

NALLAMUTHU GOUNDER MAHALINGAM COLLEGE (AUTONOMOUS)-POLLACHI

1.2.1 Percentage of new courses introduced out of the total number of courses across all programmes offered during the last five years

S.No	Name of the programme	Name of the Course	Course Code	Year of introduction (during the last five years)
1	B.A. History	Indian Administration	18UHY2A2	2018
2	B.A. History	History of India from 1526 A.D to 1707 A.D	18UHY203	2018
3	B.A. History	Windows based office automation	18UHY512	2018
4	B.Sc. Botany	Major Paper IV- Anatomy and Embryology	18UBY304	2018
5	B.Sc. Botany	Major Paper V – Cytology, Biochemistry and Biophysics.	18UBY405	2018
6	B.COM IB	Modern Marketing	18UIB102	2018
7	B.COM IB	Cost and Management accounting	18UIB203	2018
8	B.COM IB	Economic Analysis	18UIB204	2018
9	B.COM IB	Statistics for Business	18UIB2A2	2018
10	BCA	PHP Programming Lab	18UBC418	2018
11	BCA	NME: DTP Programming Lab	18UBC3N2	2018
12	BCA	Computer Networks/ Grid Computing	18UBC521	2018
13	BCA	Current Trends and Technology	18UBC522	2018
14	BCA	Data Mining and Warehousing / Cloud Computing	18UBC627	2018
15	BCA	Mobile Application Development	18UBC628	2018
16	BCA	Mobile Application Development Lab	18UBC630	2018
17	B.Com	Consumer Affairs	18UCO4N4	2018
18	B.Com PA	Indirect Taxation	18UPA413	2018
19	B.Com PA	Information Technology and Security	18UPA621	2018
20	B.A. Tamil	Ikkala Illakiyam -II	18UTM102	2018
21	B.A. Tamil	Mozhi varalaru	18UTM511	2018

BOS HIGHLIGHTED



Metric : 1.2.1



New Course Introduced

Dr. R. MUTHUKUMARAN,
M.A.,M.Phil.,B.Ed.,Ph.D.,
PRINCIPAL
N.G.M. College, Pollachi - 642 001
Coimbatore District

Page No: 1



NallamuthuGounderMahalingam College

(An Autonomous Institution, Affiliated to Bharathiar University)

90,PalghatRoad,Pollachi -642001,Coimbatore, Tamil Nadu, India.

95th Rank in NIRF –2023 - Among Colleges in India.



U.G.DEPARTMENT OF COMPUTER APPLICATIONS

BOARD OF STUDIES

2018- 2019

Sl. No.	Members	Signature
①	Dr. K. Haridas. (CHAIRMAN) Head of the Department.	<u>Haridas</u>
②	Dr. E. Karthikeyan, Head & Assistant Professor, Department of Computer Science, Bharathiar University, Coimbatore - 641 046 (University nominee)	ABSENT
③	Mrs. Sumathi, Assistant Professor, Department of Computer Science, Dr. GIRD College, Coimbatore. (Subject Expert)	<u>Sumathi</u>
④	Mr. K. Senthil Prabu, Module Head, Mind Tech (India) Limited A.M.B. Tech Park, v Block-1, 3 rd Floor, #664, 23/24, Hosur main road, Bommanahalli, Bangalore - 560 068. (Industrial Expert)	<u>Senthil Prabu</u>
⑤	Dr. B. Radha, Associate Professor, Department of Computer Science, STC College, Pollachi. (Academic Auditor)	<u>Radha</u> 24/2/18
⑥	Ms. Sivasankari, Team Leader, Infosys, Chennai. (Student Alumni)	<u>Sivasankari</u> T 02/24/2018

Minutes

The Board of Studies of the U.G. Department of Computer Applications met on 24.2.2018 at 11.00 a.m under the Chairmanship of Dr. K. Haridas, Head, U.G. Dept of Comp. Applications. The board discussed on the proposed Scheme for U.G. Program for the students admitted in 2018-19 (I, II, III, IV, V & VI Semester).

The board hereby resolves to approve the proposed Scheme for the batch 2018 - 2021.

