#### **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-I	Practical/Pra	ctice) (1	Credit =	= 15 Hrs	5)		
Years/Se	emesters	Paper No.	Title	L:T:P	L	Т	Р	Total Hours	Total Credits	
			General	Education		•				
	Sem I		Business English	2:0:1	30	0	15	45	3	
			Data Analysis	3:0:0	45	0	0	45	3	
	-								06	
	Sem II		Presentation and time management Skills	2:0:1	30	0	15	45	3	
Year 1			Concept of Data Mining	2:0:1	30	0	15	45	3	
			Ski	ll Compone	nts					
			Design Developer	240 hours					48	
					Т	otal			60	
				General Ed	lucation					
	Sem III		Teamwork and Communication skills	2:0:1	30	0	15	45	3	
			Advanced Computer networks	3:0:0	45	0	0	45	3	
									06	
Year 2	Sem IV		Project Estimation Skills	2:0:1	30	0	15	45	3	
			Meeting Management Skills	2:0:1	30	0	15	45	3	
									06	
			Ski	ll Compone	nts					
			Software Developer		240	) hours			48	
					60					

# Scheme of Assessment:

## Semester-I:

S1.	Course	Course Name	Cre	dits			Mar	ks	
no	Code		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:

			Credits		Marks				
Sl.	Course	Course Name							
110	Coue		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:

			Credits		Marks				
S1.	Course	Course Name							
no	Code			1			1	1	
			L:T:P	Total	Th	C1	C2	Р	Total
1	MSC510	Teamwork	2:0:1	03	70	15	15	70	170
		and							
		Communicati							
		on skills							
2	MSC520	Advanced	2:0:1	03	70	15	15	70	170
		Computer							
		networks							

# **Semester-IV:**

C1	G		Credits		Marks				
SI.	Code	Course Name							
110			L:T:P	Total	Th	C1	C2	Р	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 :							
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	15
	workplace, Correspondence-Emailing, Written reports and	
	telephoning	
2	Public speaking and presentations, Meetings : Chairing, setting the ageda, controlling the conversation, Participating, turn taking, listening and taking notes, Being diplomatic, agreeing and	10
	disagreeing.	
	Negotiations: Key negotiating language, framing your argument, Negotiating with suppliers, Negotiating with customers	
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 :

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	15
	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.	
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 :						
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	10
	deliver an effective presentation, Asking questions, Answering	
	questions, Evaluate presentation, Case study; Entrepreneurship	
	development	
2	Values and beliefs of time management, Goals and benchmarks-	10
	The ladders of success, Managing projects and commitments,	
	Prioritizing your to do's	
3	Designing the projects that matter, Inspired action; Getting the	10
	results you need, Tracking projects, Managing for accomplishment,	
	Tools for time management	
	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 :

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:**

Tan, Steinbach, Kumar Introduction to Data Mining Pearson Addison Wesley, 2006

Jiawei Han, Micheline Kamber, Data Mining: Concepts and Techniques, Morgan Kaufmann Publishers

## Semester- III:

Subject Name : Teamwork and Communication skills		
Course Code :		
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	2
	teams, Taking team action & problem solving, Team	
	communication, Conflict resolution, Meditation, Role-Specific	
	issues and Project presentations	
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 :	
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.	15
	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	
2	Transport and end to end protocols: Transport layer, TCP, UDP,	10
	Mobile transport protocols, TCP congestion control, Applications	
	and network management	
3	Packet Queues and delay analysis, Queuing disciplines, Markovian	10
	systems, Non Markovian systems, Networks in Queues, Basics of	
	QoS and resource allocation	
4	VPNs, Tunneling and Overlay networks, VPN, MPLS, P2P	10
	networks, Basics of VOIP, mobile ad hoc networks and wireless	
	sensor networks. Recent trends in networking	
	Total	45

#### **References:**

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

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

### Semester-IV:

# Subject Name : **Project Estimation skills**

Course Code :

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 :		
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