



KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

(An Autonomous Institute under Kakatiya University, Warangal)

(Approved by AICTE, New Delhi; Recognised by UGC under 2(f) & 12(B); Sponsored by EKASILA EDUCATION SOCIETY)

Opp : Yerragattu Gutta, Hasanparthy (Mandal), WARANGAL - 506 015, Telangana, INDIA.

కాకతీయ ప్రేఘోగికి ఎవ్ విజ్ఞాన సంస్థాన, వరంగల్ - ౫౦౬ ౦౧౫

కాకతీయ సాంకేతిక విజ్ఞాన శాస్త్ర విద్యాలయం, వరంగల్ - ౫౦౬ ౦౧౫

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DEPARTMENT OF INFORMATION TECHNOLOGY



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VISION OF THE INSTITUTE

- To make our students technologically superior and ethically strong by providing quality education with the help of our dedicated faculty and staff and thus improve the quality of human life

MISSION OF THE INSTITUTE

- To provide latest technical knowledge, analytical and practical skills, managerial competence and interactive abilities to students, so that their employability is enhanced
- To provide a strong human resource base for catering to the changing needs of the Industry and Commerce
- To inculcate a sense of brotherhood and national integrity

DEPARTMENT OF INFORMATION TECHNOLOGY

VISION OF THE DEPARTMENT

- To become a center of excellence in the Information Technology discipline with effective teaching and strong research environment that makes our students globally competitive with strong ethical values and leadership abilities.

MISSION OF THE DEPARTMENT

- To impart technical knowledge to the students to turn out proficient and well groomed engineers.
- Motivate students to improve skills by attending training programs and internships that lead to develop innovative projects in emerging technologies.
- To train our students for higher education, leadership in profession and adopt quality research.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)	
PG – M.Tech. (DATA SCIENCE)	
PROGRAM EDUCATIONAL OBJECTIVES (PEOs)	The post graduates of DATA SCIENCE will be able to
PEO1 (Research and Innovation)	<i>attain proficiency in the field of data science to analyze, synthesize, simulate and use innovative techniques in research & teaching.</i>
PEO2 (Technical expertise and Successful career)	<i>excel in profession, become an entrepreneur by adopting emerging technologies in the field of data science.</i>
PEO3 (Soft skills and Lifelong learning)	<i>exhibit professional ethics, effective communication and develop solutions with the changing needs of the society for career-related activities.</i>

PROGRAM OUTCOMES (POs)	
PG – M.Tech. (DATA SCIENCE)	
PROGRAM OUTCOMES (POs)	At the time of graduation, the post graduates of DATA SCIENCE will be able to ...
PO1	<i>independently carry out research and development work to solve practical problems.</i>
PO2	<i>write and present an effective technical report/document.</i>
PO3	<i>demonstrate competency in the field of data science.</i>

PROGRAM SPECIFIC OUTCOMES (PSOs)	
PG – M.Tech. (DATA SCIENCE)	
PROGRAM SPECIFIC OUTCOMES (PSOs):	At the time of graduation, the post graduates of DATA SCIENCE will be able to ...
PSO1	<i>apply the knowledge of data structures, data science, neural networks and machine learning techniques to solve real-world problems.</i>
PSO2	<i>demonstrate data analytical skills to build and assess models for handling large-scale data.</i>



PG – M.Tech. (DATA SCIENCE)

SCHEME OF INSTRUCTION & EVALUATION

(I Semester to IV Semester)

(Applicable from the Academic Year 2020-21)



DEPARTMENT OF INFORMATION TECHNOLOGY
KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE, WARANGAL - 15
(An Autonomous Institute under Kakatiya University, Warangal)
SCHEME OF INSTRUCTION & EVALUATION FOR TWO YEAR POSTGRADUATE PROGRAMME
M.TECH. (DATA SCIENCE)