- * Office Automation Lab in III Semester should be replaced by DTP Programming and Php Programming should be introduced in the IV Semester
- * Guest Lecture should be arranged on the topic 'DFD & ER diagram' for the students before their project.
- * Framework Technologies in V Semester should be postponed to IV Semester and Object Oriented Programming using Java language in IV Semester should be postponed to V Semester.
- * The Topic 'Performance Testing' should be Included in the Software Testing unit - II in V Semester
- * In Semester V, Elective I : Computer Networks /
Grid Computing
Elective II : Organizational Behaviour /
Current Trends and Technologies
will be followed.
- * In Semester VI, Mobile Application Development Theory and Lab should be produced.
- * In Semester VI, Elective III : Data Mining and Warehousing /
Cloud Computing

Board of Studies -

78

Sl. No.	Members	Signature
⑦	Dr. S. Hemalatha	S. Hemalatha 24/2/18
⑧	Ms. J. Umamaheswari	Umamaheswari
⑨	Dr. R. Malathi Ravindran	R. Malathi Ravindran
⑩	Ms. N. Shyamala	N. Shyamala
⑪	Ms. A. Rajarajeswari	A. Rajarajeswari
⑫	Mr. S. Dilip Kumar	S. Dilip Kumar
⑬	Ms. N. Divya	N. Divya
⑭	Ms. A. Vanitha	A. Vanitha
⑮	Ms. R. Arthi	R. Arthi
⑯	Mr. A. Muruganandham	A. Muruganandham

Minutes

will be followed.

* In Semester VI, Software Industry Domains

Unit I : Healthcare

II : Banking & Insurance

III : Telecom Industries

IV : Textile Industries

V : Energy Utilities should be applied.

1. Hanra

2. ABSENT

3. P. S. Thi.

4. P. S. Thi.

5. B. Padma 24/2/18

6. S. Shankar 7 02/24/2018.

7. S. Hanra 24/2/18.

8. S. Hanra J

9. R. Hanra 24/2/18.

10. N. Shy W

11. A. Hanra

12. S. Hanra

13. N. Hanra

14. A. V. Hanra

15. R. Hanra

16. H. Hanra



Hanra
Dr. K. HARIDAS, M.C.A., M.Phil., Ph.D.,
Associate Professor & Head
Department of Computer Applications
NGM College (Autonomous), Pollachi - 642 001.

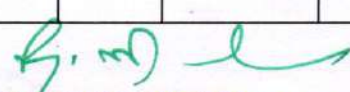
Hanra
PRINCIPAL
N G M COLLEGE, POLLACHI

NALLAMUTHU GOUNDER MAHALINGAM COLLEGE (AUTONOMOUS)
U.G.DEPARTMENT OF COMPUTER APPLICATIONS (B.C.A)
SCHEME OF EXAMINATIONS
(With effect from 2018 – 2021 batch and onwards)

I SEMESTER								
Part	Subject Code	TITLE	Duration in hours per week	Examination				Credits
				HOURS	CIA	ESE	TOTAL	
I	18UTL101/ 18UHN101 18UFR101	Tamil Paper – I/ Hindi Paper-I/ French Paper-I	6	3	25	75	100	3
II	18UEN101	English for Enrichment	6	3	25	75	100	3
		CORE PAPERS:						
III	18UBC101	Programming in C	4	3	25	75	100	4
III	18UBC102	Fundamentals of Digital Computer	4	3	25	75	100	3
III	18UBC103	Programming Lab - I: C Programming	4	3	20	30	50	2
		ALLIED:						
III	18UBC1A1	Mathematics I - Computer Oriented Numerical and Statistical Methods	4	3	25	75	100	4
IV	18HEC101	Value Education: Yoga For Physical & Mental Well Being Paper-1 : Personal Values	1	2	25	25	50	1
IV	18UHR101	Human Rights	1	2	--	50	50	2
V		Extension Activity (NSS, NCC, SPORTS)	--	--	--	--	--	--

II SEMESTER								
I	18UTL202/ 18UHN202 /18UFR202	Tamil Paper –II/Hindi Paper-II/French Paper-II	6	3	25	75	100	3
II	18UEN202	English for Enrichment Skills-II	5	3	25	75	100	3
		CORE PAPERS:						
III	18UBC204	Object Oriented Programming with C++	4	3	25	75	100	4
III	18UBC205	Computer System Architecture	3	3	25	75	100	3
III	18UBC206	Programming Lab - II: C++ Programming	4	3	20	30	50	2
		ALLIED:						
III	18UBC2A2	Marketing and HR Management	4	3	25	75	100	4
IV	18EVS201	Environmental Studies	2	2	---	50	50	2
IV	18HEC202	Value Education: Yoga For Physical & Mental Well Being Paper-II: Family Values	2	2	25	25	50	1
V		Extension Activity (NSS, NCC, SPORTS)	--	--	--	--	--	--




Dr. R. MANICKA CHEZIAN M.Sc., M.S., Ph.D.,
 PRINCIPAL i/c
 Nallamuthu Gounder Mahalingam College
 Pollachi - 642 001, Coimbatore District.

