Dr G R DAMODARAN COLLEGE OF SCIENCE (AUTONOMOUS)
COIMBATORE - 641014
BACHELOR OF COMPUTER APPLICATIONS
(Under Choice Based Credit System)

EFFECTIVE FOR THE STUDENTS ADMITTED DURING THE ACADEMIC YEAR 2020-2021

SCHEME OF EXAMINATIONS

Sem.	Part	Course Code	Subject Name	Credits	MARKS			Hrs. / Week	Exam. Duration (Hrs.)	Category
					CA	TEE	TOTAL			
III	IV	20300A	ADVANCED TAMIL I	2	100	NA	100	2	3	THEORY
III	IV	20300B	BASIC TAMIL I							
III	IV	20300N	NON MAJOR ELECTIVE I: PERSONALITY DEVELOPMENT AND SOFT SKILLS		40	60			3	THEORY
III	III	20306A	CORE: COMPUTER NETWORKS	4	25	75	100	5	3	THEORY
III	III	20306B	CORE: OPERATING SYSTEMS	4	25	75	100	5	3	THEORY
III	III	20306C	CORE: JAVA PROGRAMMING	4	25	75	100	5	3	THEORY
III	III	20306D	ALLIED: MEDICAL TRANSCRIPTION	5	25	75	100	5	3	THEORY
III	III	20306P	CORE: JAVA PROGRAMMING LAB	2	40	60	100	4	3	PRACTICAL
III	IV	20300G2	SKILL BASED SUBJECT: PROFESSIONAL COMMUNICATION	2	25	75	100	4	3	THEORY
III	V	20306S	EXTENSION ACTIVITIES: NSS / COMPUTER AWARENESS PROGRAMME	1	GRADE**				3	PRACTICAL
IV	IV	20400A	ADVANCED TAMIL II	2	100	NA	100	2	3	THEORY
IV	IV	20400B	BASIC TAMIL II							
IV	IV	20400N	NON MAJOR ELECTIVE II: PERSONALITY DEVELOPMENT AND SOFTSKILLS		40	60			3	THEORY
IV	III	20406K	Online Course/SWAYAM/NPTEL	4				5		
IV	III	20406A	CORE: OPEN SOURCE SOFTWARE	4	25	75	100	5	3	THEORY
IV	III	20406B	CORE: PYTHON PROGRAMMING	4	25	75	100	5	3	THEORY
IV	III	20406C	ALLIED: UNDERWATER COMMUNICATIONS	5	25	75	100	5	3	THEORY
IV	III	20406P	CORE: OPEN SOURCE SOFTWARE LAB	2	40	60	100	5	3	PRACTICAL
IV	IV	20400G1	VALUE EDUCATION: INDIAN SOCIETY, PEOPLE AND CULTURE	2	25	75	100	3	3	THEORY

BI - 01
2020-21

Dr G R DAMODARAN COLLEGE OF SCIENCE (AUTONOMOUS)
COIMBATORE - 641014
BACHELOR OF COMPUTER APPLICATIONS
(Under Choice Based Credit System)

Sem.	Part	Course Code	Subject Name	Credits	MARKS			Hrs. / Week	Exam. Duration (Hrs.)	Category
					CA	TEE	TOTAL			
V	III	20506A	CORE: EXPLORING PLANETARY SCIENCE AND COMPUTING	4	25	75	100	4	3	THEORY
V	III	20506B	CORE: WEB DESIGN AND MARKUP LANGUAGE	4	25	75	100	5	3	THEORY
V	III	20506C	CORE: SOFTWARE ENGINEERING	4	25	75	100	5	3	THEORY
V	III	20506D	CORE: .NET PROGRAMMING	5	25	75	100	5	3	THEORY
V	III	20506P	CORE: WEB DESIGN AND .NET PROGRAMMING LAB	3	40	60	100	4	3	PRACTICAL
V	III	20506K	Online Course/SWAYAM/NPTEL	4				4		
V	IV	20506E	SKILL BASED SUBJECT: APTITUDE*	2	25	75	100	3	3	PRACTICAL
VI	III	20606A	CORE: CYBER SECURITY	4	25	75	100	4	3	THEORY
VI	III	20606B	CORE: MOBILE APPLICATION DEVELOPMENT	5	25	75	100	4	3	THEORY
VI	III	20606P	CORE: MOBILE APPLICATION DEVELOPMENT LAB	2	40	60	100	4	3	PRACTICAL
VI	III		ELECTIVE - I	5	25	75	100	4	3	THEORY
VI	III	20606S	CORE: PROJECT AND VIVA VOCE	7	25	75	100	12	-	PRACTICAL
VI	IV	20606C	SKILL BASED SUBJECT: SOFT SKILLS *	2	25	75	100	2	3	PRACTICAL
				140			3700	180		

