VELS INSTITUTE OF SCIENCE, TECHNOLOGY & ADVANCED STUDIES (VISTAS)

(Deemed to be University u/s 3 of the UGC Act, 1956)

PALLAVARAM - CHENNAI - INDIA

VELS UNIVERSITY

M.C.A.

Curriculum and Syllabus

(Based On Choice Based Credit System)

Effective from the Academic Year

2020–2021

Department of Computer Applications

School of Computing Sciences

VELS UNIVERSITY

School of Computing Sciences

Department of Computer Applications

REGULATIONS

(w.e.f.,2020-2021)

1. Conditions for Admission

Candidate who has passed the under-mentioned degree examinations of this University of an examination of other institution recognized by this University as equivalent thereto provided they have undergone the course under 10+2+3 or 11+1+3 or 11+2+2 pattern or under the Open University System, shall be eligible for admission to the M.C.A. Degree Course.

(a)B.C.A., /B.E.S/B.Sc., in Computer science/Mathematics/Physics/Statistics/Applied Science
(b) B.Com/Bachelor of Bank Management/Statistics/B.B.A/B.L.M/B.A., Corporate Secretary-ship/B.A., Economics/ any other Bachelor's Degree in any discipline with Business Mathematics and Statistics or Mathematics/Statistics in Main/Allied level
(c) B.Sc., Chemistry with Mathematics and Physics and allied subjects
(d) B.E/B.Tech.,/M.B.A
(e) A Bachelor's Degree in any discipline with Mathematics as one of the subjects at the Higher Secondary level (i.e. in +2 level of the 10+2 pattern)

2. Duration of the Course

The course duration shall be two years consisting of four semesters. In order to be Eligible for the award of the degree the candidate shall successfully complete the course in a Maximum period of five years reckoned from the date of enrolment for the first semester of the course.

3. Structure of the Course and Evaluation Pattern

The duration of University examination for theory and practical subjects shall be 3 hours. The maximum mark for each theory is 100 with 40 for Continuous Internal Assessment (CIA) and 60 for University Examination. The maximum mark for each practical is 100 with 40 for Continuous Internal Assessment and 60 for University Examination. For project work the mark assigned shall be

Continuous Internal Assessment	50 marks
Dissertation	100 marks
Viva-voice	50 marks

The components for CIA may be tests, seminar, assignment etc.

For the conduct of University Examination in Practical subjects the University will appoint one external examiner one internal examiner who shall normally be the concerned practical in-charge. The University will set the questions and distribute to the department. The examiners will conduct the examinations and award the marks on the same day and forward to the University. The Head of the department will coordinate and provide the laboratory and other facilities for conducting the examination.

Project work can be carried out individually in an R&D section of any Industry or University or in the Institute in which candidate is studying. The project Work/Dissertation report shall be submitted through the guides/supervisors to the Head of the Department and then to the University not later than 31st May/31st December. If he/she fails to submit the project Work/Dissertation within the stipulated date for a particular semester, he/she may be permitted with approval of the Head of the Department to submit the Project Work/Dissertation report during the succeeding semester, within the maximum period of FIVE years from the date of admission to the first semester. Project/Dissertation evaluation and Viva-Voce shall be conducted by one external examiner and one internal examiner who shall normally be the project guide.

MASTER OF COMPUTER APPLICATIONS (MCA)

CURRICULUM

Total No. Of Credits:90

CURRICULUM

I SEMESTER

Category	Code	Course	Hour / Week			Credits
			Lecture	Tutorial	Practical	
CORE	20CMCAT11	Mathematical Foundations of Computer Science	4	1	0	5
CORE	20CMCAT12	C Programming and Data Structures	4	1	0	5
CORE	20CMCAT13	Relational Database Systems	4	0	0	4
CORE	20CMCAT14	Operating Systems	3	0	0	3
CORE	20CMCAT15	Software Engineering	3	0	3	3
CORE	20PMCAT11	PRACTICAL – I C Programming and Data Structures Laboratory	0	0	4	2
CORE	20PMCAT12	PRACTICAL – II Web technology & RDBMS	0	0	4	2
GE	20----------	Generic Elective I	2	0	0	2
		Total	**22**	**0**	**8**	**26**

