Paper - I	6	-	-					
II	21UEN101	Communication Skills - I (Level I)	5	-	-	3	50	50	100	3
	21UEN102	Communication Skills -II (Level II)	5	-	-					
III	21UIT101	Core - I : Programming in 'C'	4	-	4	3	50	50	100	4
	21UIT102	Core - II : Computer System Architecture	5	-	-	3	50	50	100	4
	21UIT1A1	Allied - I : Mathematics - I (Statistics)	4	-	5	3	50	50	100	4
	21UIT103	Core Lab - I : Programming in 'C'	-	4	-	3	25	25	50	2
IV	21UHR101	Human Rights	1	-	-	2	-	50	50	2
	21HEC101	Human Excellence - Personal Values & SKY Yoga Practice - I	1	-	-	2	25	25	50	1
V		Extension Activities – Annexure I	-	-	-	-	-	-	-	-
CC	21CFE101	Fluency in English – I	-	-	-	-	-	-	-	-
		Online Course (Optional) (MOOC / NPTEL / SWAYAM)	-	-	-	-	-	-	-	Grade

This Syllabus is passed under BOS April 2021 and approved by CDC

Total: 650

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 Pollachi - 642 001, Coimbatore District.

SEMESTER - II										
Part	Subject Code	Title of the Paper	Hrs / Week		Hrs / Sem.	Exam Hrs.	Maximum Marks		Total Marks	Credits
			L	P	T		Internal	External		
I	21UTL202 / 21UHN202 / 21UFR202	Tamil Paper - II / Hindi Paper - II / French Paper – II	6	-	-	3	50	50	100	3
			6	-	-					
			6	-	-					
II	21UEN202	Communication Skills - I (Level I)	5	-	-	3	50	50	100	3
	21UEN203	Communication Skills -II (Level II)	5	-	-					
III	21UIT204	Core - III : Object Oriented Programming with Java	4	-	-	3	50	50	100	4
	21UIT205	Core - IV : Data Structures	4	-	-	3	50	50	100	4
	21UIT2A2	Allied - II : Mathematics II (Discrete Mathematics)	4	-	10	3	50	50	100	4
	21UIT206	Core Lab - II : Programming in Java	-	4	-	3	25	25	50	2
IV	21EVS201	Environmental Studies	2	-	-	2	-	50	50	2
	21HEC202	Human Excellence - Family Values & SKY Yoga Practice – II	1	-	-	2	25	25	50	1
V		Extension Activities - Annexure I	-	-	-	-	-	-	-	-
CC	21CFE202	Fluency in English – II	-	-	-	-	-	-	-	-
	21CMM201	Manaiyiyal Mahathuvam - I	-	-	-	2	-	50	50	Grade #
	21CUB201	Uzhavu Bharatham - I	-	-	-	2	-	50	50	Grade #
		Online Course (Optional) (MOOC NPTEL/ SWAYAM)	-	-	-	-	-	-	-	Grade

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Total:

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SEMESTER – III										
Part	Subject Code	Title of the Paper	Hrs / Week		Hrs / Sem.	Exam Hrs.	Maximum Marks		Total Marks	Credits
			L	P	T		Internal	External		
III	21UIT307	Core - V : Operating Systems	5	-	-	3	50	50	100	4
	21UIT308	Core - VI : Relational Database Management System	5	-	-	3	50	50	100	4
	21UIT309	Core - VII : Service Oriented Architecture	5	-	-	3	50	50	100	4
	21UIT3A3	Allied - III : Microprocessor and Assembly Language Programming	5	-	-	3	50	50	100	4
	21UIT310	Core Lab - III : RDBMS	-	4	-	3	50	50	100	2
	21UIT311	Core Lab - IV : Web Designing (HTML, CSS, JavaScript & Angular)	-	4	-	3	50	50	100	2
IV	21UIT3N1 / 21UIT3N2	Non Major Elective - I : Social Networks / Non Major Elective - I : Hardware & Networking	1	-	-	2	-	50	50	2
	21HEC303	Human Excellence - Professional Values & Ethics – III	1	-	-	2	25	25	50	1
CC	21CFE303	Fluency in English – III	-	-	-	-	-	-	-	-
	21CMM302	Manaiyiyal Mahathuvam - II	-	-	-	2	-	50	50	Grade #
	21CUB302	Uzhavu Bharatham - II	-	-	-	2	-	50	50	Grade #

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SEMESTER – IV										
Part	Subject Code	Title of the Paper	Hrs / Week		Hrs / Sem.	Exam Hrs.	Maximum Marks		Total Marks	Credits
			L	P	T		Internal	External		
III	21UIT412	Core - VIII : Data Communication and Networks	5	-	-	3	50	50	100	4
	21UIT413	Core - IX : Advanced Java	5	-	5	3	50	50	100	4
	21UIT414	Core - X : Visual Programming	4	-	2	3	50	50	100	4
	21UIT4A4	Allied - IV : Software Engineering	5	-	-	3	50	50	100	4
	21UIT415	Core Lab - V : Programming in Advanced Java	-	5	-	3	50	50	100	3
	21UIT416	Core Lab - VI : Visual Programming	-	4	-	3	50	50	100	3
IV	21UIT4N1 / 21UIT4N2	Non Major Elective - II : Data Analytics / Non Major Elective - II : Computer Security	1	-	-	2	-	50	50	2
	21HEC404	Human Excellence - Social Values & SKY Yoga Practice – IV	1	-	-	2	25	25	50	1
V		Extension Activities - Annexure I	-	-	-	-	-	-	50	1
CC	21CFE404	Fluency in English – IV	-	-	-	-	-	-	-	-
	21CMM403	Manaiyiyal Mahathuvam - III	-	-	-	2	-	50	50	Grade #
	21CUB403	Uzhavu Bharatham - III	-	-	-	2	-	50	50	Grade #