G. Reddy

BJ - 02
2020-21

Dr G R DAMODARAN COLLEGE OF SCIENCE (AUTONOMOUS)
COIMBATORE - 641014
BACHELOR OF COMPUTER APPLICATIONS
(Under Choice Based Credit System)

Sem.	Part	Course Code	Subject Name
ELECTIVE I			
VI	III	20606U1	ELECTIVE I : MOBILE COMMUNICATIONS
VI	III	20606U2	ELECTIVE I : ARTIFICIAL INTELLIGENCE
VI	III	20606U3	ELECTIVE I : DATA SCIENCE
VI	III	20606U4	ELECTIVE I : ENTERPRISE RESOURCE PLANNING
VI	III	20606U5	ELECTIVE I : AIR AND SEA NAVIGATION
VI	III	20606U6	ELECTIVE I : INTERNET OF THINGS

* Both CAM and TEE marks will be evaluated internally.
Basic Tamil/Advanced Tamil - 100 Marks CA only.

PROJECT AND VIVA VOCE

Marks split up:	**Marks**
I Project Review	10
II Project Review	15
Project Documentation	25
Viva Voce	50
Total	**100 Marks**

Online course: This can be availed by the students at anytime during that particular year of study. Students are expected to produce certificates

G. Radha

BI - 03
2020-21

Dr G R DAMODARAN COLLEGE OF SCIENCE (AUTONOMOUS)
COIMBATORE - 641014
BACHELOR OF COMPUTER APPLICATIONS
(Under Choice Based Credit System)

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MAPPING OF COURSES WITH PROGRAMME OUTCOME LEVELS

Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
20106A	CORE: C PROGRAMMING	1	3		1	1	3		1	1	2
20106B	ALLIED: MATHEMATICAL FOUNDATIONS FOR COMPUTER APPLICATIONS	3						2			
20106P	CORE: C PROGRAMMING LAB	3	3		2	1	1	1	1	1	1
20100G	SKILL BASED SUBJECT: GENERAL AWARENESS	2	3	3	2	3	2		1	2	1
20206A	CORE: DATASTRUCTURES	3						2			
20206B	ALLIED: COMPUTER BASED OPTIMIZATION TECHNIQUES	3	3	1	3	3	3	3	3	3	2
20206P	SKILL BASED SUBJECT: DATA STRUCTURES LAB		2	2		3				2	
20306A	CORE: COMPUTER NETWORKS		2	3	1	3	2			1	1
20306B	CORE: OPERATING SYSTEMS	1	3	2	3	3	3	2	3	3	3
20306C	CORE: JAVA PROGRAMMING	1	2	2	2	3	3	2	1	1	2
20306D	ALLIED: MEDICAL TRANSCRIPTION	3	3	1	3	3	3	3	3	3	2
20306P	CORE: JAVA PROGRAMMING LAB	1	1		2	1		1	1	1	2
20406A	CORE: OPEN SOURCE SOFTWARE	1	2	3	3	2	2	2	2	1	

BJ - 04
2020-21

Dr G R DAMODARAN COLLEGE OF SCIENCE (AUTONOMOUS)
COIMBATORE - 641014
BACHELOR OF COMPUTER APPLICATIONS
(Under Choice Based Credit System)

Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
20406B	CORE: PYTHON PROGRAMMING	1	2	2	3	3	2	1		1	2
20406C	ALLIED: UNDERWATER COMMUNICATIONS	3	3	1	3	3	3	3	3	3	2
20406P	CORE: OPEN SOURCE SOFTWARE LAB	3	3	2	3	2	2		2	2	2
20506A	CORE: EXPLORING PLANETARY SCIENCE AND COMPUTING				3	3		2			
20506B	CORE: WEB DESIGN AND MARKUP LANGUAGE	2	2	3	2	1	2	1	1	2	1
20506C	CORE: SOFTWARE ENGINEERING	1	2	2	3	2	3	2		3	
20506D	CORE: .NET PROGRAMMING	3	3	1	3	3	3	3	3	3	2
20506P	CORE: WEB DESIGN AND .NET PROGRAMMING LAB	1	3		1	1	3		1	1	2
20506E	SKILL BASED SUBJECT: APTITUDE*	3	3		2		1				2
20606A	CORE: CYBER SECURITY	2	3	2	3	2	2	1	2	1	1
20606B	CORE: MOBILE APPLICATION DEVELOPMENT	2	3	3	3	2	2	1	2		
20606P	CORE: MOBILE APPLICATION DEVELOPMENT LAB	3	3	1	3	3	3	3	3	3	2
20606U1	ELECTIVE I: MOBILE COMMUNICATIONS					3	3				
20606U2	ELECTIVE I: ARTIFICIAL INTELLIGENCE	1	2	3	1	2		1			2
20606U3	ELECTIVE I: DATA SCIENCE		2		3	3		1		1	2

