



## **Nallamuthu Gounder Mahalingam College**

(An Autonomous Institution, Affiliated to Bharathiar University)

90, Palghat Road, Pollachi - 642001, Coimbatore, Tamil Nadu, India.

95<sup>th</sup> Rank in NIRF –2023 - Among Colleges in India.



# **LIST OF SELF LEARNING COURSES INTRODUCED**

**NALLAMUTHU GOUNDER MAHALINGAM  
COLLEGE (AUTONOMOUS)**



**U.G. DEPARTMENT OF COMPUTER TECHNOLOGY  
(C.T.)**



**SYLLABUS**

**2022 – 2025 Batch**

**(With Effect From 2022-2025 Batch and  
Onwards)**

**DEPARTMENT OF COMPUTER TECHNOLOGY**

# **Syllabus**

**BATCH: 2022 – 2025**

## **Faculty Members**

Dr. M. Rajasenathipathi, M.C.A., M. Phil., Ph.D.,

Ms. C. Keerthana, M.Sc., M. Phil., (Ph.D).,

Ms. K. S. Leelavathi, M.Sc., M. Phil., NET., SET., (Ph.D).,

Dr. R. Jayaprakash, M.C.A., M.Phil., Ph.D.,

Ms. A. Kalaivani, M.C.A., M. Phil., (Ph.D).,



**Nallamuthu Gounder Mahalingam College**

**An Autonomous Institution affiliated to Bharathiar University**

**Re-Accredited by NAAC and ISO 9001:2015 Certified Institution**

**Pollachi – 642 001.**

## **NGM College**

### **Vision**

Our dream is to make the college an institution of excellence at the national level by imparting quality education of global standards to make students academically superior, socially committed, ethically strong, spiritually evolved and culturally rich citizens to contribute to the holistic development of the self and society.

### **Mission**

Training students to become role models in academic arena by strengthening infrastructure, upgrading curriculum, developing faculty, augmenting extension services and imparting quality education through an enlightened management and committed faculty who ensure knowledge transfer, instill research aptitude and infuse ethical and cultural values to transform students into disciplined citizens in order to improve quality of life.

## **Department of Computer Technology**

### **Vision**

To continue to be the Premier Department for Computer Technology and to become regionally top-ranked and nationally recognized for Academic Excellence

### **Mission**

- To offer a broad-based education, encourage lifelong learning, foster teamwork, promote creativity, discovery and competitiveness
- To turn out highly qualified graduates into world-class professionals capable of competing in the IT Arena as well as in a research environment

## Program Educational Objectives:

PEO1	Demonstrating the concepts and technologies of Software Industry
PEO2	Motivate to select one domain knowledge and develop smart software solutions as per industry standard
PEO3	Focus to solve real time problems in terms of various technologies.
PEO4	Understand the concepts of software project life cycle during software development.
PEO5	Apply the knowledge of various levels of security in computer field.

## Program Outcomes:

PO1	<i>Problem solving:</i> Under Graduate students are to apply, algorithmic, real time and Industry standard reasoning to a variety of computational problems.
PO2	<i>Problem solving:</i> Understand the fundamental knowledge of various domains in IT Industry and change their carrier as per industry Demand.
PO3	<i>Self-directed learning :</i> Combine the knowledge of mathematics and Software Technologies in the field of Software project development
PO4	<i>Information/digital literacy: Implement</i> industry standard projects of their own choice using latest tools.
PO5	<i>Analytical reasoning:</i> Improve the aptitude skill to clear various levels of entrance exams in their carrier.
PO6	<i>Physical and mental wellness:</i> The Under Graduate students are recognize the Human Excellence and ethical responsibilities through yoga in various disciplines
PO7	<i>Reflective thinking and Communication Skills:</i> Demonstrate global Industry demand related subjects and transferable skills that a relevant to global industry and employment opportunities
PO8	<i>Self-directed learning :</i> Graduates will recognize the need for self-motivation and Life Long Learning to update in technologies to be in par with changing technology.
PO9	<i>Cooperation/Team work:</i> Ability to analyze the local and global impact of computing on individuals, organizations and society.
P10	<i>Multicultural competence:</i> Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.

