



KONGU ARTS AND SCIENCE COLLEGE

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

ERODE – 638 107

B.C.A



KONGU ARTS AND SCIENCE COLLEGE

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ERODE – 638 107

2021-2022



KONGU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
ERODE – 638 107
DEPARTMENT OF COMPUTER APPLICATIONS
B.C.A

KASC BCA 2021 - 2022



SCHEME OF EXAMINATION – CBCS PATTERN

(For the Candidates admitted during the Academic Year 2021 – 2022 and Onwards)

Part	Course Code	Course Title	Inst. Hrs / Week	T / P	Examination details				Credits
					Duration in Hours	CIA	ESE	Total Marks	
SEMESTER I									
I	21 T/H/F/S/M 01	Language – I	6	T	3	50	50	100	4
II	21 E 01	English – I	6	T	3	50	50	100	4
III	21UAJCT101	Core I: Professional English -I	4	T	3	50	50	100	4
III	21UAJCT102	Core II: Programming in C	4	T	3	50	50	100	4
III	21UAJCP103	Core Practical I: C Programming	3	P	3	50	50	100	3
III	21UAJAT104	Allied – I : Numerical and Statistical Methods	5	T	3	50	50	100	4
IV	21ES01	Foundation Course – I: Environmental Studies	2	T	100 Mins	-	50@	50	2
Total			30					650	25

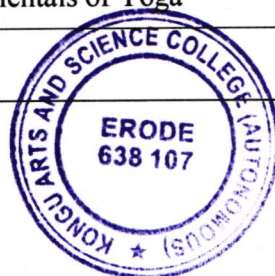
Part	Course Code	Course Title	Inst. Hrs / Week	T / P	Examination details				Credits
					Duration in Hours	CIA	ESE	Total Marks	
SEMESTER II									
I	21 T/H/F/S/M02	Language – II	6	T	3	50	50	100	4
II	21 E 02	English – II	6	T	3	50	50	100	4
III	21UAJCT201	Core III: Professional English -II	4	T	3	50	50	100	4
III	21UAJCT202	Core IV: Programming in Java	4	T	3	50	50	100	4
III	21UAJCP203	Core Practical II: Java Programming	3	P	3	50	50	100	3
III	21UAJAT204	Allied – II : Discrete Mathematics	5	T	3	50	50	100	4
IV	21VE01	Foundation Course – II : Value Educations	2	T	100 Mins	-	50@	50	2
Total			30					650	25



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PRINCIPAL,
KONGU ARTS AND SCIENCE COLLEGE
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Part	Course Code	Course Title	Inst. Hrs / Week	T / P	Examination details				Credits
					Duration in Hours	CIA	ESE	Total Marks	
SEMESTER III									
III	21UAJCT301	Core V: Digital Fundamentals and Architecture	6	T	3	50	50	100	4
III	21UAJCT302	Core VI: Programming in Python	6	T	3	50	50	100	4
III	21UAJCP303	Core Practical III: Python Programming	6	P	3	50	50	100	4
III	21UAJAT304	Allied – III : Computer Based Optimization Techniques	6	T	3	50	50	100	4
IV	21UAJSP305	Skill Based Practical I: Animation lab	4	P	3	30	45	75	3
IV	21BT01/21AT01 /21UAJNP306	Basic Tamil [*] /Advanced Tamil [#] / Non-Major Elective - I: Web Development Lab ^{\$.#}	2	T	3	-	-	75	2
IV	21SS01	Gender Studies	SS*	T		-	50	50	2
Total			30					600	23