BIT - 05
2020-21

Dr G R DAMODARAN COLLEGE OF SCIENCE (AUTONOMOUS)
COIMBATORE - 641014
BACHELOR OF COMPUTER APPLICATIONS
(Under Choice Based Credit System)

Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
20606U4	ELECTIVE I: ENTERPRISE RESOURCE PLANNING				2	2	1	1	1	1	
20606U5	ELECTIVE I: AIR AND SEA NAVIGATION	2		2	2	1	2		1	1	2
20606U6	ELECTIVE I: INTERNET OF THINGS	1	2	2	1	2	2	1	1	1	1
20606S	CORE: PROJECT AND VIVA VOCE	3	3	1	3	3	3	3	3	3	2
20606C	SKILL BASED SUBJECT: SOFT SKILLS *		2		2	1		3	1	3	3

Indicators: 1. Reasonable 2. Significant 3. Strong

BJ - 06
2020-21

BIJ - 07

Dr G R DAMODARAN COLLEGE OF SCIENCE (AUTONOMOUS) 2020 -21
COIMBATORE - 641014
BACHELOR OF COMPUTER APPLICATIONS
(Under Choice Based Credit System)

EFFECTIVE FOR THE STUDENTS ADMITTED DURING THE ACADEMIC YEAR 2020-2021

Semester	Course Code	Course Title	Credits	Theory/ Practical	Problems %	Theory %
THIRD	20306D	ALLIED: MEDICAL TRANSCRIPTION	5	Theory	-	100

Objective of the course: This course helps the students in identifying the basic elements of a medical diagnostic report. Also provides the information about common terms in the medical field and references related to the specialties of emergency room, physical medicine, radiology, and pathology.

Unit I: Introduction to Medical Transcription **(Teaching Hours: 10)**
Preliminaries of medical transcription - Understanding Medical Records – Ethics and Confidentiality – Legal aspects of Healthcare Records.

Unit II: Grammar, Sentence Structure and Punctuation **(Teaching Hours: 10)**
Working with Spelling and grammar – Sentence Formations – Practice Rules to remember when transcribing – Transcribing numbers and figures – Medical Abbreviations – Medical Terminologies.

Unit III: Format of Reports **(Teaching Hours: 10)**
Hospital Medical Reports – Clinical Medical Reports – Emergency Room report -History and Physical, Radiology Report.
Discharge summary -Insurance Reports - Operative reports - Consultation reports -Pathology report - Autopsy report.

Unit IV: Understanding Computer Usage **(Teaching Hours: 10)**
Internet Technologies: Web-Browsers
Word Processing Tools: Open Office - Organizing the Information - Proofreading and Editing - Basic Formatting Guidelines.

Unit V: Software Support for Medical Transcription **(Teaching Hours: 10)**
Case Study: Open Source Software for Medical Transcription – Speech to Text conversion software – Other related software for medical billing.
The nuts and bolts of working as an MT – Future of Medical Transcription

BIT - 08

2020-21

Dr G R DAMODARAN COLLEGE OF SCIENCE (AUTONOMOUS)
COIMBATORE - 641014
BACHELOR OF COMPUTER APPLICATIONS
(Under Choice Based Credit System)

Course Outcome mapping with Knowledge level

Course Outcome	CO Statement	Knowledge level
CO1	Preliminaries of Medical Transcription	K1 & K2
CO2	Working with Grammar and Medical Terminologies	K2 & K3 & K5
CO3	Report Formats	K2 & K3 & K4 & K5
CO4	Usage of Computers in Medical Transcription	K2 & K3 & K5
CO5	Software Support for Medical Transcription	K2 & K3 & K5

Note: K1- Remembering; K2 – Understanding; K3 – Applying; K4 – Analysing; K5 – Creating & Evaluating.

