ACADEMIC REGULATIONS of M.Tech.

**Applicable to the students admitted from the
Academic year 2015-2016**

MAHARAJ VIJAYARAM GAJAPATHI RAJ COLLEGE OF ENGINEERING

(Autonomous)

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

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

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

Vijayaram Nagar Campus, Chintalavalasa,

Vizianagaram-535005, Andhra Pradesh

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:

Σ (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= Σ(course credits earned x Grade points) /
Σ(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= Σ (course credits earned x Grade points) over all semesters / Σ (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 Letter	Grade point	Credit Point (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
	20			**139**

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, $\textbf{CGPA} = \dfrac{20 \times 6.9 + 22 \times 7.8 + 25 \times 5.6 + 26 \times 6.0}{80} = \textbf{7.57}$

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Course Structure for M. Tech. (Power Systems)

S.No	Subject Code	Subject	L	T	P	Credits
Semester I						
1	A1EPS201	Power System Operation and Control	4	-	-	4
2	A1EPS202	HVDC Transmission	4	-	-	4
3	A1EPS203	Modeling & Simulation of Power Electronic Systems	4	-	-	4
4	A1EPS205	Renewable Energy Sources	4	-	-	4
5	A1EPS3XX	Elective – I	3	-	-	3
6	A1EPS3XX	Elective – II	3	-	-	3
7	A1PSL201	Power Systems Laboratory	-	-	3	2
		Total Number of credits				24

S.No	Subject Code	Subject	L	T	P	Credits
Semester II						
1	A1EPS206	Power System Dynamics	4	-	-	4
2	A1EPS207	Flexible AC Transmission Systems	4	-	-	4
3	A1EPS208	Power Quality	4	-	-	4
4	A1EPS210	Smart Grid	4	-	-	4
5	A1EPS3XX	Elective - III	3	-	-	3
6	A1EPS3XX	Elective - IV	3	-	-	3
7	A1PSL202	Simulation Laboratory	-	-	3	2
		Total Number of credits				24

S.No	Subject Code	Subject	L	T	P	Credits
Semester III						
1	A1EPS601	Research Methodologies	-	-	-	2
2	A1EPS602	Comprehensive Viva	-	-	-	2
3	A1EPS603	Pre-requisite Study	-	-	-	2
4	A1EPS604	Seminar	-	-	-	2
5	A1EPS605	Project Phase - I	-	-	-	8
		Total Number of Credits				16

Semester IV						
S.No	**Subject Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	A1EPS606	Project Phase - II	-	-	-	16
				Total Number of Credits		**16**

Elective - I		
S. No	**Subject Code**	**Subject**
1	A1EPS301	Embedded Systems
2	A1EPS302	Digital Signal Processing
3	A1EPS303	Modern Control Systems

Elective - II		
S. No	**Subject Code**	**Subject**
1	A1EPS304	Generation & measurements of High Voltages
2	A1EPS305	AI Techniques
3	A1EPS306	Power System restructuring & Deregulation

Elective - III		
S. No	**Subject Code**	**Subject**
1	A1EPS307	Distribution Automation
2	A1EPS308	Power System Condition Monitoring
3	A1EPS309	Advanced Power System Protection

Elective – IV		
S. No	**Subject Code**	**Subject**
1	A1EPS307	Power System Planning and Reliability
2	A1EPS308	Power System transients
3	A1EPS309	High Voltage Testing Techniques