Part	Course Code	Course Title	Inst. Hrs / Week	T / P	Examination details				Credits
					Duration in Hours	CIA	ESE	Total Marks	
SEMESTER IV									
III	21UAJCT401	Core VII: Operating Systems	5	T	3	50	50	100	4
III	21UAJCT402	Core VIII: Web Programming	5	T	3	50	50	100	4
III	21UAJCT403	Core IX : Data Structures	4	T	3	50	50	100	4
III	21UAJCP404	Core Practical IV: Web Programming Lab	5	P	3	50	50	100	4
III	21UAJAT405	Allied – IV : Business Accounting	5	T	3	50	50	100	4
IV	21UAJSP406	Skill Based Practical II : Mobile Application Development Lab	4	P	3	30	45	75	3
IV	21 BT / AT 02 / 21 UAJNP 407	Basic Tamil [*] / Advanced Tamil [#] / Non-Major Elective – II: Desktop Publishing Lab ^{\$.#}	2	T	3	-	-	75	2
IV	21SS02	Fundamentals of Yoga	SS*	T		-	50	50	2
Total			30					700	27



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KONGU ARTS AND SCIENCE COLLEGE
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Part	Course Code	Course Title	Inst. Hrs / Week	T / P	Examination details				Credits
					Duration in Hours	CIA	ESE	Total Marks	
SEMESTER V									
III	21UAJCT501	Core X: Software Engineering	5	T	3	50	50	100	4
III	21UAJCT502	Core XI: Relational Database Management Systems	5	T	3	50	50	100	5
III	21UAJCT503	Core XII: PHP & MYSQL	5	T	3	50	50	100	4
III	21UAJCP504	Core Practical V: ORACLE Lab	6	P	3	50	50	100	4
III	21UAJET 505 / 506 / 507	Elective – I / SWAYAM Courses: Computer Networks / Mobile Computing / Management Information System	5	T	3	50	50	100	4
IV	21UAJSP508	Skill Based Practical III : XAMP Lab	4	P	3	30	45	75	3
Total			30					575	24

Part	Course Code	Course Title	Inst. Hrs / Week	T / P	Examination details				Credits
					Duration in Hours	CIA	ESE	Total Marks	
SEMESTER VI									
III	21UAJCT601	Core XIII: .Net Programming	6	T	3	50	50	100	4
III	21UAJCP602	Core Practical VI: .Net Programming	5	P	3	50	50	100	4
III	21UAJET 603 / 604 / 605	Elective – II: Client Server Computing / Data Mining / Cloud Computing	5	T	3	50	50	100	4
III	21UAJET 606 / 607 / 608	Elective – III: Internet of Things / E – Commerce / Computer Graphics	5	T	3	50	50	100	4
III	21UAJCV609	Project Work Lab	5	P	3	50	50	100	4
IV	21UAJSP610	Skill Based Practical IV: Software Testing Lab	4	P	3	30	45	75	3
V	21NSS/NCC/YRC/RRC/ECO/ETH/SCI/PHD 01	Extension Activities (NSS/NCC/YRC/RRC/ECO CLUB/ETHICS CLUB/SCIENCE FORUM/PHYSICAL EDUCATION)	-	-	-	50	-	50	1
Total			30					625	24
Total			180					3800	148

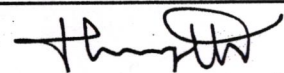
* - CIA only; # - ESE only; @ Online Examination; \$ - Courses offered to other major students only

* SS – Self Study Course



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PRINCIPAL,
KONGU ARTS AND SCIENCE COLLEGE
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LIST OF ALLIED COURSES			
Allied - I	21UAJAT104	Numerical and Statistical Methods	
Allied - II	21UAJAT204	Discrete Mathematics	
Allied - III	21UAJAT304	Computer Based Optimization Techniques	
Allied - IV	21UAJAT405	Business Accounting	
LIST OF NON-MAJOR ELECTIVE			
---	Course Code	Course Name	Offered to (Dept. Name)
NME - I	21UAJNP306	Practical : Web Development Lab	B.Com
NME -II	21UAJNP407	Practical : Desktop Publishing Lab	B.Com
LIST OF SKILL BASED COURSES			
Skill Based Practical - I	21UAJSP305	Animation Lab	
Skill Based Practical - II	21UAJSP406	Mobile Application Development Lab	
Skill Based Practical - III	21UAJSP508	PHP & MYSQL Lab	
Skill Based Practical - IV	21UAJSP610	Software Testing Lab	
LIST OF ELECTIVE COURSES			
Elective-I/ SWAYAM Courses	21UAJET505	A	Computer Networks
	21UAJET506	B	Mobile Computing
	21UAJET507	C	Management Information System
Elective-II	21UAJET603	A	Client Server Computing
	21UAJET604	B	Data Mining
	21UAJET605	C	Cloud Computing
Elective-III	21UAJET606	A	Internet of Things
	21UAJET607	B	E – Commerce
	21UAJET608	C	Computer Graphics
LIST OF EXTRA CREDIT COURSES			
NCC	21UNCC01	2 Credits (B-Certificate Cadets)	
	21UNCC02	2 Additional Credits to cadets who have appeared for C certificate	
Advanced Learners Course I	21UAJAL408	A	Android and its Applications
	21UAJAL409	B	Introduction to Bootstrap
Advanced Learners Course II	21UAJAL509	A	Big Data Analytics
	21UAJAL510	B	Artificial Intelligence and Expert Systems