Course Outcome mapping with Programme outcome

Course outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1		2		3	1	2		1	2	
CO2	2	2		3	2	2		1	2	1
CO3	1	2		3	2	2		1	2	1
CO4		3		1	2	1	1	2	2	2
CO5		3		1	2	1	1	2	2	2

Indicators: 1. Reasonable 2. Significant 3.Strong

Text Book				
S.No.	Title	Author	Publishers	Publication Year & Edition
1	The AAMT Book of Style for Medical Transcription	--	American Association for Medical Transcription	2005, Second
2	Medical Transcription for Dummies	Anne Martinez	Wiley Publishers	2012, First
3.	Web References			

Pedagogy: Lecture, PPT presentation, Demonstration, Assignment

BTI -09
2020-21

Dr G R DAMODARAN COLLEGE OF SCIENCE (AUTONOMOUS)
COIMBATORE - 641014
BACHELOR OF COMPUTER APPLICATIONS
(Under Choice Based Credit System)
EFFECTIVE FOR THE STUDENTS ADMITTED DURING THE ACADEMIC YEAR 2020-2021

Semester	Course Code	Course Title	Credits	Theory/ Practical	Problems %	Theory %
FIFTH	20506A	CORE: EXPLORING PLANETARY SCIENCE AND COMPUTING	4	Theory	-	100

Objective of the Subject: This course is designed to introduce the terms and technologies used in Planetary Science, Space Technology and Applications. Fundamentals, Key terms, Instruments and Research Agencies used for Space and Planetary Sciences are addressed.

UNIT I: Overview of Planets **(Teaching Hours: 11)**

Exploration of Planet Earth – Principles of Rocketry and Space Navigation - Planets of the Solar System – The Sun and the Planets of Solar System – The Life and death of the stars – Big bang theory - Origin of the Solar system – The Solar Nebula

Earth: Model of Planetary Evolution – Atmosphere – Interior of the Earth – Asteroids – Comets.

UNIT II: Fundamentals of Planetary Science **(Teaching Hours: 9)**

Astronomy – Astrophysics – Asteroids – Artificial Gravity – Global Positioning System – Electromagnetic Propulsion – Skylab – Size and Shape of the Earth from Satellites – Space Radiation - Astronauts

UNIT III: Space Technology **(Teaching Hours: 10)**

Space Technology – Outer Space/Exo Space - Space Shuttle Program – Space Traffic – International Space Station – Satellite Activities in other countries Satellites – Application Satellites – Scientific Satellites – Communication Satellites – ISRO – NASA – CNSA.

UNIT IV: Computing and Communication **(Teaching Hours: 12)**

Information and Communication Technology and Space - Types of Telescopes - Observing – Data Processing – Photometry

Integrating AI and Machine Learning for Planetary Science – Data Processing – Planetary Remote Sensing - Geo-Spatial Image Processing – A Data handling Activity to the students.

UNIT V: Applications of Planet Science **(Teaching Hours:8)**

Military Applications – Weather and Climate Applications – Navigation, Maps and Surveying – Education – Agriculture – Environmental Monitoring and Resource Management.

BII -10
2020-21

Dr G R DAMODARAN COLLEGE OF SCIENCE (AUTONOMOUS)
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Course Outcome mapping with Knowledge level

Course Outcome	CO Statement	Knowledge level
CO1	Familiarize on the prerequisite knowledge for Planet Science	K2 & K3
CO2	Know about the key terms and definitions in Planet Science	K1&K2 & K3
CO3	Explore on Space Technology and Satellites	K1&K2&K3& K4
CO4	Connect the Field of Computer Science with Planetary Science	K1&K2&K3
CO5	Discuss about the various applications of Space and Planetary Science	K1&K2

Note: K1- Remembering; K2 – Understanding; K3 – Applying; K4 – Analysing; K5 – Creating & Evaluating.

Course Outcome mapping with Programme outcome

Course outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2		1	1	2	3			1	2
CO2		1	1	1					1	
CO3	2		1	1	2	3		1	1	2
CO4			1	1					1	
CO5	2		3	1	3	3			1	2

Indicators: 1. Reasonable 2. Significant 3.Strong

Text Books				
S.No	Title	Author	Publishers	Publication Year & Edition
1	Introduction to Planetary Science - The Geological Perspective(Units I, II).	Gunter Faure and Teresa M. Mensing	Springer Publications	2007, 1st Edition
2	Information, Communication and Space Technology (Units III, IV)	Mohammad Razani	CRC Press, Taylor and Francis Series,	2012, 1st Edition
3	Instruments, Observatories and Sensor Systems Roadmap (Units III, V)	Richard D.Barney et al	National Aeronautics and Space Administration, NASA	2010, 1st Edition
4	Machine Learning for Planetary Science (Unit III,V)	Joern Helbert et al.,	Elsevier Publications	2021, 1st edition
5	Web References			