III SEMESTER								
Part	Subject Code	TITLE	Duration in hours per week	Examination				Credits
				HOURS	CIA	ESE	TOTAL	
		CORE PAPERS:						
III	18UBC307	RDBMS and Visual Programming	5	3	25	75	100	4
III	18UBC308	Shell Programming in Operating Systems	5	3	25	75	100	4
III	18UBC309	Data structures and Algorithms	5	3	25	75	100	3
III	18UBC310	Programming Lab - III: RDBMS & Visual Programming	4	3	20	30	50	2
III	18UBC311	Programming Lab - IV: OS -Commands and Shell Script Programming	4	3	20	30	50	2
III	18UBC312	Programming Lab - V: DTP Programming	1	2	20	30	50	1
III		ALLIED:						
III	18UBC3A3	Accountancy For Decision Making	4	3	25	75	100	4
IV	18HEC303	Value Education: Yoga For Physical & Mental Well Being Paper-1: Professional Values	1	2	25	25	50	1
IV	18UBC3N1	Non-Major Elective Programming Lab: Web Designing	1	2	--	50	50	2
	18UBC3N2	Non-Major Elective Programming Lab: Office Automation <i>DESKTOP PUBLISHING.</i>						
V		Extension Activity (NSS, NCC, SPORTS)	--	--	--	--	--	--

IV SEMESTER								
		CORE PAPERS:						
III	18UBC413	Framework Technologies	5	3	25	75	100	4
III	18UBC414	Introduction to Web Designing and Programming	5	3	25	75	100	4
III	18UBC415	Software Engineering	5	3	25	75	100	3
III	18UBC416	Programming Lab - VI: Framework Technologies	4	3	20	30	50	2
III	18UBC417	Programming Lab - VII: Web Designing	4	3	20	30	50	2
III	18UBC418	Programming Lab - VIII: PHP Programming	1	3	20	30	50	1
		ALLIED:						
III	18UBC4A4	Mathematics-II: Computer Based Optimization Techniques	4	3	25	75	100	4
IV	18HEC404	Value Education: Yoga For	1	2	25	25	50	1



Dr. R. MANICKA CHEZIAN M.Sc., M.S., Ph.D.,
PRINCIPAL i/c
Nallamuthu Gounder Mahalingam College
Pollachi - 642 001, Coimbatore District.

		Physical & Mental Well Being Paper-IV: Social Values						
IV	18UBC4N3	Non-Major Elective Programming Lab: Open Source Software	1	2	--	50	50	2
	18UBC4N4	Non-Major Elective Programming Lab: 2-D Animation						
		Extension Activity						
V	18UNC401/ 18UNS402/ 18USG403	NSS NCC SPORTS	--	--	50	--	50	1

V SEMESTER								
Part	Subject Code	TITLE	Duration in hours per week	Examination				Credits
				HOURS	CIA	ESE	TOTAL	
III	18UBC519	Object Oriented Programming Using Java Language	4	3	25	75	100	4
	18UBC520	Software Testing	4	3	25	75	100	4
	18UBC521	Elective-I	5	3	25	75	100	5
	18UBC522	Elective-II	5	3	25	75	100	5
	18UBC523	Programming Lab - IX: JAVA Programming	5	3	20	30	50	2
	18UBC524	Programming Lab - X: Software Testing	5	3	20	30	50	2
IV	18HEC505	Human Excellence-V: National Values	1	2	25	25	50	1
	18GKL501	Skill Based Subjects: General Awareness	SS	2	--	50	50	2
IV	18UBC5S1 / 18UBC5S2 / 18UBC5S3	Skill Based Elective: Software Analysis and Design E-Commerce Aptitude	1	2	--	50	50	2

VI SEMESTER								
Part	Subject Code	TITLE	Duration in hours per week	Examination				Credits
				HOURS	CIA	ESE	TOTAL	
III	18UBC625	Advanced Java programming	5	3	25	75	100	4
	18UBC626	Elective-III	4	3	25	75	100	3
	18UBC627	Information Security	4	3	25	75	100	3
	18UBC628	Mobile Application Development	5	3	25	75	100	5
	18UBC629	Programming Lab- XI: Advanced Java Programming	5	3	20	30	50	2
	18UBC630	Programming Lab- XII: Mobile Application	5	3	20	30	50	2



Dr. R. MANICKA CHEZIAN M.Sc., M.S., Ph.D.,
PRINCIPAL i/c
Nallamuthu Gounder Mahalingam College
Pollachi - 642 001, Coimbatore District.