PRR-20

SEMESTER-I

Sr. No.	Course Type	Course Code	Course Name	Teaching Scheme			Credits	Evaluation Scheme								
				L	T	P		CIE -TA						ESE	Total Marks	
								PRE				Minor	MSE			Total
								ATLP	CRP	CP	PPT					
1	PC	P20DS101	Advanced Data Structures and Algorithms	3	-	-	3	8	8	8	6	10	20	60	40	100
2	PC	P20DS102	Mathematical Foundations for Data Science	3	-	-	3	8	8	8	6	10	20	60	40	100
3	PE	P20DS103	Professional Elective-1	3	-	-	3	8	8	8	6	10	20	60	40	100
4	PE	P20DS104	Professional Elective-2	3	-	-	3	8	8	8	6	10	20	60	40	100
5	PC	P20DS105	Advanced Data Structures and Algorithms Laboratory	-	-	4	2	-	-	-	-	-	-	60	40	100
6	PC	P20DS106	Data Science Laboratory	-	-	4	2	-	-	-	-	-	-	60	40	100
7	MC	P20MC107	Research Methodology and IPR	2	-	-	2	8	8	8	6	10	20	60	40	100
8	AC	P20AC108	Audit Course - 1	2	-	-	1	8	8	8	6	10	20	60	40	100
Total:				16	-	8	19							480	320	800

[L= Lecture, T = Tutorials, P = Practicals, C = Credits, ATLP = Assignments, CRP = Course Research Paper, CP = Course Patent, PPT = Course Presentation, Minor=Minor Examination, MSE=Mid Semester Examination and ESE=End Semester Examination]

Professional Elective-1		Professional Elective-2		Audit Course-1	
P20DS103A: Advanced Data Mining		P20DS104A: Big Data Analytics		P20AC108A: English for Research Paper Writing	
P20DS103B: Artificial Intelligence		P20DS104B: Natural Language Processing		P20AC108B: Sanskrit for Technical Knowledge	
P20DS103C: Information Retrieval Systems		P20DS104C: Soft Computing		P20AC108C: Constitution of India	
P20DS103D: MOOCs		P20DS104D: MOOCs		P20AC108D: Pedagogy Studies	

Total Contact Periods/Week: 24

Total Credits: 19

Note: Additional Learning: Students are advised to do MOOCs to bridge the gap in the curriculum, as suggested by the Department Academic Advisory Committee (DAAC). The credits earned by the students through MOOCs will be printed in the semester grade sheet.



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M.TECH. (DATA SCIENCE)

PRR-20

SEMESTER-II

Sr. No.	Course Type	Course Code	Course Name	Teaching Scheme			Credits	Evaluation Scheme								
				L	T	P		CIE - TA						ESE	Total Marks	
								PRE				Minor	MSE			Total
								ATLP	CRP	CP	PPT					
1	PC	P20DS201	Advanced Neural Networks	3	-	-	3	8	8	8	6	10	20	60	40	100
2	PC	P20DS202	Machine Learning	3	-	-	3	8	8	8	6	10	20	60	40	100
3	PE	P20DS203	Professional Elective-3	3	-	-	3	8	8	8	6	10	20	60	40	100
4	PE	P20DS204	Professional Elective-4	3	-	-	3	8	8	8	6	10	20	60	40	100
5	PC	P20DS205	Neural Networks Laboratory	-	-	4	2	-	-	-	-	-	-	60	40	100
6	PC	P20DS206	Machine Learning Laboratory	-	-	4	2	-	-	-	-	-	-	60	40	100
7	PROJ	P20DS207	Mini Project with Seminar	-	-	4	2	-	-	-	-	-	-	100	-	100
8	AC	P20AC208	Audit Course - 2	2	-	-	1	8	8	8	6	10	20	60	40	100
Total:				14	-	12	19							520	280	800

[L= Lecture, T = Tutorials, P = Practicals, C = Credits, ATLP = Assignments, CRP = Course Research Paper, CP = Course Patent, PPT = Course Presentation, Minor=Minor Examination, MSE=Mid Semester Examination and ESE=End Semester Examination]

Professional Elective- 3	Professional Elective- 4	Audit Course - 2
P20DS203A: Reinforcement Learning	P20DS204A: Social Data Analytics	P20AC208A: Stress Management by Yoga
P20DS203B: Web Analytics and Development	P20DS204B: Predictive Analytics	P20AC208B: Value Education
P20DS203C: Information and Cyber Security	P20DS204C: Distributed Systems	P20AC208C: Personality Development through Life Enlightenment Skills
P20DS203D: MOOCs	P20DS204D: MOOCs	P20AC208D: Disaster Management

Total Contact Periods/Week: 26

Total Credits: 19

Note: The students shall undergo mandatory Industrial training/ Internship for at least 6 to 8 weeks during summer vacation at Industry/R&D organization. Internship evaluation will be done during the III semester.