Total: 750

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SEMESTER – V										
Part	Subject Code	Title of the Paper	Hrs / Week		Hrs / Sem.	Exam Hrs.	Maximum Marks		Total Marks	Credits
			L	P	T		Internal	External		
III	21UIT517	Core -XI : Information Security	6	-	-	3	50	50	100	4
	21UIT518	Core - XII : Skill Enhanced Course Open Source Methodologies	5	-	5	3	50	50	100	4
	21UIT5E1 / 21UIT5E2 / 21UIT5E3	Core Elective - I : Data Mining and Analytics / Core Elective - I : Artificial Intelligence and Expert Systems / Core Elective - I : E-Commerce	6	-	-	3	50	50	100	4
	21UIT519	Core Lab - VII : Open Source Methodologies	-	5	-	3	50	50	100	3
	21UIT520	Core Lab - VIII : Software Testing Tools	-	4	-	3	25	25	50	3
	21UIT5AL	Advanced Learner Course - I Big Data Analytics (Optional)	SS		-	3	50	50	100	3*
	21UIT5VA	Designing and Animation	30 Hrs.			-	-	50	50	2*
IV	21UIT5S1 / 21UIT5S2	Skill Based Elective - I : Lab. Web Programming (PHP)/ Skill Based Elective - I : Lab. Web Programming (ASP.Net)	-	3	-	2	25	25	50	3
	21HEC505	Human Excellence - National Values & SKY Yoga Practice - V	1	-	-	2	25	25	50	1
CC	21CFE505	Fluency in English – V	-	-	-	-	-	-	-	-
	21CSD501	Soft Skills Development – I	-	-	-	-	-	-	-	Grade
	21GKL501	General Awareness - Self Study	SS		-	2	-	50	50	Grade

Total: 550

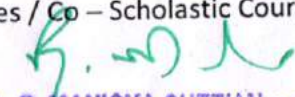
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SEMESTER – VI										
Part	Subject Code	Title of the Paper	Hrs / Week		Hrs / Sem.	Exam Hrs.	Maximum Marks		Total Marks	Credits
			L	P	T		Internal	External		
III	21UIT621	Core - XIV : Skill Enhanced Course Python Programming	5	-	-	3	50	50	100	4
	21UIT6E1 / 21UIT6E2 / 21UIT6E3	Core Elective - II : R Programming / Core Elective - II : Internet of Things / Core Elective - II : Block Chain Technology	6	-	-	3	50	50	100	4
	21UIT6E4 / 21UIT6E5 / 21UIT6E6	Core Elective - III: Mobile Computing / Core Elective - III: Computer Graphics / Core Elective - III : Cloud Computing	6	-	-	3	50	50	100	4
	21UIT622	Core Lab - IX : Python Programming	-	5	-	3	50	50	100	3
	21UIT623	Project	-	4	30	-	50	50	100	4
	21UIT6AL	Advanced Learner Course - II R - Programming Lab. (Optional)	SS				50	50	100	3*
	21UIT6VA	Basics of Block Chain Technology	30 Hrs.			-	-	50	50	2*
	21UIT6S1 / 21UIT6S2	Skill Based Elective - II : - Lab. DTP Software (Photoshop)/ Skill Based Elective - II : - Lab. II DTP Software (CoralDraw)	-	3	-	2	25	25	50	3
IV	21HEC606	Human Excellence - Global Values & SKY Yoga Practice – VI	1	-	-	2	25	25	50	1
	21CFE606	Fluency in English –VI	-	-	-	-	-	-	-	-
CC	21CSD602	Soft Skills Development – II	-	-	-	-	-	-	-	Grade
Total:									600	
Total									3900	140+10*

* Extra Credit Courses: AL - Advanced Learner Course (Optional) VA – Value Added Course. # CC - Certificate Courses / Co – Scholastic Courses
Grand Total = 3900; Total Credits = 140 + 10 Extra Credits

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Programme Code:	B.Sc. - IT		Programme Title:	Information Technology	
Course Code:	21UIT414		Title	Batch:	2021 - 2024
Lecture Hrs./Week	4	Tutorial Hrs./Sem.	2	Semester:	IV
			Visual Programming	Credits:	4

Course Objective

To understand the various concepts of C#.Net and Visual Basic .Net (Data types, Properties, Components, Inheritance, Polymorphism, Database Connectivity and Web Services).

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	To recall various statements, data types, properties, components, Indexes, Events and Attributes, etc.	K1
CO2	To Understand the basic structure of VB.Net& C#.Net and features of IDE.	K2
CO3	To make use of the basic concepts of Methods, Arrays, I/O Streams, Database Connectivity and Web Services.	K3
CO4	To analyze the various controls of OOPs, Windows Applications and Web Services.	K4
CO5	To prove the concepts into the Lab. programs.	K5

Mapping

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	H	M	-	-	M	M	-	-	M	-	-
CO2	M	H	M	-	-	M	M	-	-	M	-	H
CO3	H	H	H	H	-	M	H	M	H	H	-	-
CO4	H	H	M	-	M	M	M	-	-	H	-	H
CO5	H	H	H	H	M	M	H	M	H	H	-	H