II SEMESTER

Category	Code	Course	Hour / Week			Credits
			Lecture	Tutorial	Practical	
CORE	20CMCA21	Computer Communication and Networks	4	1	0	5
CORE	20CMCA22	Programming in Java	4	1	0	5
CORE	20CMCA23	Data Science	4	0	0	4
DSE	20————	Discipline Specific Elective – I	3	0	0	3
DSE	20————	Discipline Specific Elective – II	3	0	0	3
CORE	20PMCA21	PRACTICAL III- Java Programming and Networks Laboratory	0	0	4	2
CORE	20PMCA22	PRACTICAL IV- Data Science Laboratory	0	0	4	2
GE	20----------	Generic Elective II	2	0	0	2
		Total	**20**	**2**	**8**	**26**

III SEMESTER

Category	Code	Course	Hour / Week			Credits
			Lecture	Tutorial	Practical	
CORE	20CMCA31	Advanced Java Programming	4	1	0	5
CORE	20CMCA32	Embedded Systems and Internet of Things	4	1	0	5
CORE	20CMCA33	Cloud Computing	4	0	0	4
CORE	20CMCA--	Discipline Specific Elective III	3	0	0	3
CORE	20CMCA--	Discipline Specific Elective IV	3	0	0	3
CORE	20PMCA31	PRACTICAL IV- Advanced Java Programming Laboratory	0	0	4	2
CORE	20PMCA32	PRACTICAL V - Internet of Things and CloudLaboratory	0	0	4	2
GE	20----------	Generic Elective III	2	0	0	2
		Total	**20**	**2**	**8**	**26**

VI Semester

Category	Code	Course	Hour / Week			Credits	
			Lecture	Tutorial	Practical		
Core	15MCA035	Main Project	0	0	24	**12**	PART III
		Total Credits	**–**	**–**	**–**	**90**	

***Not for Classification**

**** Only for Lateral Entry Students to compensate credits in the Semester I & II**

Total Credits to Complete the Course : 90

Total Marks : 2600

List of Discipline Specific Elective Courses (DSE)

S.NO	CODE NO.	COURSE TITLE		PERIODS PER WEEK			CREDITS
			CATEGORY	L	T	P	
1.	DSE001	Blockchain Technologies	DSE	3	0	0	3
2.	DSE002	Ethical Hacking	DSE	3	0	0	3
3.	DSE003	Big Data with R	DSE	3	0	0	3
4.	DSE004	Full Stack Development	DSE	3	0	0	3
5.	DSE005	Introduction to Machine Learning	DSE	3	0	0	3
6.	DSE006	Autonomous Ground Vehicle Systems	DSE	3	0	0	3
7.	DSE007	E-Learning Techniques	DSE	3	0	0	3
8.	DSE008	Software Testing	DSE	3	0	0	3
9.	DSE009	Deep Learning Techniques and Applications	DSE	3	0	0	3
10.	DSE010	Game Programming Techniques	DSE	3	0	0	3
11.	DSE011	Multimedia Technologies	DSE	3	0	0	3
12.	DSE012	Data Visualization Techniques	DSE	3	0	0	3
13.	DSE013	UNIX Internals	DSE	3	0	0	3
14.	DSE014	C# and .NET Programming	DSE	3	0	0	3
15.	DSE015	Service Oriented Architectures	DSE	3	0	0	3
16.	DSE016	Software Project Management	DSE	3	0	0	3
17.	DSE017	Mixed Reality	DSE	3	0	0	3
18.	DSE018	Digital Image Processing and Applications	DSE	3	0	0	3
19.	DSE019	Text Mining Techniques	DSE	3	0	0	3
20.	DSE020	Data Warehousing and Data Mining Techniques	DSE	3	0	0	3
21.	DSE021	Software Quality Assurance	DSE	3	0	0	3
22.	DSE022	Introduction to Social Network Analysis	DSE	3	0	0	3
23.	DSE023	IoT Based Smart Systems	DSE	3	0	0	3
24.	DSE024	Object Oriented Analysis and Design	DSE	3	0	0	3
25.	DSE025	Artificial Intelligence	DSE	3	0	0	3
26.	DSE026	Computer Graphics	DSE	3	0	0	3

