



K. S. INSTITUTE OF TECHNOLOGY

An Autonomous Institution under VTU, Approved by AICTE
Department of Computer Science & Engineering
M.Tech SECOND SEMESTER SYLLABUS

Course: Decision Support Systems		Semester	II
Course Code	25MSCS214D	CIE Marks	50
Teaching Hours/Week (L:P:SDA)	3:0:0	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	03
Examination type (SEE)	Theory		
Course Objectives (Course Skill Set)			
<ul style="list-style-type: none"> Recognize the relationship between business information needs and decision making Select appropriate modeling techniques Able to Analyze, design and implement a DSS 			
Module-1			
Introduction to decision support systems: DSS Defined, History of decision support systems, Ingredients of a DSS, Data and model management, DSS Knowledge base, User interfaces, User interfaces, The DSS user, Categories and classes of DSSs, Chapter Summary. Decisions and decision makers Decision makers: who are they, Decision styles, Decision effectiveness, How can a DSS help?, A Typology of decisions, Decision theory and simon’s model of problem solving, Bounded decision making, The process of choice, Cognitive processes, Biases and heuristics in decision making.			
Module-2			
Decisions in the organization: Understanding the organization, Organizational culture. Modelling decision processes: Defining the problem and its structures, Decision models, Types of probability, Techniques for forecasting probabilities, Calibration and sensitivity			
Module-3			
Group decision support and groupware technologies: Group Decision making, the problem with groups, MDM support technologies, Managing MDM activities, the virtual workspace, chapter summary. Executive information systems: What exactly is an EIS, Some EIS history, Why area top executives so different?, EIS components, Making the EIS work, The future of executive decision making and the EIS.			
Module-4			
Designing and building decision support systems: Strategies for DSS analysis and design, The DSS developer, DSS user interface issues, chapter summary. Implementing and integrating decision support systems: DSS implementation, System evaluation, The importance of integration, chapter summary.			
Module-5			
Creative decision making and problem solving What is creativity? Creativity defined, The occurrence of creativity, Creative problem-solving techniques, Creativity and the role of technology, chapter summary.			

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

1. Three Unit Tests each of **25 Marks**
2. Two assignments each of **25 Marks** or **one Skill Development Activity of 25 marks** to attain the COs and POs
3. The sum of two tests, two assignments/skill Development Activities, will be scaled down to **50 marks**.

CIE methods /question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

Semester End Examination:

1. The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
2. The question paper consists of Part A and Part B. Part A consists of 10 questions from 5 modules, each carrying 2 marks.
3. Part B consists of 10 questions. Each full question is for 16 marks. There will be two full questions (with a maximum of three sub-questions) from each module.
4. Each full question will have a sub-question covering all the topics under a module.
5. The students will have to answer five full questions, selecting one full question from each module.

Suggested Learning Resources:**Text Books:**

- Decision support system, George M.Marakas, PHI, 2011.
- Decision Support Systems, Marakas, 2nd Edition, Pearson India, 2015.

Web links and Video Lectures (e-Resources):

- <https://www.coursera.org/lecture/business-intelligence-tools/decision-support-systems-videolecture-E8P9x>

Skill Development Activities Suggested:

The students with the help of the course teacher can take up relevant technical activities which will enhance their skill.

Course outcome (Course Skill Set):

At the end of the course the student will be able to :

Sl. No.	Description	Blooms Level
CO1	Appraise issues related to the development of DSS	L2
CO2	Select appropriate modeling techniques	L3
CO3	Analyze and implement a DSS	L3
CO4	Demonstrate qualitative and quantitative skills and critical thinking to proficiencies in the application of theory surrounding the DSS.	L2

Program Outcome of this course:

Sl. No.	Description	POs
1	Engineering Knowledge: Apply knowledge of mathematics, science, engineering fundamentals, and a specialization to the solution of complex engineering problems.	PO1
2	Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles.	PO2
3	Design/Development of Solutions: Design solutions for complex engineering problems and design system components that meet specified needs with consideration for public health and safety, cultural, societal, and environmental concerns.	PO3
4	Conduct Investigations of Complex Problems: Use research-based knowledge and methods including design of experiments, analysis, and interpretation of data, and synthesis of information to provide valid conclusions.	PO4
5	Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools to complex engineering activities with an understanding of limitations.	PO5
6	Engineer and Society / Project Management & Finance: Demonstrate knowledge and understanding of engineering and management principles to manage projects, as well as societal, health, safety, legal, and cultural issues.	PO6

Mapping of COs and POs

	PO1	PO2	PO3	PO4	PO5	PO6
CO1		x				
CO2			x		x	
CO3				x	x	
CO4		x	x			