Units	Content	Hrs. L+T
Unit I	Visual C#.Net: Introduction - Features – Data types and console I/O. Methods: (value, ref, out, params). Properties, Indexes and Operator Overloading: Introduction – Properties – Indexes – Operator overloading – Conversion operators. Inheritance and Polymorphism: Virtual methods – Abstract Classes and Abstract Methods – Sealed classes.	11
Unit II	Namespaces and Components – Namespaces – Components – Components and Namespaces – Access modifiers. Delegates, Events and Attributes. I/O Streams: Introduction – Streams – Binary Data files – Text files – Data files – File and Directory Operations.	11
Unit III	Windows applications - I. Windows applications-II. Database connectivity. Basic Web controls. Validation and list web controls: Introduction – validation – list. User and Custom web controls: Introduction – User controls – controls and custom properties, controls. Web services: Introduction – concepts – creation – Creating a web service that use data source.	12+1
Unit IV	VB.NET: Essentials – Operators - conditionals and loops – Procedures, Scope and Exception handling – Windows Forms - Text Boxes, Rich Text Boxes, Labels and Link Labels – Buttons - Checkboxes, Radio buttons, Panels and Group boxes.	12
Unit V	List boxes, Checked List Boxes, Combo boxes and Picture boxes – Scroll bars, Splitters, Track Bars, Pickers, Notify Icons, Tool Tips and Timers– Menus, Built-in Dialog boxes and printing– Image lists, Tree and List views, Toolbars, Status and progress Bars and tab. Database Access with ADO.Net. Case Study: Develop a unique application using this course.	12+1
	Total Contact Hrs.	60

Pedagogy

Direct Instruction, Digital Presentation, Flipped Class

Assessment Methods

Test, Seminar, Quiz, Assignments, Group Task.(GD/ Roll Play /APS)

Text Books

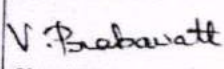
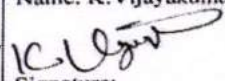
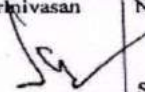
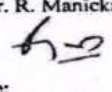
- ❖ Muthu C. (2008). *Visual C#.Net*. First Reprint. Tata Mc-Graw Hill Pub.
- ❖ Steven Holzner (2008) *Visual Basic.Net Programming Black Book*- -Dream Tech Publication.

Reference Books

- ❖ Kogent learning solutions (2011) *ASP.NET 4.0 in Simple Steps*- -Dream Tech Press Publication.
- ❖ Padmapriya .S (2011) *Web Technology* - Scitech Publications.

Web References

- ❖ <https://www.tutorialsteacher.com/csharp/first-csharp-program>
- ❖ <https://www.tutorialspoint.com/vb.net/index.html>.

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: V.Prabavathi	Name: K.Vijayakumar	Name: Mr. K.Srinivasan	Name: Dr. R. Manickachezian
			
Signature:	Signature:	Signature:	Signature:

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Programme Code:	B.Sc. - IT		Programme Title:	Information Technology	
Course Code:	21UIT416		Title	Batch:	2021 - 2024
Practical Hrs./Week	4	Tutorial Hrs./Sem.	-	Semester:	IV
			Lab - VI : Visual Programming	Credits:	3

Course Objective

To understand the practical experience in various concepts of C#.Net and VB.NET (Data types, Statements, Properties, Inheritance, Polymorphism, Multithreading, and Database Connectivity and Web Services).

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	To experiment the concepts of web-oriented programs.	K3
CO2	To motivate to create menu-based program for basic manipulation	K4
CO3	To create applications using database connectivity	K6
CO4	To Test the field elements using validator control	K6
CO5	To design the data in grid control	K6

Mapping

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	M	M	H	M	M	H	M	M	H	-	-
CO2	H	H	M	H	M	M	H	M	H	H	-	H
CO3	M	M	M	M	-	-	M	M	-	-	-	H
CO4	H	H	M	-	M	-	M	M	-	-	-	H
CO5	H	H	M	M	-	M	M	M	-	H	-	-

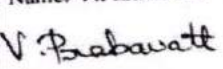
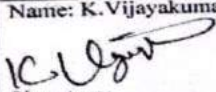
Content	Hrs.
Sample Program List TEST I (C#.NET) 1. Execute Switch Statement Display the employ details. 2. Create method overloading. 3. Create constructor overloading 4. Create student mark list using inheritance 5. Create User-Defined exception. 6. Create an application using button controls (check box, radio). 7. Generate Month calendar. 8. Create applications using controls (trackbar, panel, treeview) 9. Create applications using controls (splitter, menu dialog boxes). 10. Experiment the student details using ADO.Net. TEST II (VB.NET) 1. Create string handling function. 2. Create exception handling. 3. Generate program using VB.Net operators. 4. Create window application using text box, Rich text box 5. Create an application using button controls (check, radio, Panel). 6. Create an application using List boxes, Checked List boxes, Combo boxes and picture boxes). 7. Create an application using form controls and perform basic Manipulations. 8. Create a window application with list box, tables and panels. 9. Create application using Scroll bars, Splitters, Track bars, Pickers, Timers). 10. Create application using Image lists, Tree and list views, tool Bars, Status and Progress Bars and tab).	60
Total Contact Hrs.	60

Pedagogy

Direct Instruction, Digital Presentation

Assessment Methods:

Test, Assignments, Group task (Group Discussion)

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: V.Prabavathi	Name: K.Vijayakumar	Name: Mr. K.Srinivasan	Name: Dr. R. Manickachezian
			
Signature:	Signature:	Signature:	Signature:

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Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	21UIT5E2			Title	Batch:	2021 - 2024
Lecture Hrs./Week:	6	Tutorial Hrs./Sem.:	-	Major Elective – I	Semester:	V
				Artificial Intelligence & Expert Systems	Credits:	4

Course Objective

To embed a deep knowledge about search techniques, reasoning, game playing, expert systems and prolog.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	To Understand the nature of AI problems and task domains of AI	K1
CO2	To Apply the appropriate search procedures to solve the problems by using best algorithms.	K3
CO3	To Analyze and select the suitable knowledge representation method.	K4
CO4	To Manipulate the acquired knowledge and infer new knowledge.	K4
CO5	To Demonstrate the development of AI systems by encoding the knowledge	K5

