

UCA 1
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
COIMBATORE – 641 029

*Course Name: Computer Applications

Curriculum and Scheme of Examination under CBCS

(Applicable to the students admitted during the Academic Year 2023-2024)

Semester	Part	Subject Code	Title of the Paper	Instruction hours/cycle	Exam. Marks			Duration of Exam (hours)	Credits
					CI A	ES E	TO TAL		
I	I	23TML101	Language I@	6	25	75	100	3	3
	II	23ENG101	English -I	6	25	75	100	3	3
	III	23UCA101	Core Paper 1 - C Programming	5	25	75	100	3	4
	III	23UCA1CL	Core Practical 1 - C Programming Lab	5	40	60	100	3	3
	III	23UCA1A1	Allied Paper 1 – Business Accounting	6	25	75	100	3	5
	IV	23EVS101	Environmental Studies **	2	-	50	50	3	2
	Total			30	-	-	550	-	20
II	I	23TML202	Language II@	6	25	75	100	3	3
	II	23ENG202	English –II	6	25	75	100	3	3
	III	23UCA202	Core Paper 2 - Object Oriented Programming with C++	5	25	75	100	3	4
	III	23UCA2CM	Core Practical 2- Object Oriented Programming with C++ Lab	5	40	60	100	3	3
	III	23UCA2A2	Allied Paper 2 – Mathematics I	6	25	75	100	3	5
	IV	23VED201	Value Education- Moral and Ethics**	2	-	50	50	3	2
	Total			30	-	-	550	-	20
III	I	23TML303	Language III@	6	25	75	100	3	3
	II	23ENG303	English –III	6	25	75	100	3	3
	III	23UCA303	Core Paper 3 - Data Structures with Java Programming	4	25	75	100	3	5
	III	23UCA3CN	Core Practical 3 - Data Structures with Java Programming Lab	4	40	60	100	3	4
	III	23UCA3A3	Allied Paper 3 – Mathematics II	6	25	75	100	3	5
	IV	23UGC3S1	Skill Based subject 1- Cyber Security	2	100	-	100	3	3
	IV	23TBT301/ 23TAT301/ 23UHR3N1	Basic Tamil* / Advanced Tamil**/ Non-major elective-I**	2	-	75	75	3	2
	Total			30	-	-	675	-	25

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IV	I	23TML404	Language IV@	6	25	75	100	3	3
	II	23ENG404	English –IV	6	25	75	100	3	3
	III	23UCA404	Core Paper 4 - .Net Framework with Oracle	4	25	75	100	3	4
	III	23UCA4CO	Core Practical 4 - .Net Framework with Oracle Lab	5	40	60	100	3	3
	III	23UCA4A4	Allied Paper 4 – Distributed Operating System	5	25	75	100	3	5
	IV	23UCA4SL	Skill Based subject 2- Linux Programming Lab	2	40	60	100	3	3
	IV	23TBT402/ 23TAT402/ 23UWR4N2	Basic Tamil* / Advanced Tamil**/ Non-major elective- II**	2	-	75	75	3	2
	Total			30	-	-	675	-	23
V	III	23UCA505	Core Paper 5 - Software Engineering	6	25	75	100	3	4
	III	23UCA506	Core Paper 6 - Data Mining with R Programming	6	25	75	100	3	4
	III	23UCA507	Core Paper 7 - Artificial Intelligence and Expert Systems	6	25	75	100	3	4
	III	23UCA5CP	Core Practical 5 - Data Mining with R Programming Lab	5	40	60	100	3	3
	III	23UCA5E1	Major Elective 1	5	25	75	100	3	5
	IV	-	EDC	2	100	-	100	3	3
	-	23UCA5IT	Internship Training *****	Grade					
	Total			30	-	-	600	-	23
VI	III	23UCA608	Core Paper 8 - Web Designing	5	25	75	100	3	4
	III	23UCA609	Core Paper 9 – Python Programming	5	25	75	100	3	4
	III	23UCA610	Core Paper 10 – Data Science	5	25	75	100	3	4
	III	23UCA6CQ	Core Practical 6 - Web Designing Lab	6	40	60	100	3	3
	III	23UCA6E2	Major Elective 2	5	25	75	100	3	5
	III	23UCA6Z1	Project and Viva Voce***	4	20	80	100	-	5
	IV	23UCA6SM	Skill Based subject 3- Python Programming Lab	2	40	60	100	3	3
	Total			30	-	-	700	-	28
V		23NCC \$/NSS/YRC /PYE/ECC/R RC/ WEC101#	Cocurricular Activities*	-	50	-	50	-	1
Grand Total				-	-	-	3800	-	140

