

## ACADEMIC REGULATIONS of M.Tech.

Applicable to the students admitted from the  
Academic year 2017-2018



### **MAHARAJ VIJAYARAM GAJAPATHI RAJ COLLEGE OF ENGINEERING (Autonomous)**

(Approved by AICTE, New Delhi, and permanently affiliated to JNTUK, Kakinada)

Re-Accredited by NBA, Re-accredited by NAAC with 'A' Grade,

Listed u/s 2(f) & 12(B) of UGC Act 1956.

Vijayaram Nagar Campus, Chintalavalasa,

Vizianagaram-535005, Andhra Pradesh

## Academic Regulations for M.Tech. Programmes

Applicable to the students admitted from the Academic year 2015-2016 onwards.

### 1. COURSE PATTERN:

- The program is for 2 academic years with 4 semesters.

### 2. AWARD OF DEGREE:

A student will be declared eligible for the award of degree if he/she fulfills the following academic regulations.

- a) A student shall be declared eligible for the award of the degree, if he/she pursues a course of study for not less than Two academic years and not more than Four academic years.
- b) The student shall register for 80 credits and secure all 80 credits.
- c) Students who fail to complete their Two Years Course of study within Four years shall forfeit their seat and their admission shall stand cancelled.

### 3. COURSE STRUCTURE:

#### M.TECH:

The total course will consist of the following components.

|                             |       |               |
|-----------------------------|-------|---------------|
| a) Core Mandatory(Theory)   | CM    | 21-27 credits |
| b) Core Mandatory(Lab)      | CM(L) | 02-06 credits |
| c) Core Elective (Theory)   | CE(T) | 15-21 credits |
| d) Comprehensive Viva voce  | CV    | 01-03 credits |
| e) Self Study(Prerequisite) | SS    | 01-03 credits |
| f) Seminar                  | SE    | 01-03 credits |
| g) Research methodologies   | RM    | 01-02 credits |
| h) Project phase 1          | PR    | 06-12 credits |
| i) Project phase 2          | PR    | 09-15 credits |

\*For all the programs offered, in the list of courses for electives one of the choices would be "MOOCs". Each department shall short list MOOCs course/(s) meeting the requirements of course duration, credits, etc., from time to time. The same shall be placed in the immediate BoS meeting for ratification.

#### 4. ABOUT GRADING SYSTEM:

Performance of a student is evaluated in terms of earned credit weighed marking system

Earned credits are defined as the sum of course credits in which grade points above a certain cut off have been obtained for declaring student pass in that course

- Points earned in a semester:

$\Sigma$  (course credits earned x Grade points)

Semester Grade Point Average (SGPA) for the current semester which is calculated on the basis of grade points obtained in all courses, except audit courses and courses in which satisfactory or course continuation has been awarded,

$SGPA = \Sigma(\text{course credits earned} \times \text{Grade points}) /$

$\Sigma(\text{Total course credits in the semester.})$

Cumulative Grade Point Average (CGPA) is calculated on the basis of all pass grades obtained in all courses, except audit courses, obtained in all completed semesters

**$CGPA = \Sigma(\text{course credits earned} \times \text{Grade points}) \text{ over all semesters} / \Sigma(\text{Total course credits in all the semesters.})$**

The UGC recommends a 10-point grading system with the following letter grades as given below:

|    |                 |    |
|----|-----------------|----|
| O  | (Outstanding)   | 10 |
| A+ | (Excellent)     | 9  |
| A  | (Very Good)     | 8  |
| B+ | (Good)          | 7  |
| B  | (Above Average) | 6  |
| C  | (Average)       | 5  |
| P  | (Pass)          | 4  |
| F  | (Fail)          | 0  |
| Ab | (Absent)        | 0  |

- A student obtaining Grade F shall be considered failed and will be required to reappear in the examination.

## Illustration of Computation of SGPA and CGPA and Format for Transcripts

Computation of SGPA and CGPA

### Illustration for SGPA

| Course   | Credit    | Grade<br>Letter | Grade<br>point | Credit Point<br>(Credit x Grade) |
|----------|-----------|-----------------|----------------|----------------------------------|
| Course 1 | 3         | A               | 8              | 3 X 8 = 24                       |
| Course 2 | 4         | B+              | 7              | 4 X 7 = 28                       |
| Course 3 | 3         | B               | 6              | 3 X 6 = 18                       |
| Course 4 | 3         | O               | 10             | 3 X 10 = 30                      |
| Course 5 | 3         | C               | 5              | 3 X 5 = 15                       |
| Course 6 | 4         | B               | 6              | 4 X 6 = 24                       |
|          | <b>20</b> |                 |                | <b>139</b>                       |