### Program Specific Outcomes:

PSO – 01	<i>Academic skills and abilities:</i> Acquire academic excellence with professional skill for employment and higherstudies.
PSO – 02	<i>Explore Software Development Solutions:</i> Create, select and apply modern tools and techniques to analyze and developsuccessful software in IT Industry.

### Mapping

PEO PO	PEO1	PEO2	PEO3	PEO4	PEO5
PO1	H	M	M	M	L
PO2	H	L	H	M	M
PO3	H	H	M	M	L
PO4	H	M	H	H	H
PO5	M	H	L	H	M
PO6	H	M	H	M	L
PO7	H	L	H	H	M
PO8	M	H	M	H	M
PO9	H	M	M	H	H
PO10	M	M	L	H	H
PSO-01	H	H	H	H	H
PSO-02	H	H	H	H	H

\*H-High; M-Medium; L-Low

**Nallamuthu Gounder Mahalingam College - Curriculum Development Cell**  
**Scheme of Examination For 2022 - 2025**  
**Choice Based Credit System & OBES**

**For Part I and Part II in First & Second Semesters Only**

**SEMESTER - I**

Part	Subject Code	Title of the Paper	Hrs / Week		Hrs / Sem.	Exam Hrs.	Maximum Marks		Total Marks	Credits
			L	P			Internal	External		
I	22UTL101 / 22UHN101 / 22UFR101	Tamil Paper - I /	6	-	-	3	50	50	100	3
		Hindi Paper - I /		-	-					
		French Paper - I		-	-					
II	22UEN101	Communication Skills - I (Level I)	5	-	-	3	50	50	100	3
	22UEN102	Communication Skills - I (Level II)		-	-					
III	22UCT101	CORE - I : Programming in C	4	-	-	3	50	50	100	4
	22UCT102	CORE II: Digital Fundamentals and Computer Organization	4	-	-	3	50	50	100	4
	22UCT1A1	ALLIED I: Mathematics - I; Mathematical Structures For Computer Science	5	-	-	3	50	50	100	4
	22UCT103	CORE LAB -I : Programming in C	-	4	0	3	25	25	50	2
IV	22UHR101	Human Rights	1	-	-	2	-	50	50	2
	22HEC101	Human Excellence - Personal Values & SKY Yoga Practice - I	1	-	-	2	25	25	50	1
V		Extension Activities - Annexure I	-	-	-	-	-	-	-	-
EC	22CFE101	Fluency in English - I	-	-	-	-	-	-	-	-
		Online Course (Optional) (MOOC / NPTEL / SWAYAM)								Grade
<b>Total</b>			<b>26</b>	<b>4</b>	<b>0</b>	<b>22</b>	<b>300</b>	<b>350</b>	<b>650</b>	<b>23</b>

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	22UTL202 / 22UHN202 / 22UFR202	Tamil Paper - II / Hindi Paper - II / French Paper - II	6	-	-	3	50	50	100	3
		-		-						
		-		-						
II	22UEN202	Communication Skills – II ( Level I )	5	-	-	3	50	50	100	3
	22UEN203	Communication Skills – II ( Level II )		-	-					
III	22UCT204	CORE III: Java programming	4	-	-	3	50	50	100	4
	22UCT205	Core - IV :Data Structures	4	-	-	3	50	50	100	4
	22UCT2A2	Allied - II : Mathematics II – Operations Research	4	-	-	3	50	50	100	4
	22UCT206	Core Lab - II : Java programming Lab	-	4	-	3	25	25	50	2
IV	22EVS201	Environmental Studies	2	-	-	2	-	50	50	2
	22HEC202	Human Excellence - Family Values & SKY Yoga Practice - II	1	-	-	2	25	25	50	1
V		Extension Activities - Annexure I	-	-	-	-	-	-	-	-
EC	22CFE202	Fluency in English – II	-	-	-	-	-	-	-	-
	22CMM201	Manaiyiyal Mahathuvam - I	1	-	-	2	-	50	50*	Grade
	22CUB201	Uzhavu Bharatham – I	1	-	-	2	-	50	50*	Grade
		Online Course (Optional) (MOOC / NPTEL / SWAYAM)								
<b>Total</b>			<b>26</b>	<b>4</b>	<b>-</b>	<b>26</b>	<b>300</b>	<b>350</b>	<b>650</b>	<b>23</b>