27.	DSE027	Human Computer Interaction	DSE	3	0	0	3
28.	DSE028	Wireless Sensor Networks & Protocols	DSE	3	0	0	3
29.	DSE029	Next Generation Networks	DSE	3	0	0	3
30.	DSE030	Cybernetics	DSE	3	0	0	3
31.	DSE031	Network Programming and Management	DSE	3	0	0	3
32.	DSE032	Semantic Web and Applications	DSE	3	0	0	3
33.	DSE033	Soft Computing	DSE	3	0	0	3

List of Generic Elective Courses

S. No.	Code	Course
1	20GEC01	Soft Skill – I
2	20GEC02	Soft Skill – II
3	20GEC03	Personality Development

15MCA151 SOFT SKILL – I 2 0 0 2

Course Objective

To help the students understand interpersonal skills, to support them in building interpersonal skills, to better the ability to work with others.

UNIT I PRONUNCIATION 6

1. An Introduction to Phonetics
2. Sounds – Vowel Sounds, Consonant Sounds and Diphthongs
3. Speaking with the right pronunciation
4. Regional Slant and how to overcome the slant
5. Standard Pronunciation and Received Pronunciation (R.P.)
6. Correcting common errors of pronunciation

DRILL IN LANGUAGE LAB

UNIT II SPEAKING 6

Learning to talk

Different attitude–different concept–different orientation according to the situation, aim and talk

1. Familiar Topics
2. Brain – storming, just a minute
3. Thinking Together
4. Finding the right word, Expressions, Usage, Mannerisms, Postures, Body–Language, Eye–Contact, Gestures.
5. Presenting points
6. Overcoming hesitations, Shyness and Nervousness
   [From a word to a sentence and then to a short speech]

7. Speech – Rhythm
   –Rising and falling Tone
   –Accent
   –Intonation
   –Word stress, Syllable Stress and Sentence Stress.

UNIT III DRILLING IN THE LANGUAGE LAB 6

8. Preparing a speech on a given Subject
9. Pattern of a speech to suit the audience
   –addressing the audience, slowly introducing the topic, defining the topic, points 1,2,3,…and if there is a draw–back mention it, Conclusion ‘Thank You’.

10. Choose the right word for right meaning– expression to suit the thought

11. Words – Derivatives, synonyms & Antonyms

DRILLING WITH DIFFERENT TOPICS FROM FAMILIAR TO UNFAMILIAR

UNIT IV WRITING SKILLS[creative Writing] 6

I Narration and Story – Telling

1) Narrating an incident, Cogency and Readability

2) Choosing the Tense

3) Plan of a story [Introducing the story, characters, incidents and proper end]

DRILL IN LANGUAGE LAB

II Reports

1) Agenda of a meeting
2) Circulars & Internal Memos
3) Reports of Meetings
4) Reports of Experiments
5) Business Report
6) Reporting for the media
7) Writing Press Reports
8) Conflict resolution – Adopting an agreed resolution

UNIT V READING [READING TO UNDERSTAND] 6

1) Reading with pauses
2) Reading with Intonation
3) Reading in a classroom
4) Reading to an assembly of Business men / Scientists
5) Quoting
6) Slogans in the reading material
7) Training for a News Reader/Corporate Spokesperson

Function of Commonly used Tenses
The function of the Parts of Speech in daily use in the corporate world

TOTAL: 30 HOURS

References:

www.tatamcgrawhill.com
www.dictionary.cambridge.org
www.wordsmith.org

15MCA152 SOFT SKILL – II 2 0 0 2

Course Objective

To help the students understand Speaking skills, to support them in building communication skills, to better the ability to work with others.