Thus, **SGPA** =  $139/20 = 6.95$

### Illustration for CGPA

| Semester 1 | Semester 2 | Semester 3 | Semester 4 |
|------------|------------|------------|------------|
| Credit: 20 | Credit: 22 | Credit: 25 | Credit: 26 |
| SGPA: 6.9  | SGPA: 7.8  | SGPA: 5.6  | SGPA: 6.0  |

Thus, **CGPA** =  $20 \times 6.9 + 22 \times 7.8 + 25 \times 5.6 + 26 \times 6.0$

**= 7.57**

**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**M.Tech(Data Science)**  
**Course Structure**

**Semester – I**

| Semester - I            |              |  |    |   |   |         |
|-------------------------|--------------|--|----|---|---|---------|
| S. No                   | Subject Code | Subject  | L  | T | P | Credits |
| 1                       | A1DCT101     | Elective - I   | 4  | - | - | 4       |
| 2                       | A1DCT102     | Relational Database Management Systems                 | 3  | - | 2 | 4       |
| 3                       | A1DCT103     | Data Preparation                                       | 4  | - | - | 4       |
| 4                       | A1DCT104     | R & Python for Data Scientists                         | 4  | - | - | 4       |
| 5                       | A1DST105     | Machine Learning                                       | 4  | - | - | 4       |
| 6                       | A1DST106     | Statistical & Predictive Analytics for Data Scientists | 3  | - | - | 3       |
| 7                       | A1DSL101     | Data Science Practice Session using R & Python Lab     | -  | - | 3 | 2       |
| Total Number of Credits |              |  | 22 | - | 5 | 25      |

**Semester – II**

| Semester – II           |              |                       |    |   |   |         |
|-------------------------|--------------|-----------------------|----|---|---|---------|
| S. No                   | Subject Code | Subject               | L  | T | P | Credits |
| 1                       | A1DST111     | Cloud Computing       | 4  | - | - | 4       |
| 2                       | A1DST112     | Hadoop & Big Data     | 4  | - | - | 4       |
| 3                       | A1DST2XX     | NoSQL Database        | 3  | - | 2 | 4       |
| 4                       | A1DST2XX     | Elective – II         | 3  | - | - | 3       |
| 5                       | A1DST2XX     | Elective – III        | 3  | - | - | 3       |
| 6                       | A1DST2XX     | Elective – IV         | 3  | - | - | 3       |
| 7                       | A1DSL102     | Hadoop & Big Data Lab | -  | - | 3 | 2       |
| Total Number of Credits |              |                       | 20 | - | 5 | 23      |

**Semester – III**

| S. No                   | Subject Code | Subject                | L | T | P | Credits |
|-------------------------|--------------|------------------------|---|---|---|---------|
| 1                       | A1DST108     | Research Methodologies | - | - | - | 2       |
| 2                       | A1DSV401     | Comprehensive Viva     | - | - | - | 2       |
| 3                       | A1DSR401     | Pre-requisite Study    | - | - | - | 2       |
| 4                       | A1DSS501     | Seminar                | - | - | - | 2       |
| 5                       | A1DSP501     | Project Phase – I      | - | - | - | 8       |
| Total Number of Credits |              |                        | - | - | - | 16      |

**Semester – IV**

| S. No                   | Subject Code | Subject            | L | T | P | Credits |
|-------------------------|--------------|--------------------|---|---|---|---------|
| 1                       | A1DSP502     | Project Phase – II | - | - | - | 16      |
| Total Number of Credits |              |                    | - | - | - | 16      |

| <b>Elective – I</b> |                     |  |
|---------------------|---------------------|--|
| <b>S. No</b>        | <b>Subject Code</b> | <b>Subject</b>                             |
| 1                   | A1DST201            | Advanced Data Structures                   |
| 2                   | A1DST202            | Mathematical Foundations for Data Sciences |

| <b>Elective - II</b> |                     |                           |
|----------------------|---------------------|---------------------------|
| <b>S. No</b>         | <b>Subject Code</b> | <b>Subject</b>            |
| 1                    | A1DST204            | Data Quality Management   |
| 2                    | A1DST205            | Decision Management       |
| 3                    | A1DST206            | Survival & Risk Analytics |

| <b>Elective – III</b> |                     |                          |
|-----------------------|---------------------|--------------------------|
| <b>S. No</b>          | <b>Subject Code</b> | <b>Subject</b>           |
| 1                     | A1DST207            | Marketing Analytics      |
| 2                     | A1DST208            | Social Media Analytics   |
| 3                     | A1DST209            | Financial Data Analytics |

| <b>Elective – IV</b> |                     |                                  |
|----------------------|---------------------|----------------------------------|
| <b>S. No</b>         | <b>Subject Code</b> | <b>Subject</b>                   |
| 1                    | A1DST207            | Fraud Compliance                 |
| 2                    | A1DST208            | Customer Targeting               |
| 3                    | A1DST209            | Computer Optimization Techniques |