**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		
I	22UTL3C3	Tamil Paper - III	3		-	3	50	50	100	3
II	23UEN3C3	Communication Skills – III	3		-	3	50	50	100	3
III	22UCT307	Core Course V: Advanced Java Programming	5		6	3	50	50	100	3
	22UCT308	Core Course VI: Database Management System	4		8	3	50	50	100	3
	22UCT3A3	GE: Allied - III : Software Engineering	5		6	3	50	50	100	4
	22UCT309	Core Course Lab-III: Advanced Java Programming Lab	-	4	0	3	25	25	50	2
	22UCT310	Core Course Lab IV: Database Management System Lab	-	4	0	3	25	25	50	2
IV	22UCT3N1 / 22UCT3N2	Non Major Elective - I : HTML Lab / Multimedia Lab	1	-	-	2	-	50	50	2
	22HEC303	Human Excellence - Professional Values & Ethics – III	1	-	-	2	25	25	50	1
V		Extension Activities - Annexure I	-	-	-	-	-	-	-	-
EC	22CFE303	Fluency in English – III	-	-	-	-	-	-	-	-
	22CMM302	Manaiyiyal Mahathuvam - II	1	-	-	2	-	50	50*	Grade
	22CUB302	Uzhavu Bharatham – II	1	-	-	2	-	50	50*	Grade
<b>Total</b>			<b>22</b>	<b>8</b>	<b>24</b>	<b>28</b>			<b>700</b>	<b>23</b>

**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		
I	22UTL4C4	Tamil Paper - IV	3		-	3	50	50	100	3
II	23UEN4C4	Communication Skills – IV	3		-	3	50	50	100	3
III	22UCT411	Core Course VII: Python Programming	4		4	3	50	50	100	4
	22UCT412	Core Course VIII: LinuxAnd Shell Programming	4		4	3	50	50	100	3
	22UCT4A4	GE IV : Allied IV: Data Communication And Networks	4		3	3	50	50	100	3
	22UCT413	Core Course Lab - V: Python Programming Lab		4	0	3	25	25	50	2
	22UCT414	Core Course Lab - VI : LinuxAnd Shell ProgrammingLab		4	0	3	25	25	50	2
	23UCT4S1/ 23UCT4S2	SEC II: Naan Mudhalvan : Desktop Publishing Lab / PC Hardware & Troubleshooting		2	2	-	25	25	50	2
IV	22UCT4N3/ 22UCT4N4	Non-Major Elective II – Office Automation Lab / CoreIDraw Lab	-	1	-	2	-	50	50	2
	22HEC404	Human Excellence – Social Values & SKY Yoga Practice –IV	1	-	-	2	25	25	50	1
V		Extension Activities – Annexure I	-	-	-	-	-	-	50	1
EC	22CFE404	Fluency in English – IV	-	-	-	-	-	-	-	-
	22CMM403	Manaiyiyal Mahathuvam – III	1	-	-	2	-	50	50*	Grade
	22CUB403	Uzhavu Bharatham – III	1	-	-	2	-	50	50*	Grade
<b>Total</b>			<b>19</b>	<b>11</b>	<b>14</b>	<b>28</b>			<b>800</b>	<b>26</b>