UNIT I SPEAKING **6**

1) Speaking at an Interview – "Interviews"
2) Meeting People
3) Exchanging Greetings
4) Introducing Oneself
5) Introducing people to others
6) Debates and Group Discussions
7) At the Interview for a Job

DRILL IN LANGUAGE LAB

UNIT II TELEPHONE CONVERSATION **6**

1) Etiquette & Manners
2) Answering the Telephone
3) Asking for someone
4) Taking and leaving messages
5) Making Enquiries

DRILL IN LANGUAGE LAB

UNIT III PRESENTATION **6**

1) Presenting a matter for discussion
2) Presenting a problem for Support
3) Presenting a product among customers and inventors
4) Slogans for advertising
5) Proverbs Re–defined
6) Saying 'No' without saying 'No'
7) Presenting a paper at a seminar/conference

DRILLING IN PRESENTATION [EXERCISES]

UNIT IV WRITING SKILLS **6**

1) Letters [Different types of Letters]
2) Developing an argument, story or an article from hints
3) Note – Making
4) Drafting
5) Summary Writing
   –Method of Summarizing

–Summarizing paragraphs, Essays, Stories, Incidents,
Long articles, Speeches.

UNT V LISTENING SKILLS [LISTENING AND TAKING NOTES] 6

1) Listening in a class – room
2) Listening to a Public – speaker
3) Listening to a Scientists
4) Listening to the news to pick–out the points
5) Listening in Corporate offices
6) Listening to a recorded speech – cassette of C.D.
7) The importance of listening in Business houses

DRILL IN LANGUAGE LAB

VI PERSONALITY

1) Personality – An Introduction –Roles of Heredity and Learning Identity Clothing/Speech/Age/Success/Reputation/Aspirations and Achievements.

2) Attitude

- Advantages of positive attitude Thought and Action
- Appearance
- Facial Expressions
- Dress Code
- Posture
- Gesture
- Know the impressions created.

3) Presenting Oneself – [Manner and matter]

- Timing
- Knowledge
- Skill and Competence
- Communication
- Behaviour
- Avoiding Anxiety
- Shrewdness

* Being true to type
* Punctuality
* Self – confidence
* Assurance

4) Path to greatness

- Self Confidence
- Self-Motivation
- Leadership Qualities
- Be Innovative and Original / Creativity

5) The Impact of appearance

- Essentials of a good appearance
- Cleanliness and morals
- Importance of dress
- Overcome shyness / fear and Anxiety
- positive thinking
- career planning
- Etiquette & Manners
- Speech
- Character
- Integrity
- Wisdom
- Courage

6) Interpersonal Skills

- Team work
- Concept of leadership
- The Virtues of a Leader
- Decision making
- Time Management

Text Books:

–Newspapers and Magazines
–Write to Communicate – GeethaNagaraj
–Spoken English – "A Self Leaning Guide to Conversation Practice", 34th Reprint, Tata McGraw Hill–New Delhi.
–Powell, In Company – Macmillan
–Personality Development – Elizabeth B. Hurlock

TOTAL: 30 HOURS

References:

www.tatamcgrawhill.com
www.dictionary.cambridge.org
www.wordsmith.org

15GPD251 PERSONALITY DEVELOPMENT – I 200 2

UNIT I

Introduction to Personality Development – Importance of Soft skills – Soft Skills for work place – First Impression – General Appearance – Posture – Cleanliness – Confidence and its usage.

UNIT II

Grooming – Attire – Attitude – Stability & Maturity Development – Strength & Weakness/ Goal Settings – Kinesis – Motivation &Self–Motivation

UNIT III

Basic etiquette – Email etiquette – Business etiquette – Telephone etiquette – Meeting etiquette – Adjustment of Role & Leadership – Team Management & Development.

UNIT IV

Stress Management – Time Management – Event Management – Change Management – Seminars & Conference organizing – Conflict Resolution – The Art of Delegating Effectively – Enhancing Personal Effectiveness.

TOTAL: 30HOURS