Mapping

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	M	M	M	M	H	M	H	M	H	L	L
CO2	H	M	M	H	M	H	M	H	M	H	M	M
CO3	H	H	H	M	M	M	H	H	M	H	M	H
CO4	H	H	H	M	H	M	H	H	M	H	H	H
CO5	H	H	H	H	H	H	H	H	M	H	H	H

Units	Content	Hrs.
Unit I	Introduction: AI Problems – AI techniques – Criteria for success. Problems, Problem Spaces, Search: State space search – Production Systems – Problem Characteristics – Issues in design of Search.	18
Unit II	Heuristic Search techniques: Generate and Test – Hill Climbing – Best-First, Problem Reduction, Constraint Satisfaction, Means-end analysis.	18
Unit III	Knowledge representation issues: Representations and mappings – Approaches to Knowledge representations – Issues in Knowledge representations – Frame Problem.	18
Unit IV	Predicate Logic: Representing simple facts in logic – Representing Instance and Isa relationships – Computable functions and predicates – Resolution – Natural deduction.	18
Unit V	Representing knowledge using rules: Procedural Vs Declarative knowledge – Logic programming – Forward Vs Backward reasoning – Matching – Control knowledge Brief explanation of Expert Systems-Definition- Characteristics-architecture- Knowledge Engineering- Expert System Life Cycle-Knowledge Acquisition Strategies- Expert System Tools	18
	Total Contact Hrs.	90

Pedagogy

Direct Instruction, Digital Presentation, Flipped Class

Assessment Methods

Test, Seminar, Quiz, Assignments, Group Task.(GD/ Roll Play /APS)

Text Book

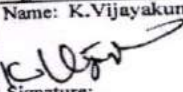
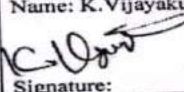
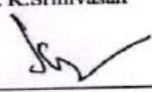
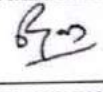
- ❖ Elaine Rich, Kevin Knight, (2009), *Artificial Intelligence*, 3rd edition, Tata McGraw Hill Publications.

Reference Books

- ❖ Stuart Russell, Peter Norvig, (2009), *Artificial Intelligence: A Modern Approach*, 3rd Edition, Pearson New International Edition.
- ❖ Er. Rajiv Chopra, (2005), *Artificial Intelligence: A Practical Approach*, 1st Edition, S. Chand Publications.

Web References

- ❖ https://www.tutorialspoint.com/artificial_intelligence/artificial_intelligence_expert_systems.htm
- ❖ <https://www.geektonight.com/artificial-intelligence-pdf>

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: K.Vijayakumar	Name: K.Vijayakumar	Name: Mr. K.Srinivasan	Name: Dr. R. Manickachezian
Signature: 	Signature: 	Signature: 	Signature: 
K.VIJAYAKUMAR, MCA., M.Phil., head, Dept. of Information Technology, NGM College (Autonomous), POLLACHI - 642 001.	K. SRINIVASAN, M.C.A., Co-ordinator Curriculum Development Cell (CDC) NGM College (Autonomous) Pollachi - 642 001.	Dr. R. MANICKACHEZIAN, M.Sc., M.S., Ph.D., Controller of Examinations NGM College (Autonomous) POLLACHI - 642 001.	

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	21UIT5S2			Title	Batch:	2021 - 2024
Practical Hrs./Week	3	Tutorial Hrs./Sem.	--	Skill Based Elective - I : Lab.	Semester:	V
				Web Programming (ASP.Net)	Credits:	3

Course Objective

To know the various scripting concepts and tags in ASP.net Programming and creating web page.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	To make use of the different controls in asp.net.	K3
CO2	To analyze various applications in the web.	K4
CO3	To create websites with database.	K6
CO4	To Test the field elements using validator control	K6
CO5	To design the data in grid control	K6

Mapping

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	H	H	H	H	M	H	M	H	H	-	H
CO2	M	H	M	H	M	-	H	-	-	H	-	-
CO3	-	H	H	H	H	M	H	M	H	H	-	H
CO4	H	H	M	-	M	-	M	M	-	-	-	H
CO5	H	H	M	M	-	M	M	M	-	H	-	-

This Syllabus is passed under BOS April 2021 and approved by CDC

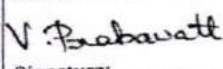
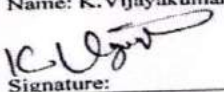
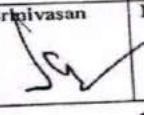
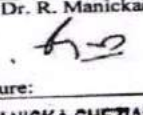
Content	Hrs.
SAMPLE PROGRAM LIST	
Test - 1 1. Execute a simple program using web controls. 2. To work with states of ASP.Net pages and Ad rotator control. 3. To work with calendar control, tree view control & validation control. 4. Develop Interaction with a user in a form with radiobuttons 5. Execute Return session id number for auser 6. Execute Get a session'stimeout	45
Test - 2 7. Execute query textbox and display records in by using database. 8. To make use of database for inserting and deleting records using database. 9. To execute data grid and its control template. 10. Develop Interaction with a user in a form that uses the "post"method. 11. Create a simple application usingdatabase.	
Total Contact Hrs.	45

Pedagogy

Direct Instruction, Digital Presentation

Assessment Methods

Test, Assignments, Group Discussion

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: V.Prabavathi Signature: 	Name: K.Vijayakumar Signature: 	Name: Mr. K. Srinivasan Signature: 	Name: Dr. R. Manickachezian Signature: 