Dr.T.A.SANGEETHA
CHAIR PERSON

Board of Studies / Computer Applications

Kongu Arts and Science College (Autonomous), Erode – 638 107

Dr. N. RAMAN

PRINCIPAL,

KONGU ARTS AND SCIENCE COLLEGE

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Sem	Course Code	Core I: Professional English -I	Total Marks:100		Hours Per Week	Credits
I	21UAJCT101		CIA : 50	ESE:50	4	4

Course Objectives:

1. To develop the language skills of students.
2. To enhance the lexical, grammatical, socio-linguistic and communicative competence.
3. To focus on developing students' knowledge in domain specific registers and the required language skills.

Course Outcomes (CO): On completion of the course, students should be able to

CO 1	Identify the correct usage of vocabulary and grammar in speaking and writing	K1 - K4
CO 2	Apply the language for speaking efficiently and confidently	
CO 3	Build the reading skill by using unfamiliar texts with comprehension	
CO 4	Demonstrate the language skills through academic writing	
CO 5	Develop the leadership quality and team building through linguistic competence	

K1 :Remember; K2 :Understand; K3 :Apply; K4 :Analyze

Unit –I COMMUNICATION

Listening: Listening to audio text and answering questions - Listening to Instructions.

Speaking: Pair work and small group work.

Reading: Comprehension passages - Differentiate between facts and opinion.

Writing: Developing a story with pictures.

Vocabulary: Register specific - Incorporated into the LSRW tasks.

Unit – II DESCRIPTION

Listening: Listening to process description - Drawing a flow chart.

Speaking: Role play (formal context).0.

Reading: Skimming/Scanning - Reading passages on products, equipment and gadgets.

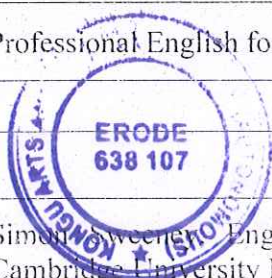
Writing: Process Description - Compare and Contrast Paragraph - Sentence Definition and extended definition - Free Writing.

Vocabulary: Register specific - Incorporated into the LSRW tasks.



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Unit – III	NEGOTIATION STRATEGIES
<p>Listening: Listening to interviews of specialists / Inventors in fields (Subject Specific).</p> <p>Speaking: Brainstorming (Mind Mapping) - Small group discussions (Subject Specific).</p> <p>Reading: Longer Reading text.</p> <p>Writing: Essay Writing (250 words).</p> <p>Vocabulary: Register specific - Incorporated into the LSRW tasks.</p>	
Unit – IV	PRESENTATION SKILLS
<p>Listening: Listening to lectures.</p> <p>Speaking: Short talks.</p> <p>Reading: Reading Comprehension passages.</p> <p>Writing: Writing Recommendations - Interpreting Visuals inputs.</p> <p>Vocabulary: Register specific - Incorporated into the LSRW tasks.</p>	
Unit – V	CRITICAL THINKING SKILLS
<p>Listening: Listening comprehension - Listening for information.</p> <p>Speaking: Making presentations (with PPT-practice).</p> <p>Reading: Comprehension passages - Note making. (Comprehension: Motivational article on Professional Competence, Professional Ethics and Life Skills).</p> <p>Writing: Problem and Solution essay - Creative writing - Summary writing.</p> <p>Vocabulary: Register specific - Incorporated into the LSRW tasks.</p>	
Skill Development Activities	
<ol style="list-style-type: none"> 1. Listening and Answering. 2. Speaking Activities through Role Play. 3. Reading and Answering. 4. Resume Preparation. 5. Vocabulary Enhancement Activities – Definitions, Synonyms, Antonyms, Keywords etc... 	
TEXT BOOK	
1	Professional English for Physical Sciences-I - TANSICHE.
REFERENCE BOOKS	
1	Simon Sweetser, English for Business Communication, Cambridge University Press, 2003.

