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-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

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:

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, **CGPA** = 20 x 6.9 + 22 x 7.8 + 25 x 5.6 + 26 x 6.0

$$\frac{}{80} = \mathbf{7.57}$$

Preamble

Product design and manufacturing engineering involves the study of the design methodologies, engineering materials, and the selection and control of manufacturing processes used in the development, design, and manufacturing of engineering products. Emphasis is on quantitative and systematic analytical techniques and methodologies that are used to solve real-life industrial product design, manufacturing controls, product failure, and materials and process selection problems. A degree in product design and manufacturing engineering involves coursework in materials science and engineering, manufacturing processes, advanced product design, manufacturing control, modelling of production systems.

Product design and manufacturing engineers are innovators whose designs enhance people's lives. They integrate new concepts and prototypes and devise methods and systems to develop desirable products, from design and planning to production and delivery, for a globally competitive marketplace. Some of the career options for Product Design and Manufacturing Engineers include product design and development, manufacturing, research and development, production engineer, manufacturing engineer, systems engineer, quality engineer, test engineer, entrepreneur.

COURSE STRUCTURE

M.TECH (PRODUCT DESIGN & MANUFACTURING)

DEPARTMENT OF MECHANICAL ENGINEERING

I SEMESTER

S.NO.	Subject Code	Subject	L	T	P	C
1	A1PDT101	Product Design	3	1		4
2	A1PDT102	Computer Aided Design	3	1		4
3	A1PDT103	Materials and Processes selection	4			4
4	A1PDT104	Advanced Manufacturing Technology	4			4
5	A1PDT2XX	Elective-I	3			3
6	A1PDT2XX	Elective-II	3			3
7	A1PDL101	Advanced Manufacturing Laboratory	0	0	3	2
		TOTAL				**24**

Elective - I		
1	A1PDT201	Project Management
2	A1PDT202	Quality and reliability engineering
3	A1PDT203	Industrial design and ergonomics

Elective - II		
1	A1PDT204	Mechatronics and Robotics
2	A1PDT205	Lean and agile manufacturing
3	A1PDT206	Flexible manufacturing systems

II SEMESTER

S.NO.	Subject Code	Subject	L	T	P	C
1	A1PDT105	Design for Manufacturing and Assembly	4			4
2	A1PDT106	Computer Aided Manufacturing	4			4
3	A1PDT107	Digital Manufacturing	4			4

4	A1PDT108	Product life cycle management	4			4
5	A1PDT2XX	Elective III	3			3
6	A1PDT2XX	Elective IV	3			3
7	A1PDL102	CAE Laboratory	0	0	3	2
		TOTAL				**24**

Elective - III		
1	A1PDT207	Advanced machine design
2	A1PDT208	Finite element analysis
3	A1PDT209	Computational Fluid Dynamics
Elective - IV		
1	A1PDT210	Surface processing techniques
2	A1PDT211	Six Sigma
3	A1PDT212	Non-traditional machining processes

III SEMESTER

S. No	**Subject Code**	**Subject**	**L**	**T**	**P**	**C**
1	A1PDT109	Research Methodologies	2			2
2	A1PDV401	Comprehensive Viva-Voce				2
3	A1PDR401	Self-Study (Pre-requisite)				2
4	A1PDS501	Seminar				2
5	A1PDP501	Project Phase - I				8
		Total				**16**

IV SEMESTER

S.No	**Subject Code**	**Subject**	**L**	**T**	**P**	**C**
1	A1PDP502	Project Phase – II				16
		Total				**16**