Note: Additional Learning: Students are advised to do MOOCs to bridge the gap in the curriculum, as suggested by the Department Academic Advisory Committee (DAAC). The credits earned by the students through MOOCs will be printed in the semester grade sheet.



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M.TECH. (DATA SCIENCE)

SEMESTER-III

Sr. No.	Course Type	Course Code	Course Name	Teaching Scheme			Credits	Evaluation Scheme								
				L	T	P		CIE - TA						ESE	Total Marks	
								I ² RE				Minor	MSE			Total
								ATLP	CRP	CP	PPT					
1	PE	P20DS301	Professional Elective-5	3	-	-	3	8	8	8	6	10	20	60	40	100
2	OE	P20OE302	Open Elective	3	-	-	3	8	8	8	6	10	20	60	40	100
3	PROJ	P20DS303	Dissertation Phase - I/Industrial Project <i>(to be continued in IV - Semester also as Dissertation Phase - II)</i>	-	-	18	9	-	-	-	-	-	-	100	-	100
4	PROJ	P20DS304	Internship Evaluation	-	-	2	-	-	-	-	-	-	-	100	-	100
Total:				6	-	20	15							320	80	400

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Professional Elective- 5	Open Elective
P20DS301A: Medical Image Processing	P20OE302A: Business Analytics
P20DS301B: Video Analytics	P20OE302B: Industrial Safety
P20DS301C: Blockchain Technologies	P20OE302C: Operations Research
P20DS301D: MOOCs	P20OE302D: Cost Management of Engineering Projects
	P20OE302E: Composite Materials
	P20OE302F: Waste to Energy
	P20OE302G: Renewable Energy Sources
	P20OE302H: MOOCs

Total Contact Periods/Week: 26

Total Credits: 15

Note: Additional Learning: Students are advised to do MOOCs to bridge the gap in the curriculum, as suggested by the Department Academic Advisory Committee (DAAC). The credits earned by the students through MOOCs will be printed in the semester grade sheet.



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PRR-20

SCHEME OF INSTRUCTION & EVALUATION FOR TWO YEAR POSTGRADUATE PROGRAMME
M.TECH. (DATA SCIENCE)

SEMESTER-IV

Sr. No.	Course Type	Course Code	Course Name	Teaching Scheme			Credits	Evaluation Scheme									
				L	T	P		CIE - TA				ESE	Total Marks				
								I ² RE									
								ATLP	CRP	CP	PPT			Minor	MSE	Total	
1	PROJ	P20DS401	Dissertation Phase - II	-	-	30	15	-	-	-	-	-	-	60	40	100	
Total:				-	-	30	15								60	40	100

[L= Lecture, T = Tutorials, P = Practicals, C = Credits, ATLP = Assignments, CRP = Course Research Paper, CP = Course Patent, PPT = Course Presentation, Minor=Minor Examination, MSE=Mid Semester Examination and ESE=End Semester Examination]

Total Contact Periods/Week: 30

Total Credits: 15

COURSE CREDIT STRUCTURE

Semester	PRR-20 Curriculum	As per Model Curriculum
I	19	18
II	19	18
III	15	16
IV	15	16
Total:	68	68

COURSE WEIGHTAGE

Courses	% Weightage of Courses
Professional Theory	42.85 % (9/21)
Professional Lab	38.1 % (8/21)
Other	19.05 % (4/21)
Total:	100 % (21/21)

SEMESTER vs COURSE CATEGORY WEIGHTAGE

Number of Courses / Number of Credits (*Course Category wise*)

Semester	MC	PC	PE	OE	PROJ	AC	TOTAL
I	1/2	4/10	2/6	-	-	1/1	8/19
II	-	4/10	2/6	-	1/2	1/1	8/19
III	-	-	1/3	1/3	2/9	-	4/15
IV	-	-	-	-	1/15	-	1/15
Total	1/2	8/20	5/15	1/3	4/26	2/2	21/68
% Weightage of Course Category	2.94 % (2/68)	29.41 % (20/68)	22.05 % (15/68)	4.41 % (3/68)	38.23 % (26/68)	2.94 % (2/68)	100 % (68/68)