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This Syllabus is passed under BOS April 2021 and approved by CDC

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	21UIT621			Title	Batch:	2021 - 2024
Lecture Hrs./Week	5	Tutorial Hrs./Sem.	-	Skill Enhanced Course:	Semester:	VI
				Python Programming	Credits:	4

Course Objective

To understand various concepts of Python and expertise in Python programming knowledge

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	To recollect basic programming concepts	K1
CO2	To understand and familiar with the basic coding in python	K2
CO3	To apply python terminologies for developing applications in small scale	K3
CO4	To figure out advanced concepts in python for developing web based	K4
CO5	To assess the data analysis tools usage in python.	K5

Mapping

PO/ PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	H	L	L	L	M	M	L	L	M	M	M
CO2	H	H	L	L	L	M	M	L	L	M	M	M
CO3	H	H	L	L	L	M	H	M	L	L	L	L
CO4	H	H	H	L	L	L	H	H	H	H	M	M
CO5	L	L	M	H	M	L	M	L	H	H	M	M

Units	Content	Hrs.
Unit I	Python Basics – I: Introduction – Basic Concepts. Python Basics – II: Introduction – Data types – Mutable Vs Immutable-Input to python-Modular Programming and python Modules.	15
Unit II	Operators in python- Functions: Introduction-Need-Basics-Defining functions-Passing Variables- Function Arguments-Additional note on Modules-Special functions.	13
Unit III	Flow control – Strings: Creation, Initialization and Accessing elements- Traversing – String Operations-Difference between function, method and Attributes – Lists: Introduction-Basic concepts-Creating, Traversing and slicing Lists- List Functions and Methods- Nested list and using them as matrix.	12
Unit IV	Dictionaries: Introduction- Basics- Concepts-Functions and Methods-Dictionary Methods-View Objects. Tuples: Introduction-Basic concepts-Additional topics- Regular Expression: Basic concepts- Special characters, Groups of characters and Anchors-Understanding Re Module- Match object-Important Methods.	17
Unit V	File Operations: Introduction – Basics –Reading and Writing- Advanced concepts. Pandas: Open Source Data Analysis and Manipulation Tool: Introduction- Basics-Using Pandas for files.	18
	Total Contact Hrs.	75

Pedagogy

Direct Instruction, Digital Presentation, Flipped Class

Assessment Methods

Test, Seminar, Quiz, Assignments

Text Book

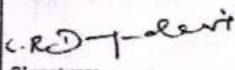
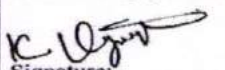
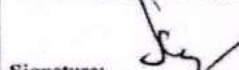
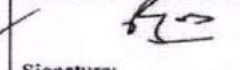
- ❖ Anurag Gupta, G. P. Biswas, (2020), Python Programming – Problem Solving, Packages And Libraries, Mc Graw Hill Publications.

Reference Books

- ❖ Sheetal Taneja and Naveen Kumar, (2018) “Python programming A Modular Approach with Database, Mobile, and Web Applications” Pearson India Education Services.
- ❖ Chris Meyers Allen Downey, Jeffrey Elkner. (2015). Learning with Python DreamTech Press, Kindle Edition.

Web References

- ❖ <https://www.youtube.com/watch?v=ApMSoHn1cM4>
- ❖ <https://www.youtube.com/watch?v=eaXiOpnRYDE>

Course Designed by Name and Signature	Verified by HOD Name and Signature	Checked by CDC	Approved by COE
Name: C.R. Durga devi  Signature:	Name: K. Vijayakumar  Signature:	Name: Mr. K. Srinivasan  Signature:	Name: Dr. R. Manickachezian  Signature:

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Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	21UIT6E1			Title	Batch:	2021 - 2024
Lecture Hrs./Week	6	Tutorial Hrs./Sem.	-	Major Elective – II	Semester:	VI
				R Programming	Credits:	4

Course Objective

To provide understanding of various concepts of R Programming like functions, variables, data types and standardizing etc.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	To keep in mind a broad understanding of techniques of R Programming	K1
CO2	To understand the structural design of R Programming	K2
CO3	To apply R Programs in real time	K3
CO4	To analyze the issues associated with R Programming	K4
CO5	To Determine the various concepts of R Programming	K5

Mapping

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	L	M	H	H	H	H	M	H	H	H	M	M
CO2	L	M	H	H	M	M	H	M	H	M	M	H
CO3	M	H	H	M	M	H	H	M	M	H	M	M
CO4	M	M	M	L	M	M	M	H	H	M	M	M
CO5	M	L	L	M	M	L	M	M	M	L	M	M

Units	Content	Hrs.
Unit I	Introduction: Goals – Installing - Choosing an IDE: Emacs/ESS – Eclipse/Architect – Rstudio – Revolution-R – Live-R – Others. A Scientific Calculator: Goals – Operations and Vectors – Assigning Variables – Special Numbers – Logical vectors. Inspecting variables and your workspace: Classes – types and Numbers – other classes – Checking and Changing – Examining – workspace. Vectors, Matrices and Arrays.	18
Unit II	Lists and Data formats: Lists – Creation – Atomic and Recursive – Dimension and arithmetic – Indexing – Conversion – Combination – Data frames – Creation – indexing – Manipulation. Environments and functions: Environments – Functions – Creation – passing functions to and from other functions – variable scope. Strings and factors.	19
Unit III	Flow control and Loops: Flow control – Loops. Advanced Looping: Replication – Looping over lists – arrays – Multiple input apply – Split-apply-combine – the plyr package. Packages: Loading Packages – Installing – Maintaining.	17
Unit IV	Dates and Times: Date and time classes – Conversion to and from Classes- Time zones – Arithmetic and Dates and Times – Lubridate. The Data Analysis workflow: Getting data: Built in Datasets – Reading Text Files – Binary Files – Web data – Accessing Databases.	17
Unit V	Cleaning and Transforming: Cleaning Strings – Manipulating Data Frames – Sorting – Functional Programming. Exploring and Visualizing: Statistics Summary – Three Plotting Systems – Scatter Plots – Line Plots – Histograms – Box Plots – Bar charts – Other packages and Systems.	19
Total Contact Hrs.		90

Pedagogy

Seminar, Digital Presentation, Chalk and talk.