**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	100	
III	22UCT515	Core Course IX: Open Source Technologies	6	-	2	3	50	50	100	5
	22UCT516	Core Course X: Information Security	6	-	2	3	50	50	100	5
	22UCT5E1 / 22UCT5E2 / 22UCT5E3	DSE – I :Cloud Computing / Embedded Systems / Fundamentals of Block chain Technology	6		2	3	50	50	100	5
	22UCT517	Core Course Lab – VII: Open Source Technologies	-	5	0	3	25	25	50	2
	22UCT518	Core Course Lab – VIII: Web Designing	-	4	0	3	25	25	50	2
	22UCT5S1 / 22UCT5S2	Skill Based Major Elective I: R programming Lab / Scripting Language Lab		2		2	25	25	50	2
IV	22HEC505	Human Excellence – National Values & SKY Yoga Practice – V	1	-	-	2	25	25	50	1
V		Extension Activities – Annexure I	-	-	-	-	-	-	-	-
EC	22CFE505	Fluency in English – V	-	-	-	-	-	-	-	-
	22CSD501	Soft Skills Development – I	-	-	-	-	-	-	-	Grade
	22GKL501	General Awareness –Self Study (Online) (SBE) (Optional)	SS		-	2	-	50	50*	Grade
	22UCT5AL	Advanced Learner Course – I : Software Testing- Self Study (Optional)	SS		-	3	50	50	100	4*
	22UCT5VA	VAC I- IoT (Internet of Things) (Mandatory)	30 Hrs		2	-	25	25	50	2*
<b>Total</b>			<b>19</b>	<b>11</b>	<b>6</b>	<b>-</b>			<b>500</b>	<b>22</b>

**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	22UCT619	Core Course– XI : Framework Technology	6	-	8	3	50	50	100	4
	22UCT6E4 / 22UCT 6E5/ 22UCT 6E6	DSE – II : MobileComputit / Software Project Management / Grid Computing	6	-	4	3	50	50	100	5
	22UCT 6E7 / 22UCT 6E8 / 22UCT 6E9	DSE – III : Artificial Intelligence / Ethical Hacking / Machine Learning Techniques	6	-	4	3	50	50	100	4
	22UCT620	Core Course Lab – IX : Framework Technology	-	5	0	3	25	25	50	3
	22UCT621	Core Course Lab – X : Google Workspace	-	4	-	3	25	25	50	2
	22UCT622	Project	-	-	-	-	50	50	100	2
	22UCT6AL	Advanced Learner Course –II : Digital Marketing (Optional) – Self Study	SS		-	3	50	50	100*	4*
IV	22UCT6S3 / 22UCT6S4	SEC: Naan Mudhalvan: Big Data Analytics Lab / Animation Lab	-	2	0	2	25	25	50	2
	22HEC606	Human Excellence – Global Values & SKY Yoga Practice – VI	1	-	-	2	25	25	50	1
EC	22CFE606	Fluency in English – VI	-	-	-	-	-	-	-	-
	22CSD602	Soft Skills Development – II	-	-	-	-	-	-	-	Grade
	22UCT6VA	VAC-II:PC Assembly and CCTV camera Installation (Mandatory)	30 Hrs		2	-	25	25	50*	2*
<b>Total</b>			19	11	16	-	300	300	600	23
<b>Grant Total</b>									3900	140

AL – Advanced Learner Course (Optional);

EC – Extra credit/Certification Course / Co – Scholastic Course

\*\* - Credits based on course content, maximum of 4 credits

VA – Department Specific Value Added Course

\* - Extra Credits & Extra Hour Course

Grand Total = 3900;

Total Credits = 140

**K. SRINIVASAN, M.C.A.,**

Co-ordinator

Curriculum Development Cell (CDC)

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J- Pollachi - 642 001.