		Development						
IV	18HEC606	Human Excellence-VI: Global Values	1	2	25	25	50	1
	18HECP03	Yoga Practical Paper-III	--	2	--	--	--	--
IV	18UBC6S4 / 18UBC6S5 / 18UBC6S6	Skill Based Elective: Software Industry Domains Multimedia and Animation Soft Skills	1	2	--	50	50	2
TOTAL MARKS							3900	140

ADD-ON COURSE: Mini Project	-	-	20	80	100	2
-----------------------------	---	---	----	----	-----	---

V SEMESTER

Elective-I:

Computer Networks

Grid Computing

Elective-II

Organizational behavior

Current Trends and Technologies

Elective-III

Data Mining and Warehousing

Cloud Computing



[Signature]
Dr. R. MANICKA CHEZIAN M.Sc., M.S., Ph.D.,
PRINCIPAL i/c
Nallamuthu Gounder Mahalingam College
Pollachi - 642 001, Coimbatore District

Bloom's Taxonomy Based Assessment Pattern

K1-Remember; **K2**- Understanding; **K3**- Apply; **K4**-Analyze; **K5**- Evaluate

1. Theory: 75 Marks

(i) TEST- I & II and ESE:

Knowledge Level	Section	Marks	Description	Total
K1 (1-5) (6-10)	A(Answer all)	10x1=10	MCQ Define	75
K2 (11-15)	B (Either or pattern)	5x5=25	Short Answers	
K3& K4 (16-21)	C(Answer 4 out of 6) 16 TH Question is compulsory	4x10=40	Descriptive/ Detailed	

Programme Code:	BCA	Programme Title:	Bachelor of Computer Applications	
Course Code:	18 UBC 418	Title	Batch:	2018-2021
Hrs/Week:	1	PROGRAMMING LAB-VIII:PHP Programming	Semester	IV
			Credits	01

Course Objective

To measure the students' knowledge about the php script languages. To demonstrate how to store and retrieve data from the database. .

Course Outcomes (CO)

K3	CO1	To keep in mind the practical fundamentals of php script.
K4	CO2	To get the idea about function and array using php.
K5	CO3	To access the database connection

1. Write a PHP script for Arithmetic operation.
2. Write a PHP script which will display the colors.
3. Write a PHP script using nested for loop that creates a chess board.
4. Write a function to sort an array.
5. Write a PHP function that checks if a string is all lowercase.
6. Create a simple 'birthday countdown' script, the script will count the number of days between current day and birthday.
7. Write a PHP script to generate simple random password.
8. Program to Store and Read a image in Database.
9. Program to Insert records to the table in Database and fetch records from the table in Database.
10. Create a Contact Form using PHP and WAMP server connectivity

Mapping

(18UBC418)

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	H	S
CO2	S	M	H	S	H
CO3	M	S	S	M	M

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: <i>A. Rajarajeswari</i> Signature: <i>A. Rajarajeswari</i>	Name: Dr.K.HARIDAS Signature: <i>Haridas</i>	Name: Dr.M.DURAIRAJU Signature: <i>[Signature]</i>	Name: Dr.R.MUTHUKUMARAN Signature: <i>[Signature]</i>

Dr. M. DURAIRAJU, M.Sc., M.Phil., B.Ed., P.D.C., P.T.
 Associate Professor / Co-ordinator
 Curriculum Development Cell
 NGM College (Autonomous)
 Pollachi - 642 001.

Dr. R. MUTHUKUMARAN
 Controller of Examinations
 NGM College (Autonomous)
 POLLACHI - 642 001.

Programme Code:	BCA	Programme Title:	Bachelor of Computer Applications	
Course Code:	18 UBC 3N2	Title	Batch:	2018-2021
Hrs/Week:	1	NME: PROGRAMMING LAB -DTP PROGRAMMING	Semester	III
			Credits	01

Course Objective

To provide a deep knowledge in various image processing effects.

Course Outcomes (CO)

K3	CO1	To remember the basic technical tools.
K4	CO2	To get the idea for handling tools and applying various effects.
K5	CO3	To access various formats in this platform for editing.

1. Design the Wedding Invitation using the associated tools in Photoshop.
2. Apply special art effects for the image using various options from the Filter Gallery.
3. Design the Banner.
4. Implement the Usage of different modes in a Single Image.
5. Design the College Profile.
6. Work with different images to implement Sharpen tool and Smudge Tool
7. Design the Calendar.
8. Edit the image using Blur tool.
9. Design the Visiting Card.
- 10 Edit the image using Burn and Sponge tool.
11. Edit the image using Clone tool.

Mapping

(18UBC3017)

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	H	H	H	H
CO2	M	M	H	H	H
CO3	H	H	H	M	H

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: <i>N. Shyamala</i> Signature: <i>N. Shy - h</i>	Name: Dr.K.HARIDAS Signature: <i>Haridas</i>	Name: Dr.M.DURAIRAJU Signature: <i>Dr. M. Durairaju</i>	Name: Dr.R.MUTHUKUMARAN Signature: <i>Dr. R. Muthukumar</i>

Dr. M. DURAIRAJU, M.Sc., M.Phil., B.Ed., PGDCE, Ph.D.

Associate Professor / Co-ordinator,

Curriculum Development Cell (CDC)

NGM College (Autonomous)

Pollachi - 642 001.