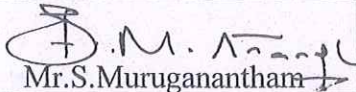
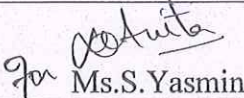



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2	Michael McCarthy, Felicity O'Dell, English Vocabulary in Use: Advanced, First South Asian Edition, Cambridge University Press, 2003.
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Web Resources

i	https://nptel.ac.in/courses/109/104/109104030/
2	https://www.edubull.com/courses/online-english-speaking-courses-video-english/tofel-ilets/basic-courses/professional-english-part-2

Course Designed By	Verified By	Approved By HOD
 Mr.S.Muruganatham	 Ms.S. Yasmin	 Dr.T.A.Sangeetha

QUESTION PAPER PATTERN

SECTION - A (10 X 1 = 10 Marks)	SECTION - B (4 X 10 = 40 Marks)
(Vocabulary) (MCQ, Info-gap questions - domain specific vocabulary)	(Reading: Two long domain-specific comprehension passages with questions pertaining to understanding and analysis - 20 Marks) (Writing: Descriptive/narrative/persuasive writing questions pertaining to domain-specific vocabulary - 20 Marks)

Mapping of COs with POs and PSOs

PO/PSO CO	PO							PSO				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	S	S	S	S	M	M	M	M	S	S	M
CO 2	S	S	S	S	S	M	M	M	S	S	S	M
CO 3	S	S	M	M	M	M	S	M	M	S	S	M
CO 4	S	S	M	M	M	M	M	M	M	S	S	M
CO 5	S	S	S	S	M	S	S	M	S	S	S	M

S-Strong, M-Medium, L-Low



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Sem	Course Code	Core II: Programming in C	Total Marks:100		Hours Per Week	Credits
I	21UAJCT102		CIA : 50	ESE :50	4	4

Course Objectives:

1. To provide exposure to problem-solving skill through C Programming.
2. To train the student to the basic concepts of the C Programming language.
3. To equip and indulge Learners in problem solving using C.

Course Outcomes (CO): On completion of the course, students should be able to

CO 1	Define data types and use them in simple data processing applications	K1 - K4
CO 2	Build simple C Programs using Looping and Control Structures	
CO 3	Apply the right data representation formats based on the requirements of the problem	
CO 4	Demonstrate the concept of User defined functions , Recursions , Scope and Lifetime of Variables, Structures and Unions	
CO 5	Develop C programs using pointers and files	

K1 :Remember; K2 :Understand; K3 :Apply; K4 :Analyze

Unit –I	Overview of C
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Importance of C - sample C program - C program structure - executing C program - Character set - C tokens - keywords and identifiers - constants - variables - data types - declaration of variables - Assigning values to variables - Assignment statement - declaring a variable as constant as volatile.

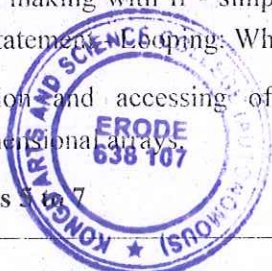
Arithmetic, Relational, logical, assignment, increment, decrement, conditional, bitwise and special operators - arithmetic expressions - operator precedence - type conversions - mathematical functions - Reading and writing a character - formatted input/output.

