JSS COLLEGE OF ARTS, COMMERCE & SCIENCE

(An Autonomous College of University of Mysore)

Re-accredited by NAAC with 'A' grade

OOTY ROAD, MYSORE-570 025, KARNATAKA

ESTD-1964

SYLLABUS

M. Voc. (Software Development)

2021 -2022

DEPARTMENT OF SOFTWARE DEVELOPMENT

Scheme of Instruction For M. Voc. (Software Development) year 2021-22								
General Education Component								
(L-Lecture; T-Tutorial; P-Practical/Practice) (1 Credit = 15 Hrs)								
Years/Semesters		Paper No.	--Title	L:T:P	L	T	P	Total Hours	Total Credits
General Education								
Year 1	Sem I	MSA510	Business English	2:0:1	30	0	15	45	3
		MSA520	Data Analysis	3:0:0	45	0	0	45	3
	Sem II								06
		MSB510	Presentation and time management Skills	2:0:1	30	0	15	45	3
		MSB510	Concept of Data Mining	2:0:1	30	0	15	45	3
									06
			Skill Components						
			Design Developer	240 hours					48
				Total					60
General Education								
Year 2	Sem III	MSC510	Teamwork and Communication skills	2:0:1	30	0	15	45	3
		MSC520	Advanced Computer networks	3:0:0	45	0	0	45	3
									06
	Sem IV	MSD510	Project Estimation Skills	2:0:1	30	0	15	45	3
		MSD520	Meeting Management Skills	2:0:1	30	0	15	45	3
									06
			Skill Components						
			Software Developer	240 hours					48
				Total					60

Scheme of Assessment:

Semester-I:

Sl. no	Course Code	Course Name	Credits		Marks				
			L:T:P	Total	Th	C1	C2	Pr	Total
1	MSA510	Business English	2:0:1	03	70	15	15	70	170
2	MSA520	Data Analytics	3:0:0	03	70	15	15	100	100

Semester-II:

Sl. no	Course Code	Course Name	Credits		Marks				
			L:T:P	Total	Th	C1	C2	Pr	Total
1	MSB510	Presentation and time management Skill	2:0:1	03	70	15	15	70	170
2	MSB520	Concept of Data Mining	2:0:1	03	70	15	15	70	170

Semester-III:

Sl. no	Course Code	Course Name	Credits		Marks				
			L:T:P	Total	Th	C1	C2	P	Total
1	MSC510	Teamwork and Communication skills	2:0:1	03	70	15	15	70	170
2	MSC520	Advanced Computer networks	2:0:1	03	70	15	15	70	170

Semester-IV:

Sl. no	Course Code	Course Name	Credits		Marks				
			L:T:P	Total	Th	C1	C2	P	Total
1	MSD510	Project Estimation Skills	2:0:1	03	70	15	15	70	170
2	MSD520	Meeting Management Skills	2:0:1	03	70	15	15	70	170

General Education Component

Semester-I:

Subject Name : Business English	
Course Code : MSA510	
No. of Teaching Hours – 45	Credits : 2:0:1 L-T-P

Theory		
Unit .No	Title	Hrs
1	Understanding company structures, Developing Relationships in the workplace, Correspondence-Emailing, Written reports and telephoning	15
2	Public speaking and presentations, Meetings : Chairing, setting the ageda, controlling the conversation , Participating, turn taking, listening and taking notes, Being diplomatic, agreeing and disagreeing. Negotiations: Key negotiating language, framing your argument, Negotiating with suppliers, Negotiating with customers	10
3	Reports : Skim reading reports and news feeds, How to report information and ideas , Writing reports – style, register, conventions	5
	Total	30

Practical		
Sl.No	Title	Hrs
1	Understanding company structures	2
2	Developing Relationships in the workplace	3
3	Correspondence-Emailing, Written reports and telephoning	3
4	Public speaking and presentations	3
5	Meetings and negotiations	2
		2
	Total	15

Subject Name : Data Analysis	
Course Code : MSA520	
No. of Teaching Hours – 45	Credits : 3:0:0 L-T-P