Assessment Methods

Test, Quiz, Assignment, Group task.

Text Book

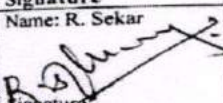
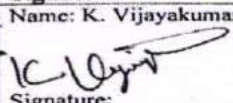
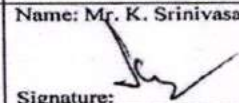
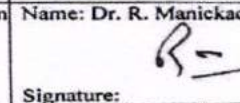
- ❖ Richard Cotton, (2019) *A step by step Function Guide to Data Analysis – Learning R*. Shroff Publishers & Distributors Pvt. Ltd. ISBN: 978-93-5110-286-1

Reference Books

- ❖ Nina Zumel, (2014) *Practical Data Science with R*, Dreamtech Press Publisher, ISBN: 9789351194378.
- ❖ Hadley Wickham, (2019) *Advanced R*, Second Edition, CRC Publisher, ISBN: 978-0815384571, 2019

Web References

- ❖ <https://maker.pro/linux/tutorial/basic-linux-commands-for-beginners>
- ❖ <https://www.tutorialspoint.com/android/index.htm>

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: R. Sekar	Name: K. Vijayakumar	Name: Mr. K. Srinivasan	Name: Dr. R. Manickachezian
Signature: 	Signature: 	Signature: 	Signature: 

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Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	21UIT6E2			Title	Batch:	2021 - 2024
Lecture Hrs./Week	6	Tutorial Hrs./Sem.	-	Major Elective II:	Semester:	VI
				Internet of Things (IoT)	Credits:	4

Course Objective

Understand about the definition and usage of Internet of things and the key components of IoT system.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	To remember the various concepts of IoT.	K1
CO2	To Understand the basic concepts of M2M and sensors	K2
CO3	To apply the concepts into the embedded devices	K3
CO4	To analyze the various privacy issues.	K4
CO5	To evaluate software design for IoT applications	K5

Mapping

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	M	L	L	L	H	M	M	-	M	-	M
CO2	-	M	L	M	-	M	M	L	L	L	-	M
CO3	M	M	M	M	-	H	-	M	-	-	-	L
CO4	M	M	H	L	L	M	L	H	-	-	-	L
CO5	-	M	L	H	L	M	-	-	-	M	-	-

Units	Content	Hrs.
Unit I	IoT: Overview – Introduction – Conceptual Framework – Architectural View – Technology Behind – Sources – M2M Communication – Examples.	16
Unit II	Design Principles for Connected Devices: Introduction – IoT/M2M Systems Layers and Design Standardization – Communication Technologies – Data Enrichment, Consolidation and Device Management at Gateway – Designing and Affordability.	16
Unit III	Data Acquiring, Organizing, Processing and Analytics: Introduction – Data Acquiring and Storage – Organizing the data – Transactions, Business Processes, Integration and Enterprise Systems – Analytics – Knowledge Acquiring, Managing and Storing Processes.	18
Unit IV	Sensors, Participatory Sensing, RFIDs, and Wireless Sensor Networks: Introduction – Sensor Technology – Participatory Sensing, Industrial and Automotive IoT – Actuator – Sensor Data Communication Protocols – RF Identification Technology – Wireless Sensor Network Technology.	20
Unit V	Prototyping and Designing the Software for IoT Applications: Introduction – Prototyping Embedded Device Software – Devices, Gateways, Internet and Web/Cloud Services Software Development – Prototyping Online Component APIs and Web APIs. IoT Privacy, Security and Vulnerabilities Solutions: Introduction – Vulnerabilities, Security Requirements and Threat Analysis – IoT Security Tomography and Layered Attacker Model – Security Models, Profiles and Protocols.	20
	Total Contact Hrs.	90

Pedagogy

Direct Instruction, Digital Presentation, Flipped Class

Assessment Methods:

Test, Seminar, Quiz, Assignments, Group Task.(GD)

Text Book

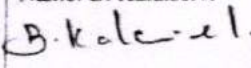
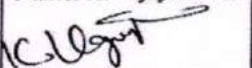
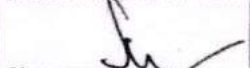
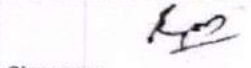
- ❖ Raj Kamal, (2019), *Internet of Things Architecture and Design Principles*, 4th Reprint, McGraw Hill Education.

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- ❖ Vijay Madisetti and Arshdeep Bahga, (2014), *Internet of Things (A Hands-on-Approach)*, 1st Edition, VPT
- ❖ Margolis, Michael (2011) *Arduino Cookbook: Recipes to begin, Expand and Enhance Your Projects*. O'Reilly Media Inc.
- ❖ Monk, Simon. Raspberry Pi (2016) *Cookbook: Software and hardware problems and Solutions*. O'Reilly Media Inc.