Dr. R. MUTHUKUMARAN

Controller of Examinations

NGM College (Autonomous)

POLLACHI - 642 001.

(A)

Programme Code:	BCA	Programme Title:	Bachelor of Computer Applications	
Course Code:	18 UBC 521	Title	Batch:	2018-2021
Hrs/Week:	5	COMPUTER NETWORKS	Semester	V
			Credits	05

Course Objective

To be familiar with the basics of data communication, various types of computer networks, experience in designing communication protocols.

Course Outcomes (CO)

K1	CO1	To remember, use and implement Computer Networks and the basic components of a Network system.
K2	CO2	To understand the layers of OSI and TCP and get knowledge about congestion control and network security.
K3	CO3	To apply pieces of hardware and software to make networks more efficient, faster, more secure, easier to use, able to transmit several simultaneous messages, and able to interconnect with other networks.
K4	CO4	To analyze packet switching networks, evaluate shortest path routing and traffic management at packet level, flow level and flow aggregate level.

Units	Content	Hrs
Unit I	Introduction: Uses of Computer Network- Network Hardware: LAN – WAN – MAN – Wireless – Home Networks. Network Software: Protocol Hierarchies – Design Issues for the Layers – Connection-oriented and connectionless services – Service Primitives – The Relationship of services to Protocols. Reference Models: OSI Reference Model – TCP/IP reference Model	13
Unit II	Physical Layer - Guided Transmission Media: Magnetic Media – Twisted Pair – Coaxial Cable – Fiber Optics. Wireless Transmission: Electromagnetic Spectrum – Radio Transmission – Microwave Transmission – Infrared and Millimeter Waves – Light Waves. Communication	13

	Satellites: Geostationary, Medium-Earth Orbit, Low Earth-orbit Satellites – Satellites versus Fiber. Data-Link Layer: Error Detection and correction – Elementary Data-link Protocols – Sliding Window Protocols.	
Unit III	Medium-Access Control Sub Layer: Multiple Access Protocols – Ethernet – Wireless LANs - Broadband Wireless – Bluetooth. Network Layer: Routing algorithms – Congestion Control Algorithms. Transport Layer: <i>Elements of Transport Protocols</i> – Internet Transport Protocols: TCP.	13
Unit IV	Session Layer: Session and Transport Interaction – Synchronization Points – Session Protocol Data Unit. Presentation Layer: Translation – Encryption/Decryption – Authentication – Data Compression.	13
Unit V	Application Layer: DNS – E-mail. NETWORK SECURITY: Cryptography –Symmetric Key Algorithms – Public Key Algorithms – <i>Digital Signatures</i> .	13
	Total Contact Hrs	65

• The topics given in *Italics* are noted as Self-Study topics.

Seminar, Assignment, Case Study

Books for Study

1. Andrew S. Tanenbaum, "Computer Networks", 4th edition Reprint 2003, PHI.
(UNIT -1, 2, 3, 5)
2. Behrouz A. Forouzan, "Data Communication And Networking", 2nd Edition
Update, Genuine Tata McGraw - Hill Edition. (UNIT - 4)

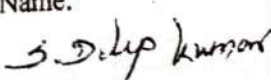
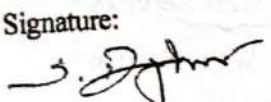
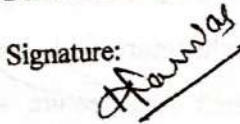
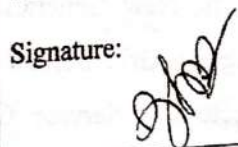
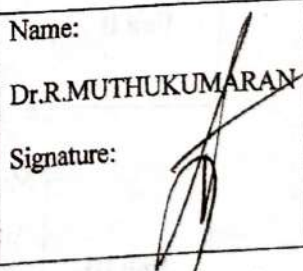
Books for Reference

1. Achyut Godbole, "Data Communication And Networks", 2007, TMH.
2. Uyless Black, "Computer Networks Protocols, Standards, And Interfaces",
2nd Edition.

Mapping

PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO					
CO1	M	H	H	H	H
CO2	H	H	S	M	H
CO3	H	M	H	M	M
CO4	H	M	S	M	M

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: 	Name: Dr.K.HARIDAS	Name: Dr.M.DURAIRAJU	Name: Dr.R.MUTHUKUMARAN
Signature: 	Signature: 	Signature: 	Signature: 

Dr. M. DURAIRAJU, M.Sc., M.Phil., B.Ed., PGDGC
Associate Professor / Co-ordinator
Curriculum Development Cell (CNC)
NGM College (Autonomous)
Pollachi - 642 001.

Dr. R. MUTHUKUMARAN
Controller of Examinations
NGM College (Autonomous)
Pollachi - 642 001.