Unit.No	Title	Hrs
1	DATA ANALYSIS : Regression modeling, Multivariate analysis, Bayesian modeling, inference and Bayesian networks, Support vector and kernel methods, Analysis of time series: linear systems analysis, nonlinear dynamics – Rule induction – Neural networks: learning and generalization, competitive learning, principal component analysis and neural networks; Fuzzy logic: extracting fuzzy models from data, fuzzy decision trees, Stochastic search methods.	15
2	MINING DATA STREAMS : Introduction to Streams Concepts – Stream data model and architecture – Stream Computing, Sampling data in a stream – Filtering streams – Counting distinct elements in a stream – Estimating moments – Counting oneness in a window – Decaying window – Realtime Analytics Platform(RTAP) applications – case studies – real time sentiment analysis, stock market predictions.	10
3	FREQUENT ITEM SETS AND CLUSTERING: Mining Frequent item sets – Market based model – Apriori Algorithm – Handling large data sets in Main memory – Limited Pass algorithm – Counting frequent itemsets in a stream – Clustering Techniques – Hierarchical – K- Means – Clustering high dimensional data – CLIQUE and PROCLUS – Frequent pattern-based clustering methods – Clustering in non-euclidean space – Clustering for streams and Parallelism.	10
4	FRAMEWORKS AND VISUALIZATION : MapReduce – Hadoop, Hive, MapR – Sharding – NoSQL Databases – S3 – Hadoop Distributed file systems – Visualizations – Visual data analysis techniques, interaction techniques; Systems and applications:	10
	Total	**45**

TEXT BOOKS:

1. Michael Berthold, David J. Hand, Intelligent Data Analysis, Springer, 2007.

2. Anand Rajaraman and Jeffrey David Ullman, Mining of Massive Datasets, Cambridge University Press, 2012.

Semester- II:

Subject Name : **Presentation and time management Skill**	
Course Code : MSC510	
No. of Teaching Hours – 45	Credits : 2:0:1 L-T-P

Theory		
Unit .No	Title	Hrs
1	Understand basic patterns of an effective presentation, Create and deliver an effective presentation, Asking questions, Answering questions, Evaluate presentation, Case study; Entrepreneurship development	10
2	Values and beliefs of time management, Goals and benchmarks-The ladders of success, Managing projects and commitments, Prioritizing your to do's	10
3	Designing the projects that matter, Inspired action; Getting the results you need, Tracking projects, Managing for accomplishment, Tools for time management	10
	Total	**30**

Practical		
Sl.No	Title	Hrs
1	Understand basic patterns of an effective presentation	1
2	Create and deliver an effective presentation	1
3	Asking questions	1
4	Answering questions	2
5	Evaluate presentation	2
6	Case study; Entrepreneurship development	2
	Total	**15**

Subject Name : **Concepts of Data Mining**	
Course Code : MSC520	
No. of Teaching Hours – 45	Credits : 2:0:1 L-T-P

Theory		
Unit .No	**Title**	**Hrs**
1	Data Mining Introduction : Introduction to Data Mining, Need of Mine Data, Evolution of Data Mining, Data Mining Tasks, Classification, Clustering, Association Mining, Challenges of Data Mining	
2	Preprocessing : Data, Attribute Values, Measurement of Length, Types and Properties of Attributes & data , Data Preprocessing Data Exploration: Data Exploration Techniques, Summary Statistics, Frequency and Mode, Percentiles, Mean and Median, Visualization, Histograms, Box Plots	10
3	Classification : OLAP, OLAP Operations, Data Mining Classification, Decision Trees, Naive Bayes Data Mining Association: Data Mining Association Analysis, Association Rule Mining, Frequent Item set Generation, FP-growth Tree Algorithm, Cluster Analysis.	**15**
		30