Note :

CBCS – Choice Based Credit system, CIA– Continuous Internal Assessment, ESE– End of Semester Examinations

\$ For those students who opt NCC under Cocurricular activities will be studying the prescribed syllabi of the UGC which will include Theory, Practical & Camp components. Such students who qualify the prescribed requirements will earn an additional 24 credits.

@ Hindi/Malayalam/ French/ Sanskrit – 23HIN/MLM/FRN/SAN101 - 404

* - No End-of-Semester Examinations. Only Continuous Internal Assessment (CIA)

** - No Continuous Internal Assessment (CIA). Only End-of-Semester Examinations (ESE)

*** Project Report – 60 marks; Viva voce – 20 marks; Internal-20 marks. Project 4 hours will not include in the staff Work load.

**** The students shall undergo Internship training / field work for a minimum period of 14 working days at the end of the fourth semester during summer vacation and submit the report in the fifth semester which will be evaluated for 100 marks by the concerned guide and followed by an Internal Viva voce by the respective faculty or HOD as decided by the department. According to their marks, the grades will be awarded as given below.

Marks %	Grade
85 – 100	O
70 – 84	D
60 – 69	A
50 – 59	B
40 – 49	C
< 40	U (Reappear)

Major Elective Papers (2 papers are to be chosen from the following 6 papers)

1. Multimedia System
2. Internet of Things
3. Software Project Management
4. Fuzzy logic
5. Information Security
6. Block Chain

Non-Major Elective Papers

1. Human Rights
2. Women's Rights
3. Consumer Affairs

Sub. Code & Title of the Extra Departmental Course (EDC) :

23UCA5XL – Internet and Office Automation

List of Cocurricular Activities:

1. National Cadet Corps (NCC)
2. National Service Scheme (NSS)
3. Youth Red Cross (YRC)
4. Physical Education (PYE)
5. Eco Club (ECC)
6. Red Ribbon Club (RRC)
7. Women Empowerment Cell (WEC)

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Note: In core/ allied subjects, no. of papers both theory and practical are included wherever applicable. However, the total credits and marks for core/allied subjects remain the same as stated below.

Tally Table:

S.No.	Part	Subject	Marks	Credits
1.	I	Language – Tamil/Hindi/Malayalam/ French/ Sanskrit	400	12
2.	II	English	400	12
3.	III	Core – Theory/Practical	1600	60
	III	Allied	400	20
		Electives/Project	300	15
4.	IV	Basic Tamil / Advanced Tamil (OR) Non-major electives	150	4
		Skill Based subject	300	9
		EDC	100	3
		Environmental Studies	50	2
		Value Education	50	2
5.	V	Cocurricular Activities	50	1
		Total	3800	140

- 25 % CIA is applicable to all subjects except JOC, COP and SWAYAM courses which are considered as extra credit courses.
- 100 % CIA for Cyber Security and EDC paper.
- The students who complete any **MOOC On learning platforms like SWAYAM, NPTEL, Course era, IIT Bombay Spoken Tutorial etc.,** before the completion of the 5th semester and the course completion certificate should be submitted through the HOD to the Controller of Examinations. Extra credits will be given to the candidates who have successfully completed.
- An **Onsite Training** preferably relevant to the course may be undertaken as per the discretion of the HOD.
- Students who successfully complete **Naan Mudhalvan** courses in 3rd and 5th semester will be given 2 extra credits for each course. They are asked to submit the marks to Controller of Examinations through and undersigned by the HOD.