(B)

Programme Code:	BCA	Programme Title:	Bachelor of Computer Applications	
Course Code:	18 UBC 521	Title	Batch:	2017-2020
Hrs/Week:	5	GRID COMPUTING	Semester	V
			Credits	05

Course Objective

To introduce students the basic applications, concepts and techniques of grid computing and to develop skills for applying grid computing techniques and algorithms to solve practical problems in variety of disciplines.

Course Outcomes (CO)

K1	CO1	To remember the contribution of data warehousing and data mining to the decision-support level of organizations
K2	CO2	To understand and carefully differentiate between situations for applying different data-mining techniques
K3	CO3	To implement different models used for OLAP and data preprocessing
K4	CO4	To estimate data-mining solutions for different applications

Units	Content	Hrs
Unit I	Introduction to Grid Computing: Early Grid Activities – Current Grid Activities – An Overview of Grid Business Areas – Grid Applications – Grid Infrastructure.	10
Unit II	Grid Computing Worldwide Initiatives: Grid Computing Organizations and their Roles – The Grid Computing Anatomy – The Grid Computing Road Map.	10
Unit III	The New Generation of Grid Computing Applications : Merging the Grid Services Architecture with the Web Services Architecture – Service Oriented Architecture – Web Service Architecture – XML Related Technologies and their relevance to Web Services – XML Messages and Enveloping – Service message Description Mechanisms.	10
Unit IV	The Grid Computing Technological Viewpoints: Open Grid Services Architecture (OGSA): Introduction – OGSA Architecture and Goal – Sample Use Cases that Drive the OGSA: Commercial Data Center (CDC) – National Fusion Collaboratory (NFS) – The OGSA Platform Components.	10

Unit V	Open Grid Services Infrastructure (OGSI) - Technical Details of OGSI Specification - Introduction to Service Data Concepts - Grid Service: Naming and Change Management Recommendations - OGSA Basic Services : Common Management Model (CMM) - Service Domain - Policy Architecture - Security Architecture - Metering and Accounting.	12
Total Contact Hrs		52

* The topics given in Italics are noted as Self-Study topics.

Seminar, Assignment, Case Study

Books for Study

1. Joshy Joseph, Craig Fellenstein, *Grid Computing*, IBM Press - Pearson Education, Fifth Impression - 2009. (Unit 1 to 5).

Books for Reference

1. C.S.R.Prabhu, *Grid and Cluster Computing*, PHI Learning Private Limited, 2009.
2. Katarine Stanoevska, Slabeva Thomas Wozniak, Santi Ristol, *Grid and Cloud Computing*, Springer International Edition - 2015.

Mapping

PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO					
CO1	H	H	M	H	S
CO2	S	H	S	S	H
CO3	S	H	M	S	M
CO4	S	M	S	S	H

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: Dr. R. MALATHI RAVINDRAN Signature: R. Malathi	Name: Dr. K. HARIDAS Signature: K. Haridas	Name: Dr. M. DURAIRAJU Signature: M. Durairaju	Name: Dr. R. MUTHUKUMARAN Signature: R. Muthukumaran

Dr. M. DURAIRAJU, M.Sc., M.Phil., B.Ed., PGDCE, P.B.R.
Associate Professor / Co-ordinator
Curriculum Development Cell (CCE)
NGM College (Autonomous)
Pollachi - 642 001.

Dr. R. MUTHUKUMARAN
Controller of Examinations
NGM College (Autonomous)
Pollachi - 642 001.

Programme Code:	BCA	Programme Title:	Bachelor of Computer Applications	
Course Code:	18 UBC 522	Title	Batch:	2018-2021
Hrs/Week:	5	CURRENT TRENDS AND TECHNOLOGIES	Semester	V
			Credits	05

Course Objective

To study and apply IT applications with a wide range of concepts and technical skills in the areas to succeed in the future.

Course Outcomes (CO)

K1	CO1	To implement Data and Knowledge Management and use of Devices in IoT Technology.
K2	CO2	To analyze the terminology used by SAP ABAP, knowledge of big data and its technologies in Big Data Analytics.
K3	CO3	To keep in mind of Cyber Security Policy and Security Evolution.
K4	CO4	To get the idea to apply a Objectives and Guidance of Cyber security.

