UNDERGRADUATE DEGREE COURSES

(Engineering & Technology)

Guidelines - 2018

Rajasthan Technical University, Kota

Office of Dean Academic Affairs
Rajasthan Technical University, Kota

The guidelines for new Scheme for Undergraduate Degree Courses in Engineering & Technology

1 Rajasthan Technical University, Kota has implemented the Model Curriculum for Undergraduate Degree Courses in Engineering & Technology (with some modifications):

a) For students admitted in Session 2018-19 and onwards.
b) For students admitted in Session 2017-18, from II year onwards. However, for existing I year, the marks obtained will be converted to equivalent credit by RTU.

2 Definition of Credit:

1 Hr. Lecture (L) per week	1 credit
1 Hr. Tutorial (T) per week	1 credit
1 Hr. Practical (P) per week	0.5 credits
2 Hours Practical(Lab)/week	1 credit

3 General rules for Credits:

a) A credit of 166 will be required for a student to be eligible to get Undergraduate Degree in Engineering & Technology.
b) A credit of 125 (166-41) will be required for a student to be eligible to get Undergraduate Degree in Engineering & Technology admitted through Lateral Entry (LEEP) in 2018-19 and onward.
c) A student will be eligible to get B. Tech. (Honours) Degree, if he/she completes an additional 20 credits. These should be acquired through MOOCs only.
d) The structure of the degree will be as follows:

Degree	Required Credits
B. Tech.	166*
B. Tech. (Honours)	166+20 (MOOC's)

* for LEEP students 125 credits

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4 Structure of Undergraduate Engineering & Technology Program:

S. No.	Category	Break up of Credits
1	Humanities and Social Sciences including Management courses (HSMC)	**10**
2	Basic Science courses (BSC)	**23**
3	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc. (ESC)	**24**
4	Professional core courses (PCC)	**84**
5	Professional Elective courses relevant to chosen specialization/branch (PEC)	
6	Open subjects – Electives from other technical and /or emerging subjects (OE)	**6**
7	Project work, seminar and internship in industry or elsewhere	**15**
8	Social Outreach, Discipline & Extra Curriculum Activities (SODECA)	**4**
9	Mandatory Courses [Environmental Sciences, Induction training, Indian Constitution, Essence of Indian Traditional Knowledge].	**(non-credit)**
	Total	**166**
10	B. Tech. (Honours) Degree shall be awarded on acquiring additional 20 credits through MOOCs.	**166+20**

5 Course Code and Definition:

S. No.	Category		Code
1	Humanities and Social Sciences including Management Courses	HSMC	**1**
2	Basic Science Courses	BSC	**2**
3	Engineering Science Courses	ESC	**3**
4	Professional Core Courses	PCC	**4**
5	Professional Elective Courses	PEC	**5**
6	Open Electives	OE	**6**
7	Project /Seminar/Training	PST	**7**
8	Social Outreach, Discipline & Extra Curriculum Activities	SODECA	**8**
9	Mandatory Courses	MC	**9**

6 Semester wise credit system:

Sr. No.	Semester	Credits		Total Credit
		Courses	SODECA	
1	I	20	0.5	20.5
2	II	20	0.5	20.5
3	III	24	0.5	24.5
4	IV	23	0.5	23.5
5	V	22.5	0.5	23
6	VI	23	0.5	23.5
7	VII	14.5	0.5	15
8	VIII	15	0.5	15.5
	Total	162	04	166

7 Mandatory Trainings:

S. No.	Duration of Training	Mode of Training	After	Exam Semester	Credit
1	15 Days	In-house/ Industry	I Year (II Semester)	III	**1***
2	45 Days	In-house/ Industry	II Year (IV Semester)	V	**2.5**
3	45 Days	Industry only	III Year (VI Semester)	VII	**2.5**
	Total				**6**

Dates of Tainting shall be notified in University's academic calendar.
*The Lateral Entry (LEEP) students may complete their training during III semester.

8 Distribution of Project/Seminar/Training (PST):

	Credits			Total Credit
PST	Project	Seminar	Training	
	7	**2**	**6**	**15**

*Teaching load of 1/2/3 Hrs may be considered for Training/Seminar/Project in the respective semesters.

9 Examination:
1 Credit – 50 Marks
166 Credit – 8300 Marks

There will be an internal assessment for all theory subjects:
Distribution of Marks:

S. No	Credit of Theory Paper	End Term Exam (Hours)	Internal Assessment (20%)	End Term Exam (80%)	Total Maximum Marks
1	**1**	**2 hours**	**10**	**40**	**50**
2	**2**		**20**	**80**	**100**
3	**3**	**3 hours**	**30**	**120**	**150**
4	**4**		**40**	**160**	**200**

Practical	Internal	External
	60%	**40%**

For 1 & 2 Credit courses internal assessment will be done through two mid term tests. For 3 & 4 credit courses the internal assessment component shall be further divided as under :