Semester	Naan Mudhalvan Course Title
III	E-commerce Application Development with Mendix
V	Data Analytics using Tableau and Siemens Insight Hub

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Components of Continuous Internal Assessment (50 Marks)

Components		Marks	Total
Theory			
CIA I	75	(75+75) converted to 30	50
CIA II	75		
Problem based Assignment**		10	
Attendance		5	
Others*		5	
Practical			
CIA Practical		(50) converted to 30	50
Observation Notebook		15	
Attendance		5	
Practical			
CIA Practical		(25) converted to 10	25
Observation Notebook		10	
Attendance		5	
Project			
Review		15	20
Regularity		5	

* Class Participation, Case Studies Presentation, Field Work, Field Survey, Group Discussion, Term Paper, Workshop/Conference Participation. Presentation of Papers in Conferences, Quiz, Report/Content writing. Etc.

** Two Assignments to be given. (Each 5 marks).

BLOOM'S TAXONOMY BASED ASSESSMENT PATTERN

(K1-Remembering; K2-Understanding; K3-Applying; K4-Analyzing; K5-Evaluating)

Theory Examination – Part I, II, III & IV (SBS only)i) CIA I & II and ESE: 75 Marks

Knowledge Level	Section	Marks	Description	Total
K1 Q1 to 10	A (Answer all)	10 x 1 = 10	MCQ	75**
K1 – K5 Q11 to 15	B (either or type)	5 x 5 = 25	Short Answers	
K2 – K5 Q16 to 20	C (either or type)	5 x 8 = 40	Descriptive / Detailed	

****For ESE 75 marks converted to 50 marks.****ESE Practical Examination:****Option 1 :**

Knowledge Level	Section	Marks	Total
K3	Experiments	45	50
K4		05	
K5	Record Work		

Knowledge Level	Section	Marks	Total
K3	Experiments	20	25
K4		05	
K5	Record Work		

ESE Project Viva Voce:**Option 1:**

Knowledge Level	Section	Marks	Total
K3	Project Report	60	80
K4		20	
K5	Viva voce		

Programme Code : 11		B. Sc Computer Technology	
Title of the Paper :		Part IV - Environmental Studies**	
Batch 2023 - 2024	Hours / Week 2	Total Hours 30	Credits 2

Course Objectives

1. The course will provide students with an understanding and appreciation of the complex interactions of man, health and the environment. It will expose students to the multi-disciplinary nature of environmental health sciences.
2. To inculcate knowledge and create awareness about ecological and environmental concepts, issues and solutions to environmental problems.
3. To shape students into good “Ecocitizens” thereby catering to global environmental needs.
4. This course is designed to study about the types of pollutants including gases, chemicals petroleum, noise, light, global warming and radiation as well as pollutant flow and recycling and principles of environmental pollution such as air, water and soil.
5. The course will address environmental stress and pollution, their sources in natural and workplace environments, their modes of transport and transformation, their ecological and public health effects, and existing methods for environmental disease prevention and remediation.

Course Outcomes (CO)

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

K1 to K5	CO 1	Understand how interactions between organisms and their environments drive the dynamics of individuals, populations, communities and ecosystems.
	CO2	Develop an in depth knowledge on the interdisciplinary relationship of cultural, ethical and social aspects of global environmental issues.
	CO3	Acquiring values and attitudes towards complex environmental socio-economic challenges and providing participatory role in solving current environmental problems and preventing the future ones.
	CO4	To gain inherent knowledge on basic concepts of biodiversity in an ecological context and about the current threats of biodiversity.
	CO5	To appraise the major concepts and terminology in the field of environmental pollutants, its interconnections and direct damage to the wildlife, in addition to human communities and ecosystems.