Units	Content	Hrs
Unit I	IOT ARCHITECTURE: History of IOT- Machine to machine- Web of things- IOT protocols APPLICATIONS: Remote monitoring and sensing- Remote controlling - Performance analysis - The layering concepts - IOT communication pattern- IOT protocol Architecture- The 6LoWPAN- Security aspect in IOT.	13
Unit II	SAP: SAP System Overview: SAP System Architecture-Environment for Programs-First look at the ABAP Workbench. DATA DICTIONARY: Introduction-Creating a table- Technical settings-Entering records into a table-Viewing the data in a table.	13

(18 UAC 522)

Unit III	BIG DATA NOW: Introduction - <i>Evolving tools and techniques</i> -Data Analysis-Big data and advertising-Tightly integrated engines streamline big data analysis -Data scientists tackle the analytic lifecycle-Pattern Detection and Twitter's Streaming API.	13
Unit IV	CYBER SECURITY: Introduction - What is Cyber Security? - What is Cyber Security Policy - Domain of Cyber Security Policy- Laws & Regulations - Enterprise Policy - Technology Operations - Technology Configurations - Cyber Security Evolution - Productivity - Internet - E Commerce - Counter Measures Challenges.	12
Unit V	CYBER SECURITY OBJECTIVES AND GUIDANCE: Cyber Security Metrics - Security Management Goals - counting Vulnerabilities - Security Frameworks - E-Commerce System - Industrial Control system - Personal Mobile Device - Security policy Objectives Guidance for Decision Markers - Tone at the Top - Policy as a project - Cyber Security Management -Arriving at Goals - Cyber Security Documentation - The catalog Approach - Catalog Format - Cyber Security Policy.	14
Total Contact Hrs		65

- The topics given in *Italics* are noted as Self-Study topics.

Seminar, Assignment, Case Study

Books for Study

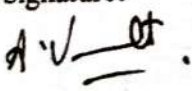
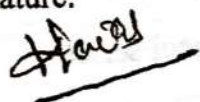
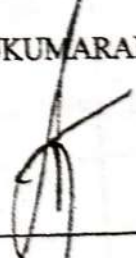
1. Rajiv Ramnath, Roger Crawfis, and paolo sivilotti, Android SDK3 for Dummies, Wiley2011 (Unit 1).
2. BEGINNER'S GUIDE TO SAP ABAP- Peter Moxon, Sapprouk Limited 2012 (Unit 2).
3. Big Data Now 2013 Edition- O'Reilly Media, Inc. (Unit 3).
4. Jennifer L. Bayuk, J. Healey, P.Rohmeyer, Marcus Sachs, Jeffery Schmit, Joseph Weiss
"Cyber Security Policy Guidebook" John Wiley & Sons 2012. (Unit 4 & 5)

- Books for Reference
1. Brain fling, Moble Design and Development O'Reily media, 2009
 2. Maximiliano Firtman, Programming the Mobile Web, O'Reily Media 2010

Mapping

PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO					
CO1	H	H	H	M	M
CO2	H	M	H	M	M
CO3	H	M	H	M	H
CO4	S	H	M	M	H

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: A.VANITHA Signature: 	Name: Dr.K.HARIDAS Signature: 	Name: Dr.M.DURAIRAJU Signature: 	Name: Dr.R.MUTHUKUMARAN Signature: 

Dr. R.MUTHUKUMARAN
 Controller of Examinations
 NGM College (Autonomous)
 POLLACHI - 642 001.

(A)

Programme Code:	BCA	Programme Title:	Bachelor of Computer Applications	
Course Code:	18 UBC 626	Title	Batch:	2018-2021
Hrs/Week:	4	DATA MINING AND WAREHOUSING	Semester	VI
			Credits	03

Course Objective

To introduce students the basic applications, concepts and techniques of data mining and to develop skills for applying data mining techniques and algorithms to solve practical problems in variety of disciplines.

Course Outcomes (CO)

K1	CO1	To remember the contribution of data mining to the decision-support level of organizations
K2	CO2	To understand and carefully differentiate between situations for applying different data-mining techniques
K3	CO3	To implement different models used for OLAP and data preprocessing
K4	CO4	To estimate data-mining and data warehousing solutions for different applications

Units	Content	Hrs
Unit I	Introduction to Data Mining: Definition- Kinds of Data- Kinds of Patterns - Technologies used - Major Issues in Data mining - Data mining Applications & Trends - Data objects & Attribute types - Data visualization.	10
Unit II	Data Preprocessing: Data cleaning: Missing values, Noisy data, Data cleaning as a process-Data Integration: Entity Identification problem, Redundancy and correlation analysis, Tuple Duplication, Data value conflict detection & resolution - Overview of Data reduction strategies - Data transformation strategies overview.	10
Unit III	Knowledge Discovery Process: Data Selection-Cleaning-Enrichment-Coding-Data Mining-Preliminary Analysis of Data Set Using Relational Query Tools-Visualization Techniques-	10

	Likelihood and Distance-OLAP Tools-K-Nearest Neighbour-Decision Trees-Association Rules-Neural Networks-Genetic Algorithms-Reporting.	
Unit IV	Setting Up KDD Environment: Introduction-Different forms of Knowledge-Getting Started-Data Selection-Cleaning-Enrichment-Coding-Reporting-10 Golden Rules.	10
Unit V	Data warehousing: Basic concepts – Modeling – Design and usage – Data warehouse Implementation – Data generalized by Attribute – <i>Oriented Induction</i> .	12
	Total Contact Hrs	52

- The topics given in **Italics** are noted as Self-Study topics.