Pedagogy: Lecture, PPT Presentation, E-content, Seminar, Assignment, Web articles

BTJ - II

2020-21

Dr G R DAMODARAN COLLEGE OF SCIENCE (AUTONOMOUS)
COIMBATORE - 641014
BACHELOR OF COMPUTER APPLICATIONS
(Under Choice Based Credit System)
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Semester	Course Code	Course Title	Credits	Theory/ Practical	Problems %	Theory %
SIXTH	20606U6	ELECTIVE I: INTERNET OF THINGS	5	Theory	-	100

Objective of the course: The objective of this course is to provide an insight on basic electronic components, physical design, logic design, enabling technologies of IOT, IOT system management and design methodology, IOT physical devices and cloud offerings.

UNIT I: Basic Electronics and Embedded Systems **(Teaching hours: 10)**

Basic Electronics: Components and Devices - Capacitors – Resistors – Transistors – Diodes – LEDs - Breadboard – AC Motors – DC Motors - Servo Motors - Measuring Instruments – Circuits – Power Units . Microprocessors Vs. Microcontrollers - Advanced Microcontroller Chips: ATMega, Atmel - Arduino IDE. Sensors: Fundamentals - functional characteristics – types.

UNIT II: Introduction to Internet of Things **(Teaching hours: 10)**

Introduction to internet of things: Introduction - Physical design of IOT - Logical design of IOT - IOT Enabling Technologies - IOT Levels and Deployment templates.

IOT and M2M: Introduction - M2M - Difference between IOT and M2M - SDN and NFV for IOT.

UNIT III: IOT System Management **(Teaching hours: 10)**

IOT system Management with NETCONF-YANG: Need for IOT System Management - Simple Network Management Protocol - Network Operator Requirements - NETCONF-YANG - IOT system Management with NETCONF – YANG. IOT Design Methodology - case study on IOT system for weather monitoring - Motivation for using Python.

UNIT IV: IOT and Physical devices **(Teaching hours: 10)**

IOT Physical devices and end points: Basic building blocks of an IOT device - Exemplary device Rasperry Pi - About the board - Linux on Rasperry Pi - Rasperry Pi interfaces - Programming Rasperry Pi with Python - Other IOT devices.

UNIT V: IOT and Cloud **(Teaching hours: 10)**

IOT physical devices and cloud offerings: Introduction to cloud storage models and cloud APIs-WAMP - Autobahn for IOT - Xively cloud for IOT - Python web application framework - Designing a RESTful web API - Amazon web services for IOT.

BIJ – 12

2020-21

Dr G R DAMODARAN COLLEGE OF SCIENCE (AUTONOMOUS)
COIMBATORE - 641014
BACHELOR OF COMPUTER APPLICATIONS
(Under Choice Based Credit System)

Course Outcome mapping with Knowledge level

Course Outcome	CO Statement	Knowledge level
CO1	Understand the various electronic components and its functions.	K1,K2
CO2	Describes about fundamentals of Internet of Things	K1,K2,K3
CO3	Understand about IOT system Management and network protocols	K1,K2,K3,K4
CO4	Describes about the Basic building blocks of an IOT device	K1,K2,K3,K4
CO5	Describes IOT physical devices and cloud offerings and cloud storage models	K1,K2,K3,K4

Note:
K1- Remembering; K2 – Understanding; K3 – Applying; K4 – Analysing; K5 – Creating & Evaluating.

Course Outcome mapping with Programme Outcome

Course outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	1			1			2		1	1
CO2	2	3	2	2		1	1		2	
CO3	3	2			1	2				
CO4	2		2	3	2			1	1	
CO5	3		3	2			1	2		

Indicators: 1. Reasonable 2. Significant 3.Strong

Text Books				
S.No.	**Title**	**Author**	**Publishers**	**Publication Year & Edition**
1	Basic Electronics	V.K.Mehta	S.Chand & Company Ltd	2008, 11th Edition
2	Internet of Things - A hands on Approach	Arshdeep Bahga, Vijay Madisetti	Orient Blackswan Private Limited	2014, First Edition
3	Principles of Electronics	V K Mehta, Rohit Mehta	S.Chand & Company Ltd	11th Edition, Reprint 2016

Pedagogy: Lecture, PPT presentation, Assignment, Quiz, Group Discussion