Web References

- ❖ https://onlinecourses.swayam2.ac.in/aic20_sp06/preview
- ❖ https://onlinecourses.swayam2.ac.in/arp19_ap79/preview

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: B. Kalaiselvi	Name: K. Vijayakumar	Name: Mr. K. Srinivasan	Name: Dr. R. Manickachezian
			
Signature:	Signature:	Signature:	Signature:

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Programme Code:	B.Sc. - IT	Programme Title:	Information Technology	
Course Code:	21UIT6E3	Title	Batch:	2021 - 2024
Lecture Hrs/Week:	6	Tutorial Hrs./ Sem.	-	
		Major Elective - II	Semester:	VI
		Block Chain Technology	Credits:	4

Course Objective

To understand the fundamentals of block chain and cryptocurrency, influence and role of block chain in various fields.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	To keep in mind the fundamentals of blockchain technology and crypto currency	K1
CO2	To understand the mining mechanism in blockchain.	K2
CO3	To apply and identify security measures, and various types of services that allow people to trade and transact with bitcoin.	K3
CO4	To analyze security, privacy, and efficiency of a given Blockchain system.	K4
CO5	To explain the Blockchain technology in various fields.	K5

Mapping

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	H	H	H	-	H	M	-	H	H	H	H
CO2	M	-	H	M	M	-	M	M	H	-	M	-
CO3	M	H	-	H	H	M	-	H	-	H	H	H
CO4	H	-	H	H	H	-	H	-	M	M	H	-
CO5	H	H	-	H	-	H	M	H	-	H	-	H

Units	Content	Hrs.
Unit I	Introduction to Blockchain: The big picture of the industry – size, growth, structure, players. Bitcoin versus Cryptocurrencies versus Blockchain - Distributed Ledger Technology (DLT). Strategic analysis of the space – Blockchain platforms, regulators, application providers. The major application: currency, identity, chain of custody.	18
Unit II	Network and Security: Advantage over conventional distributed database, Blockchain Network, Mining Mechanism, Distributed Consensus, Blockchain 1.0, 2.0 and 3.0 – transition, advancements and features. Privacy, Security issues in Blockchain.	19
Unit III	Cryptocurrency: Cryptocurrency - History, Distributed Ledger, Bitcoin protocols -Symmetric-key cryptography - Public-key cryptography - Digital Signatures - High and Low trust societies - Types of Trust model: Peer-to-Peer, Leviathan, and Intermediary. Application of Cryptography to Blockchain.	18
Unit IV	Cryptocurrency Regulation: Cryptocurrency Regulation - Stakeholders, Roots of Bit coin, Legal views - exchange of cryptocurrency - Black Market - Global Economy. Crypto-economics – assets, supply and demand, inflation and deflation – Regulation.	18
Unit V	Challenges in Block Chain: Opportunities and challenges in Block Chain – Application of block chain: Industry 4.0 – machine to machine communication – Data management in industry 4.0 – future prospects. Block chain in Health 4.0 - Blockchain properties - Healthcare Costs - Healthcare Quality - Healthcare Value - Challenges for using blockchain for healthcare data.	16
	Total Contact Hrs.	90

Pedagogy

Digital Presentation, Chalk and talk, Flipped class.

Assessment Methods

Seminar, Assignment, Group task.

Text Books

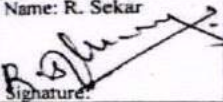
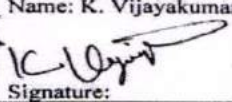
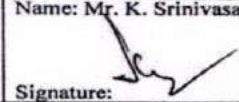
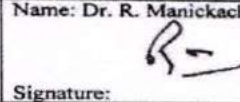
- ❖ Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller and Steven Goldfeder, (2016), *"Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction"*, Princeton University Press.
- ❖ Antonopoulos, *"Mastering Bitcoin: Unlocking Digital Cryptocurrencies"* (2014), 1st Edition, O'Reilly Media.

Reference Books

- ❖ Satoshi Nakamoto, *"Bitcoin: A Peer-to-Peer Electronic Cash System"* (2008), SSRN electronic Journal.
- ❖ Rodrigo da Rosa Righi, Antonio Marcos Alberti, Madhusudan Singh, (2020), *"Blockchain Technology for Industry 4.0"*, Springer.

Web References

- ❖ <https://www.slideshare.net/Mithileysh/blockchain-technology-181440314>
- ❖ <https://www.slideshare.net/asrithak/blockchain-technology-ppt>

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: R. Sekar Signature: 	Name: K. Vijayakumar Signature: 	Name: Mr. K. Srinivasan Signature: 	Name: Dr. R. Manickachezian Signature: 

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Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	21UIT622			Title	Batch:	2021 - 2024
Practical Hrs./Week	5	Tutorial Hrs./Sem.	-	Lab. IX – Python Programming	Semester:	VI
					Credits:	3

Course Objective

To apply various concepts like string handling, mathematical functions, control structure and files in Python language.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	To deploy the list and tuple using control structures	K3
CO2	To examine need of files and its related functions	K4
CO3	To choose various packages suitable for the application	K5
CO4	To verify the usage of various in built functions and packages	K5
CO5	To create an application using python as a developing tool	K6

Mapping

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	M	M	L	L	L	M	M	L	M	L	L	L
CO2	L	M	L	L	L	M	M	L	M	M	L	L
CO3	L	M	L	L	L	M	H	H	H	L	L	L
CO4	M	M	L	M	L	M	H	H	M	L	L	L
CO5	L	M	L	L	L	M	H	H	H	M	L	L

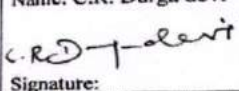
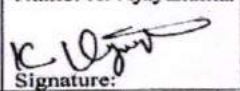
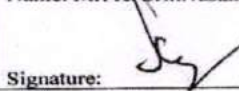
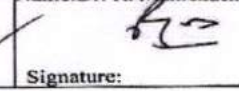
Content	Hrs.
SAMPLE PROGRAM LIST 1. Develop a program to read a number n and print an inverted star pattern of the desired size. 2. Develop a program to search the number of times a particular number occurs in a list. 3. Develop a program to read a list of words and return the length of the longest one 4. Develop a program to take a string and replace every blank space with a hyphen 5. Develop a program to check if a given key exists in a dictionary or not 6. Create a program to check common letters in the two input strings 7. Apply recursion to reverse a string 8. Develop a program to read the contents of a file. 9. Assess the area of a rectangle using classes. 10. Test for reading a string from the user and appends it into a file.	75
Total Contact Hrs.	75