Chapters 1 to 4

Unit – II	Decision Making and Looping and Arrays
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Decision making with If - simple IF, IF ELSE, nested IF ELSE, ELSE IF ladder - switch - The?: Operator - GOTO statement. Looping: While, Do-While, For - Jumps in loops.


Declaration and accessing of one & two-dimensional arrays - initializing two-dimensional arrays - multidimensional arrays.

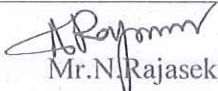
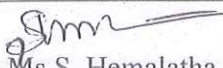
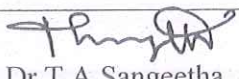
Chapters 5 to 7

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Unit – III	Functions
<p>Declaring and initializing String Variables - Reading and Writing Strings - Arithmetic Operations and comparison of strings - String Handling Functions - The form of C functions - calling a function - categories of functions - Nested functions - Recursion - call by value - call by reference.</p> <p>Chapters 8 and 9</p>	
Unit – IV	Structures and Unions
<p>Defining - giving values to members - initialization and comparison of structure variables - arrays of structure - arrays within structures - unions.</p> <p>Chapters 10</p>	
Unit – V	Pointers and Files
<p>Definition - declaring and initializing pointers - access a variable through address and through pointer - pointer expressions - Opening, closing and I/O operations on files - Random access to files - command line arguments.</p> <p>Chapters 11 and 12</p>	
Skill Development Activities	
<ol style="list-style-type: none"> 1. Develop a program to inscribe the given string on the screen using C concept. 2. Compare the scope of looping and branching tools to be used in the languages. 3. List out the real time applications can be done using C Programming languages 	
TEXT BOOK	
1	E. Balagurusamy, “Programming in ANSI C”, Fourth Edition, Tata McGraw-Hill.
REFERENCE BOOKS	
1	Schaum’s Outline Programming with C, Byron Gottfried, Second Edition, Tata McGraw-Hill
2	Let Us C, Yashavant Kanetkar, Eighth Edition, BPB Publications.
3	The C Programming Language, Kernighan and Ritchie, Second Edition, Prentice Hall, 1998.
Web Resources	
1	www.cprogramming.com
2	www.programmiz.com/c-programming
3	www.nptel.ac.in/courses/106/104/106104128/#




Dr. N. RAMAN
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 KONGU ARTS AND SCIENCE COLLEGE
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4	www.udemy.com											
Course Designed By				Verified By				Approved By HOD				
 Mr. N. Rajasekaran				 Ms. S. Hemalatha				 Dr. T. A. Sangeetha				
QUESTION PAPER PATTERN												
SECTION – A				SECTION – B				SECTION – C				
10 x 1 = 10 Marks (Multiple choice, Four options) Two questions from each unit				5 x 3 = 15 Marks (Either or choice) Two questions from each unit				5 x 5 = 25 Marks (Either or choice) Two questions from each unit				
Mapping of COs with POs and PSOs												
PO/PSO CO	PO							PSO				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	M	S	S	M	M	S	S	S	S	S	M
CO 2	S	L	S	S	L	M	S	S	S	S	S	S
CO 3	S	M	S	S	M	M	S	S	S	S	S	S
CO 4	S	M	S	S	M	M	S	S	S	S	S	M
CO 5	S	M	S	S	M	M	S	S	S	S	S	S
S-Strong, M-Medium, L-Low												




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Sem	Course Code	Core III: Professional English - II	Total Marks:100		Hours Per Week	Credits
II	21UAJCT201		CIA : 50	ESE:50	4	4

Course Objectives:

- To develop their competence in the use of English with particular reference to the workplace situation.
- To enhance the creativity of the students which will enable them to think of innovative ways to solve issues in the workplace.
- To develop their competence and competitiveness and thereby improve their employability skills.

Outcomes (CO): On completion of the course, students should be able to

CO 1	Identify the importance of linguistic competence in workplace situations	K1 - K4
CO 2	Develop LSRW skills for academic and career purposes	
CO 3	Build the employability skills through various speaking and writing tasks	
CO 4	Relate the communication skills suitable for employability	
CO 5	Illustrate the digital competence with innovation and imagination	

K1 :Remember; K2 :Understand; K3 :Apply; K4 :Analyze

Unit - I Communicative Competence

Listening: Listening to two talks/lectures by specialists on selected subject specific topics - (TED Talks) and answering comprehension exercises (inferential questions).