Practical		
Sl.No	**Title**	**Hrs**
1	Data Mining Tools: WEKA (Waikato Environment for Knowledge Analysis): is a well-known suite of machine learning software that supports several typical data mining tasks, particularly data pre-processing, clustering, classification, regression, visualization, and feature selection.	7
2	RapidMiner: Formerly called YALE (Yet another Learning Environment), is an environment for machine learning and data mining experiments that is utilized for both research and real-world data mining tasks.	8
	Total	**15**

Reference book:
1. Tan, Steinbach, Kumar Introduction to Data Mining Pearson Addison Wesley, 2006
2. Jiawei Han, Micheline Kamber, Data Mining: Concepts and Techniques, Morgan Kaufmann Publishers

Semester- III:

Subject Name : **Teamwork and Communication skills**	
Course Code : MSA510	
No. of Teaching Hours – 45	Credits : 2:0:1 L-T-P

Theory		
Sl.No	**Title**	**Hrs.**
1	Team structure, Stages of team, Traditional teams vs. Collaborative teams, Taking team action & problem solving, Team communication, Conflict resolution, Meditation, Role-Specific issues and Project presentations	2
2		
3	Communication in English, Listening skills, Reading skills, Writing skills, Speaking skills	
	Total	30

Practical		
Sl.No	**Title**	**Hrs.**
1	Team structure	1
2	Stages of team	1
3	Traditional teams vs. Collaborative teams	1
4	Taking team action & problem solving	2
5	Team communication	2
6	Conflict resolution	3
7	Meditation	1
8	Role-Specific issues	2
9	Project presentations	2
	Total	15

Subject Name : **Advanced Communication Networks**	
Course Code : MSC520	
No. of Teaching Hours – 45	Credits : 3:0:0 L-T-P

Theory		
Sl.No	**Title**	**Hrs.**
1	Review of fundamental concepts in networking and communication. Packet switching techniques and types, Foundations of networking protocols, Internet protocols and addressing. Basics of wireless Networks and Mobile IP. Routers, Routing and internetworking, network layer routing, Least cost path algorithms, Non least cost algorithms, Intra domain routing protocols, inter domain routing protocols, Congestion control in network layer	15
2	Transport and end to end protocols: Transport layer, TCP, UDP, Mobile transport protocols, TCP congestion control, Applications and network management	10
3	Packet Queues and delay analysis, Queuing disciplines, Markovian systems, Non Markovian systems, Networks in Queues, Basics of QoS and resource allocation	10
4	VPNs, Tunneling and Overlay networks, VPN, MPLS, P2P networks, Basics of VOIP, mobile ad hoc networks and wireless sensor networks. Recent trends in networking	10
	Total	45

References:

1. Nader Mir : Computer and communication networks , Pearson Education 2007

2. Leon Garcia and IndraWidjaja: CommuincationNetworks,TMH Second Edition

Semester-IV:

Subject Name : **Project Estimation skills**	
Course Code : MSD510	
No. of Teaching Hours – 45	Credits : 2:0:1 L-T-P

Theory		
Sl.No	**Title**	**Hrs.**
1	Understand project estimation	3
2	How to estimate time accurately	4
3	Methods for estimating time	13
4	Preparing your schedule	10
	Total	30

Practical		
Sl.No	**Title**	**Hrs.**
1	Understand project estimation	2
2	How to estimate time accurately	3
3	Methods for estimating time	5
4	Preparing your schedule	5
	Total	15

Subject Name : **Meeting management skills**	
Course Code : MSD520	
No. of Teaching Hours – 45	Credits : 2:0:1 L-T-P

Theory		
Sl.No	**Title**	**Hrs.**
1	Understanding meeting management	3
2	Types of meetings	4
3	Setting meeting objectives	5
4	Greetings	2
5	Conduct of meeting	5
6	Meeting closure	1
7	Minutes of meeting	5
8	Meeting followup	5
	Total	30

Theory		
Sl.No	**Title**	**Hrs.**
1	Understanding meeting management	2
2	Types of meetings	1
3	Setting meeting objectives	2
4	Greetings	1
5	Conduct of meeting	3
6	Meeting closure	1
7	Minutes of meeting	2
8	Meeting followup	3
	Total	15