Syllabus

UNIT I MULTIDISCIPLINARY NATURE OF ENVIRONMENT 6 Hours

Definition : scope and importance – Need for public awareness - Natural resources – Types of resources – Forest Resources – Water Resources – Mineral Resources – Food Resources – Energy Resources – Land Resources.

UNIT II ECOSYSTEMS 6 Hours

Concept of an ecosystem – Structure and functions of an ecosystem – Procedures, consumers and decomposers – Energy flow in the ecosystem – Ecological succession – Food chains, food web and ecological pyramids – Structure and function of the following ecosystem – Forest Ecosystem – Grassland Ecosystem – Desert Ecosystem – Aquatic Ecosystem.

UNIT III BIODIVERSITY AND ITS CONSERVATION 6 Hours

Introduction – Definition – Genetic – Species and ecosystem diversity- Bio geographical classification of India – Value of biodiversity – Biodiversity at global, national and local levels – India as a mega - diversity Nation - Hot spot of biodiversity – Threats to biodiversity - Endangered and endemic species of India – Conservation of Biodiversity – *In situ* Conservation of Biodiversity – *Ex situ* Conservation of Biodiversity

UNIT IV ENVIRONMENTAL POLLUTION 6 Hours

Definition - Causes, effects and control measures of : Air Pollution – Water Pollution – Soil Pollution – Marine Pollution – Noise Pollution – Thermal Pollution – Nuclear Pollution – Solid Waste Management: Causes, effects, control measures of urban and industrial wastes – Role of individual in prevention of pollution – Pollution case studies – domestic waste water, effluent from paper mill and dyeing, cement pollution – Disaster Management – Food, Drought, Earthquake, Tsunami, Cyclone and Landslide.

UNIT V SOCIAL ISSUES AND THE ENVIRONMENT 6 Hours

Sustainable Development – Smart City, Urban planning, Town Planning , Urban problems related to energy – Water Conservation: Rain Water Harvesting and Watershed Management – Resettlement and rehabilitation of people, its problems and concerns, case studies Narmatha Valley Project – Environmental ethics, issues and possible solutions – Climate change, global warming, ozone layer depletion, acid rain, nuclear accidents and holocaust, case studies –

Hiroshima and Nagasaki, Chernobyl – Consumerism and waste products – Environmental Protection Act – Air Pollution Act (Prevention and Control) – Water Pollution Act (Prevention and control) – Wild Life Protection Act – Forest Conservation Act – Issues involved in enforcement of environmental legislation – Public awareness – Human Population and the environment – Population Growth and Distribution – Population Explosion – Family Welfare Programme – Environment and Human Health – Human Rights – Value Education – HIV/ AIDS – Women and Child Welfare – Role of Information Technology in Environment and Human Health.

Teaching methods

Smart Class Room / Power point presentation / Seminar / Quiz / Discussion / Flipped Class

TEXT BOOK

1. P.Arul, **A Text Book of Environmental Studies**, Environmental Agency, No 27, Nattar street, Velacherry main road, Velacheery, Chennai – 42, First Edition, Nov.2004.

REFERENCE BOOKS

1. Purohit Shammi Agarwal, A text Book of **Environmental Sciences**, Publisher Mrs.Saraswati Prohit, Student Education , Behind Naswan Cinema Chopansi Road, Jodhpur.
2. Dr.Suresh and K.Dhameja, **Environmental Sciences and Engineering** , Publisher S.K.Kataria & Sons, 424/6, Guru Nanak Street, Vaisarak, Delhi -110 006.
3. J.Glynn Henry and Gary W Heinke, **Environmental Science and Engineering**, Prentice Hall of India Private Ltd., New Delhi – 110 001

Question Paper Pattern

Duration: 3 hours

Total Marks : 50

Answer all Questions (5 x 10 = 50 Marks)

Essay type, either or type questions from each unit.