Speaking: Small group discussions (the discussions could be based on the listening and reading passages - open ended questions).

Reading: Two subject-based reading texts followed by comprehension activities/exercises.

Writing: Summary writing based on the reading passages.

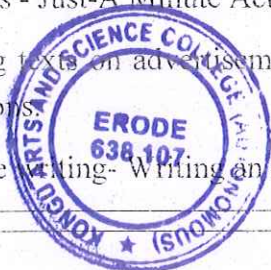
Unit - II Persuasive Communication

Listening: Listening to a product launch- sensitizing learners to the nuances of persuasive communication.

Speaking: Debates - Just-A Minute Activities

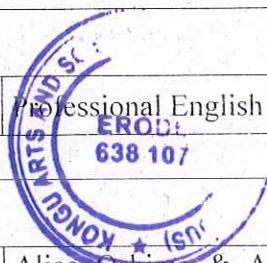
Reading: Reading texts on advertisements (on products relevant to the subject areas) and answering inferential questions.

Writing: Dialogue Writing- Writing an argumentative / persuasive essay.



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Unit - III	Digital Competence
<p>Listening: Listening to interviews (subject related).</p> <p>Speaking: Interviews with subject specialists (using video conferencing skills) - Creating Vlogs (How to become a vlogger and use vlogging to nurture interests – subject related).</p> <p>Reading: Selected sample of Web Page (subject area).</p> <p>Writing: Creating Web Pages.</p> <p>Reading Comprehension: Essay on Digital Competence for Academic and Professional Life.</p> <p>The essay will address all aspects of digital competence in relation to MS Office and how they can be utilized in relation to work in the subject area.</p>	
Unit - IV	Creativity and Imagination
<p>Listening: Listening to short (2 to 5 minutes) academic videos (prepared by EMRC/ other MOOC videos on Indian academic sites - E.g. https://www.youtube.com/watch?v=tpvicScuDy0).</p> <p>Speaking: Making oral presentations through short films - subject based.</p> <p>Reading: Essay on Creativity and Imagination (subject based).</p> <p>Writing - Basic Script Writing for short films (subject based) - Creating blogs, flyers and brochures (subject based) - Poster making - writing slogans/captions (subject based).</p>	
Unit - V	Workplace Communication and Basics of Academic Writing
<p>Speaking: Short academic presentation using PowerPoint.</p> <p>Reading & Writing: Product Profiles, Circulars, Minutes of Meeting.</p> <p>Writing an introduction, Paraphrasing, Punctuation (period, question mark, exclamation point, comma, semicolon, colon, dash, hyphen, parentheses, brackets, braces, apostrophe, quotation marks, and ellipsis), Capitalization (use of upper case).</p>	
<p>Skill Development Activities</p>	
<ol style="list-style-type: none"> 1. Group Discussion 2. Persuasive Speaking – Conversation 3. Listening Activities – Watching Videos and answering questions and summarizing the content 4. Creative Writing – Flyers, Brochures, Slogans, Captions 5. PowerPoint Presentation 	
<p>TEXT BOOK</p>	
1.	<p>Professional English for Physical Sciences-II - TANSCHÉ.</p>
<p>REFERENCE BOOKS</p>	
1.	<p>Alice Oshima & Ann Hogue, Writing Academic English, Second Edition, Addison Wesley Publishing Company, 1991.</p>



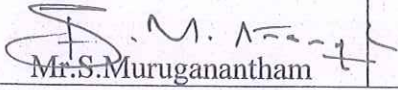
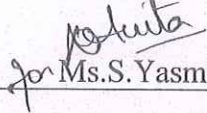
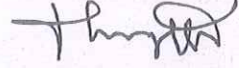
Dr. N. RAMAN
PRINCIPAL,

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MANJANAPURAM, ERODE - 638 107