Pedagogy

Direct Instruction, Digital Presentation

Assessment Methods

Test, Assignments, Group Task(GD)

Course Designed by Name and Signature	Verified by HOD Name and Signature	Checked by CDC	Approved by COE
Name: C.R. Durga devi  Signature:	Name: K. Vijayakumar  Signature:	Name: Mr. K. Srinivasan  Signature:	Name: Dr. R. Manickachezian  Signature:

K. VIJAYAKUMAR, MCA., M. PHIL.,
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Dr. R. MANICKACHEZIAN, M.Sc., M.S., Ph.D.
Controller of Examinations
NGM College (Autonomous)
POLLACHI - 642 001.

This Syllabus is passed under BOS April 2021 and approved by CDC

Programme Code:	B.Sc. - IT			Programme Title:	Information Technology	
Course Code:	21UIT623			Title	Batch:	2021 - 2024
Practical Hrs./Week:	4	Tutorial Hrs./Sem.	30	Project	Semester:	VI
					Credits:	4

Course Objective

To learn depth knowledge about tools used in software application development, web designing & web technologies and understand the usage of front end and back end tools.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	To create database, tables, coding	K6
CO2	To apply the coding into System side	K3
CO3	To apply various tools in real time Applications/Software	K3
CO4	To analyze the system requirements of the Application /Software	K4
CO5	To verify the developed Application with the customer requirements	K5
CO6	Evaluate the Applications/Softwares through the stake holder	K6

Mapping

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	H	M	H	H	H	M	H	M	H	M	M	M
CO2	H	M	H	H	H	M	H	M	M	H	M	M
CO3	H	H	M	M	H	M	H	M	M	H	M	M
CO4	H	H	H	H	H	H	H	H	H	H	H	M
CO5	H	H	H	M	H	M	H	H	H	H	H	H
CO6	H	H	H	H	H	H	H	M	H	H	H	H

INFORMATION TECHNOLOGY PROJECT and VIVA VOCE

Guidelines

Introduction

The title of the project work and the organization will be finalized at the end of fifth Semester. Each student will be assigned with a Faculty for guidance. The Project work and coding will be carried by using the facility of computer science lab as well as in the organization. Periodical review will be conducted to monitor the progress of the project work. Project report will be prepared and submitted at the end of the semester. External examiner appointed by the Controller of Examination will conduct the viva voce examination along with respective guide.

Area of Work

- Web Based Development
- Mobile app development
- Website development
- IoT Projects
- Big Data and Data Mining Projects
- Cloud Computing Projects
- Networking Projects
- Artificial Intelligence and Machine learning Projects
- Data Analytics Projects using Python, R, Tableau etc..
- System Software
- Web Security Projects
- Image Processing

Methodology

Arrangement of Contents:

The sequence in which the project report material should be arranged and bound as follows:

1. Cover Page & Title Page
2. Bonafide Certificates
3. Declaration
4. Acknowledgement
5. Synopsis
6. Table of Contents
7. Chapters
8. Appendix
9. References

Format of Table of Contents

TABLE OF CONTENTS

Chapter No.	Title	Page No.
i	Certificates	
ii	Declaration	
iii	Acknowledgement	
iv	Synopsis	
1.	Introduction	
	Introduction	
	Objective of the Project	
	Company Profile	
	System Specification	
	Hardware Specification	
	Software Specification	
2	System Study	
	Existing System	
	2.1.2 Drawbacks	
	Proposed System	
	Planning and Scheduling	
3	System Design	
	Overview of the Project	

	Modules of the Project
	Input Design Format
	Output Design
	Table Design
	Supporting Diagrams (ER/DFD/Use Case)
4	Implementation and Testing
	Coding Methods
	Testing Approach
	Implementation and Maintenance
5	Project Evaluation
	Project Outcome
	Limitation of the Project
	Further Scope of the Project
6	Conclusion
7	Appendix
	Source Code
	Screenshots and Reports
8	References

Size of the Project

Content	Hrs. P+T
Using only the following Elective Tools Front end, Multimedia & Web based tools: 1. Java & Advanced Java 2. Angular & Javascript 3. PHP 4. Python 5. C#.NET & VB.NET 6. HTML 5.0 7. Flash 8. R - Programming Back end tools: 1. MySQL 2. Oracle 8i & above 3. MS Access 2007 4. SQL Server 2000 and Above Note: Project Internship (upto System Study) going to fourth semester Vacation and submit their report on fifth semester	30+30
Total Contact Hrs.	60

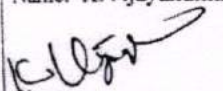
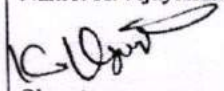
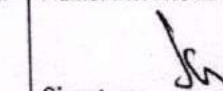
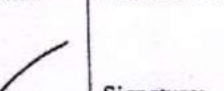
The Project Report contents should be maximum of not exceeding 70 pages.

Pedagogy

Direct Instruction, Digital Presentation

Assessment Methods

Assignments, Reviews, Group Task (GD/APS)

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: K.Vijayakumar  Signature:	Name: K.Vijayakumar  Signature:	Name: Mr. K.Srinivasan  Signature:	Name: Dr. R. Manickachezian  Signature:

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