Programme Code : 11		B. Sc Computer Technology	
Title of the Paper : Part IV - Value Education - Moral and Ethics**			
Batch 2023 - 2024	Hours / Week 2	Total Hours 30	Credits 2

Course Objectives

1. To impart Value Education in every walk of life.
2. To help the students to reach excellence and reap success.
3. To impart the right attitude by practicing self introspection.
4. To portray the life and messages of Great Leaders.
5. To insist the need for universal brotherhood, patience and tolerance.
6. To help the students to keep them fit.
7. To educate the importance of Yoga and Meditation.

Course Outcomes (CO)

K1 to K5	CO1	Will be able to recognize Moral values, Ethics, contribution of leaders, Yoga and its practice
	CO2	Will be able to differentiate and relate the day to day applications of Yoga and Ethics in real life situations
	CO3	Can emulate the principled life of great warriors and take it forward as a message to self and the society
	CO4	Will be able to Analyse the Practical outcome of practicing Moral values in real life situation
	CO5	Could Evaluate and Rank the outcome of the pragmatic approach to further develop the skills

Syllabus**UNIT I****4 Hours**

Moral and Ethics: Introduction – Meaning of Moral and Ethics – Social Ethics – Ethics and Culture – Aim of Education.

UNIT II**6 Hours**

Life and Teachings of Swami Vivekananda: Birth and Childhood days of Swami Vivekananda – At the Parliament of Religions – Teachings of Swami Vivekananda

UNIT III**4 Hours**

Warriors of our Nation: Subhas Chandra Bose – Sardhar Vallabhbhai Patel – Uddham Singh – V. O. Chidambaram Pillai – Bhagat Singh – Tiruppur Kumaran – Dheeran Chinnamalai – Thillaiyadi Valliammai – Velu Nachiyar – Vanchinathan

UNIT IV**8 Hours**

Physical Fitness and Mental Harmony: Simplified Physical Exercise – Hand Exercises – Leg Exercises – Neuro Muscular Breathing Exercises – Eye Exercises – Kabalabathi – Maharasana A & B – Massage - Acupressure – Relaxation – Kayakalpa Yogam - LifeForce – Aim & Objectives – Principle – Methods. Introspection – Analysis of Thoughts – Moralization of Desires – Neutralization of Anger – Eradication of Worries

UNIT V**8 Hours**

Yoga and Meditation – The Asset of India: Yogasanam – Rules & Regulations – Surya Namaskar – Asanas – Sitting – Standing – Prone - Supine - Pranayama – Naadi Sudhi – Ujjayi – Seethali – Sithkari - Benefits. Meditation – Thanduvassudhi - Agna – Shanthi – Thuriyam – Benefits.

Teaching methods

Smart Class Room / Power point presentation / Seminar / Quiz / Discussion / Flipped Class

TEXT BOOK

1. **Value Based Education – Moral and Ethics** – compiled by Kongunadu Arts and Science College (Autonomous), 2nd Edition (2021).

REFERENCE BOOKS

1. Swami Vivekananda – A Biography, **Swami Nikhilananda, Advaita Ashrama**, India, 24th Reprint Edition (2010).
2. **Gandhi, Nehru, Tagore and other eminent personalities of Modern India**, Kalpana Rajaram, Spectrum Books Pvt. Ltd., revised and enlarged edition (2004).
3. **Freedom Fighters of India**, Lion M.G. Agrawal, Isha Books Publisher, First Edition (2008).

4. **Easy steps to Yoga by Swami Vivekananda**, A Divine Life Society Publication(2000).
5. **Yoga Practices - 1** – The World Community Service Centre – Vethathiri Publications, Sixth Edition (2017),Erode.
6. **Yoga Practices - 2** – The World Community Service Centre – Vethathiri Publications – Eighth Edition (2017),Erode.

Value Education – Moral & Ethics
Question Paper Pattern (External only)

Duration: 3 Hours

Total Marks: 50

Answer all Questions (5 x 10 = 50 Marks)

Essay type, either or type questions from each unit.