2.	Lyn R. Clark, Kenneth Zimmer, Joseph Tinervia, Business English and Communication, Seventh Edition, MacMillan / McGraw-Hill, Imprint 1991.
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Web Resources

1.	https://www.coursera.org/learn/speak-english-professionally
2.	https://www.ted.com/talks/pranav_rajn_computer_science_education

Course Designed By	Verified By	Approved By HOD
 Mr. S. Muruganatham	 Ms. S. Yasmin	 Dr. T. A. Sangeetha

QUESTION PAPER PATTERN


SECTION - A (10 X 1 = 10 Marks)	SECTION - B (4 X 10 = 40 Marks)
(Vocabulary) (MCQ, Info-gap questions - domain specific vocabulary)	(Reading: Two long domain-specific comprehension passages with questions pertaining to understanding and analysis - 20 Marks) (Writing: Descriptive/narrative/persuasive writing questions pertaining to domain-specific vocabulary - 20 Marks)

Mapping of COs with POs and PSOs

PO/PSO CO	PO							PSO				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	S	S	M	S	M	M	M	S	S	S	M
CO 2	S	S	M	S	M	M	S	M	M	S	S	M
CO 3	S	S	S	M	S	M	M	M	M	S	S	M
CO 4	S	S	M	S	S	M	S	M	S	S	S	M
CO 5	S	S	S	M	M	M	M	S	S	S	S	M

S-Strong, M-Medium, L-Low




Dr. N. RAMAN
 PRINCIPAL,
 KONGU ARTS AND SCIENCE COLLEGE
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Sem	Course Code	Core IV: Programming in JAVA	Total Marks:100		Hours Per Week	Credits
II	21UAJCT202		CIA : 50	ESE :50	4	4

Course Objectives:

1. To expose the students skill with the concepts of OOPs and to make them represent the real world entities.
2. To introduce the concepts of converting the real time problems into objects and methods and their interaction with one another to attain a solution.
3. To make them design Applications using Applet and GUI.

Course Outcomes (CO): On completion of the course, students should be able to

CO 1	Build the java applications using OOP Concepts for stand-alone applications.	K1 - K4
CO 2	Develop the packages as reusable components.	
CO 3	Apply the concept of multi threading and Synchronization in java programs.	
CO 4	Detect the possible errors by applying the concepts of Exception Handling.	
CO 5	Design Applets and Graphical Programming.	

K1 :Remember; K2 :Understand; K3 :Apply; K4 :Analyze

Unit –I Fundamentals of Object-Oriented Programming

Object Oriented Paradigm, Basic Concepts of OOP, Benefits of OOP, Application of OOP, Java Evolution: History – Features – How Java Differs from C and C++. Overview of Java Language: Simple Java Program – More on Java – An Application with Two Classes – Java Program Structure – Java Tokens – Java Statements – Java Virtual Machine - Constants, Variables and Data types.

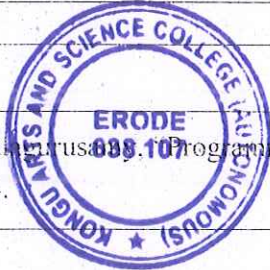
Self Study: Operators and Expressions – Decision Making and Branching – Decision Making and Looping.

Chapters 1 to 7

Unit – II Classes, Objects, Methods, Arrays and Interfaces

Classes, Objects and Methods: Defining a Class – Field Declaration – Creating Objects – Accessing Class Members – Constructors – Method Overloading – Static Members – Nesting of Methods – Inheritance – Overriding Methods – Final Variables and Methods – Final Classes – Finalizer Classes – Abstract Methods and Classes. Arrays, Strings and Vectors: One-Dimensional Arrays – Creating an Array – Two-Dimensional Arrays – Strings – Vectors – Wrapper Classes – Enumerated Types. Interfaces: Defining – Extending – Implementing – Accessing Interfaces.