Seminar, Assignment, Case Study

Books for Study

1. Data mining concept and Techniques, Jiawei Han, Micheline Kamber, Jian pei, Morgan Kaufmann publishers, 3rd edition (Unit 1,2 and 5).
2. Peter Andriaans Dolf Zantinge, *Data Mining*, Addison Wesley Publications, Second Edition, 2000 (Unit 3, 4).

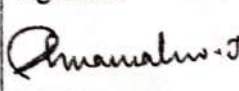
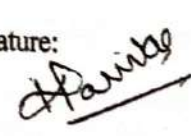
Books for Reference

1. Ian H. Witten & Edile Frank, *Data Mining- Practical Machine Learning Tools & Techniques*, Second Edition, 2005.
2. Daniel T. Larose, *Data Mining Methods and Models*, John Wiley & Sons, Student Edition, 2006.

Mapping

PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO					
CO1	H	H	M	H	S
CO2	S	H	S	S	H
CO3	S	H	M	S	M
CO4	S	M	S	S	H

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: UMAMAHESWARI J	Name: Dr.K.HARIDAS	Name: Dr.M.DURAIRAJU	Name: Dr.R.MUTHUKUMARAN
Signature: 	Signature: 	Signature: 	Signature: 

Dr. M. DURAIRAJU, M.Sc., M.Phil., B.Ed., PGDGC, Ph.D.,

Associate Professor / Co-ordinator
Curriculum Development Cell (CDC)
NGM College (Autonomous)
Pollachi - 642 001.Dr. R. MUTHUKUMARAN
Controller of Examinations
NGM College (Autonomous)
POLLACHI - 642 001

Programme Code:	BCA	Programme Title:	Bachelor of Computer Applications	
Course Code:	18 UBC 628	Title	Batch:	2018-2021
Hrs/Week:	5	MOBILE APPLICATION DEVELOPMENT	Semester	VI
			Credits	05

Course Objective

To introduce students, the basic applications, concepts and techniques of Mobile App development and make the student to design and develop android application.

Course Outcomes (CO)

K1	CO1	To remember about the Android application development tools.
K2	CO2	To understand the Install and configure Android application development
K3	CO3	To implement the design and develop user Interfaces for the Android platform
K4	CO4	To estimate the database connection for android application.

Units	Content	Hrs
Unit I	Getting Started with Android Programming: What is Android?, Obtaining the Required tools, Creating Your First Android Application, Anatomy of an Android Application.	10
Unit II	Activities, Fragments and Internets: Understanding Activities, Linking Activities Using Intents, Calling Built-in Applications Using Intents, Displaying Notifications.	10
Unit III	Getting to know the Android User Interface: Understanding the Components of a screen, Adapting to display Orientation, <i>Managing Changes to Screen Orientation.</i>	10
Unit IV	Designing Your Interface with Views: Using Basic Views, Using Picker Views, Using List Views to Display Long Lists. Data persistence: Saving and Loading User Preferences, Persisting Data to Files, Creating and Using Databases.	10

	Content Providers: Using a Content Provider,Creating Your Own Content Provider,Using the Content Provider.	
Unit V	Messaging: SMS Messaging,Sending E-Mail. Location-Based Services: Displaying Maps, <i>Getting Location Data.</i>	12
	Total Contact Hrs	52

- The topics given in *Italics* are noted as Self-Study topics.

Seminar, Assignment, Case Study

Books for Study

1. "Beginning ANDROID 4 Application Development" by Wei-Meng Lee, Wiley Publications,2015 Edition.

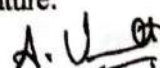
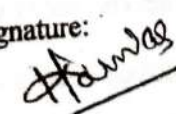
Books for Reference

1. "Android Application Development AA-in-one for Dummies", by Barry A.Burd, Published on August 2015, 2nd Edition.
2. "Professional Android 2 Application Development",by Reto mier., 2nd Edition.

Mapping

PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO					
CO1	M	L	M	H	S
CO2	S	H	L	S	M
CO3	H	H	S	M	M
CO4	S	M	S	S	L

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: A.YANITHA Signature: 	Name: Dr.K.HARIDAS Signature: 	Name: Dr.M.DURAIRAJU Signature: 	Name: Dr.R.MUTHUKUMARAN Signature: 

Dr. R.MUTHUKUMARAN
Controller of Examinations
Associate Professor / Co-ordinator
Curriculum Development Cell (CDC)
NGM College (Autonomous)
Pollachi - 642 001