Chapters 8 to 10

Unit – III	Packages and Thread Programming
<p>Java API Packages: Using System Packages – Naming Conventions – Creating Packages – Accessing Package – Using a Package – Adding Classes to a Package – Hiding Classes – Static Import. Multithreaded Programming: Creating Thread – Extending Thread – Stopping and Blocking a Thread – Life Cycle of a Thread – Using Thread Method – Thread Exception: Thread Priority – Synchronization – Implementing the Runnable Interface – Inter-Thread Communication.</p> <p>Chapters 11 and 12</p>	
Unit – IV	Managing Errors & Exceptions and Handling Files
<p>Managing Errors and Exceptions: Types of Errors – Exceptions – Syntax of Exception Handling Code – Multiple Catch Statements – Using Finally Statement – Throwing our own Exceptions – Using Exceptions for Debugging. Managing Input / Output Files in Java: Concept of Streams – Stream Classes – Byte Stream Classes – Character Stream Classes – Using Streams – Other Useful I/O Classes – Using File Class – Input / Output Exceptions – Creation of Files – Reading/Writing Characters – Reading/Writing Bytes – Handling Primitive Data Types – Concatenating and Buffering Files – Random Access Files – Interactive Input and Output – Other Stream Classes.</p> <p>Chapters 13 and 16</p>	
Unit – V	Applet Programming
<p>Applet Programming: How Applets Differ From Applications – Preparing to Write Applets – Building Applet Code – Applet Life Cycle – Creating an Executable Applet – Designing a Webpage – Applet Tag – Adding Applet to HTML File – Running the Applet – Passing Parameter to Applet – Aligning the Display – More about HTML Tags – Displaying Numerical Values – Getting Input from the User – Event Handling. Graphics Programming – The Graphic Class – Lines and Rectangles – Circles and Ellipse – Drawing Arcs – Drawing Polygons – Line Graphs – Using Control Loops in Applets – Drawing Bar Charts – Introduction to AWT Package - Introduction to Swings.</p> <p>Chapters 14 and 15</p>	
Skill Development Activities	
<ol style="list-style-type: none"> 1. To develop a program to inscribe the given string on the screen using JAVA concepts. 2. Compare the scope of looping and branching tools to be used in the languages. 3. List out the real time applications can be done using OOPS Concepts. 	
TEXT BOOK	
1	<p>E. Balakrishnan, "Object Oriented Programming with JAVA", Fifth Edition, McGraw-Hill Education Company Ltd., 2014.</p>
<div style="display: flex; justify-content: space-between; align-items: center;">  <div style="text-align: right;"> <p>DI. N. RAMAN PRINCIPAL, KONGU ARTS AND SCIENCE COLLEGE (AUTONOMOUS) NANJAN</p> </div> </div>	

REFERENCE BOOKS

1	"The Complete Reference JAVA 2", Herbert Schildt, Fifth Edition, Tata McGraw-Hill Publishing Company Ltd., 2005.
2	"Java: The Complete Reference", Herbert Schildt, McGraw Hill Education, Oracle Press 10th Edition, 2018
3	Programming with Java – John R. Hubbard, 2nd Edition, TMH.

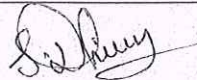
Web Resources

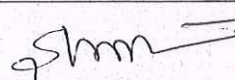
1	https://nptel.ac.in/courses/106/105/106105191/
2	https://www.w3schools.in/java-tutorial/
3	https://www.programiz.com/java-programming/online-compiler/
4	https://www.tutorialspoint.com/compile_java_online.php


Course Designed By

Verified By

Approved By HOD


 Ms.S.Dhivya


 Ms.S.Hemalatha


 Dr.T.A.Sangeetha

QUESTION PAPER PATTERN

SECTION – A	SECTION – B	SECTION – C
10 x 1 = 10 Marks (Multiple choice, Four options) Two questions from each unit	5 x 3 = 15 Marks (Either or choice) Two questions from each unit	5 x 5 = 25 Marks (Either or choice) Two questions from each unit

Mapping of COs with POs and PSOs:

CO \ PO/PSO	PO							PSO				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
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CO 3	S	M	S	S	M	M	S	S	S	S	S	S
CO 4	S	M	S	S	M	M	S	S	S	S	S	M
CO 5	S	M	S	S	M	M	S	S	S	S	S	S

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