Marks	Internal Assessment		
	I Mid Term	II Mid Term	Assignments/ Presentations
	40%	40%	20%
30	12	12	6
40	16	16	8

10 Pass Rules for B.Tech. (4 Yr. Program)

The result of a candidate will be worked out at the end of each Semester Examination. Relative marks of a student shall be converted on 100 point scale by (marks obtained by students/ highest marks obtained in the paper) x 100. The rounding off shall be done only once and on the higher side. The grades shall be given to all the students as under:

S. No.	Relative Marks (x)	Grade	Grade Points
1	$x \geq 90$	**A+**	**10**
2	$85 \leq x < 90$	**A**	**9**
3	$80 \leq x < 85$	**B+**	**8**
4	$75 \leq x < 80$	**B**	**7.5**
5	$70 \leq x < 75$	**C+**	**7**
6	$65 \leq x < 70$	**C**	**6.5**
7	$60 \leq x < 65$	**D+**	**6**
8	$55 \leq x < 60$	**D**	**5.5**
9	$50 \leq x < 55$	**E+**	**5**
10	$45 \leq x < 50$	**E**	**4**
11	$x < 45$	**F**	**0**

* A+ Grade shall be awarded only if the marks obtained by the students in that subject is ≥ 75%

For a Pass, candidate must obtain at least grade E for each theory and practical.

11 Semester wise SGPA:

$$\text{SGPA} = \frac{\sum_{i=1}^{n} c_i \times p_i}{\sum_{i=1}^{n} c_i}$$

where,
c_i = Number of credits of the i^{th} course of a semester for which SGPA is to be calculated.
p_i = Grade points obtained in i^{th} course
$i = 1, 2, \ldots, n$ represent the number of course in which a student is registered in the concerned semester.

12 Overall CGPA:

$$\text{CGPA} = \frac{\sum_{i=1}^{m} c_i \times p_i}{\sum_{i=1}^{m} c_i}$$

where,
c_i = Number of credits of the i^{th} course of a semester.
p_i = Grade points obtained in i^{th} course. A grade, lower than 'E' (i.e. grade point < 4) in a course shall not be taken into account.
$i = 1, 2, \ldots, m$ represent the number of courses in which a student was registered and obtained a grade not lower than 'E' up to that semester for which CGPA is to be calculated.

13 End Term Exam Theory Paper Pattern:

S. No.	Exam Hours	Max. Marks	Candidate has to attempt/ Total number of questions		
			PART A	PART B	PART C
1	2 Hours	**40**	**5/5**	**4/6**	**2/3**
2		**80**			
3	3 Hours	**120**	**10/10**	**5/7**	**4/5**
4		**160**			

S. No.	Exam Time		Max. Marks	
			40	**80**
1	2 Hours	Part A	5x2=10	5x2=10
		Part B	4x4=16	4x10=40
		Part C	2x7=14	2x15=30
			120	**160**
2	3 Hours	Part A	10x2=20	10x3=30
		Part B	5x8=40	5x10=50
		Part C	4x15=60	4x20=80

PART A: Short answer questions (up to 25 words).
PART B: Analytical/Problem Solving questions.
PART C: Descriptive/ Analytical/Problem solving/Design questions.

14 Equivalent credits for existing 1st year (2017-18):

I Semester

S No	Course Title	L	T	P	Marks			Credits
					IA	E.	T	
	Theory Papers							
1	Engineering Mathematics-I	3	1	0	20	80	100	**3**
2	Communication Skills / Human Values	3	0	0	20	80	100	**3**
3	Engineering Physics/ Engineering Chemistry	3	1	0	20	80	100	**3**
4	Computer Programming-I	3	0	0	20	80	100	**3**
5	Environmental Engineering and Disaster Management	3	0	0	20	80	100	**2.5**
	Total	15	2	0	100	400	500	**14.5**
	Practical							
6	Communication Skills Lab./ Human Values: Activities	0	0	2	45	30	75	**1**
7	Engineering Physics Lab/ Engineering Chemistry Lab	0	0	2	45	30	75	**1**
8	Computer Programming-I Lab.	0	0	2	60	40	100	**1**
9	Computer Aided Engineering Graphics	0	0	3	60	40	100	**1.5**
10	Mechanical Workshop Practice	0	0	2	60	40	100	**1**
11	Discipline & Extra Curricular Activity	0	0	0	50	0	50	**0.5**
	Total	0	0	11	320	180	500	**6**
	Grand Total	15	2	11	420	580	1000	**20.5**

II Semester

S No	Course Title	L	T	P	Marks			Credits
					IA	E	T	
	Theory Papers							
1	Engineering Mathematics-II	3	1	0	20	80	100	**3**
2	Human Values/ Communication Skills	3	0	0	20	80	100	**3**
3	Engineering Chemistry/ Engineering Physics	3	1	0	20	80	100	**3**
4	Computer Programming-II	3	0	0	20	80	100	**3**
	Elective (any two)*							
5	Basic Electrical and Electronics Engineering	3	0	0	20	80	100	**2**
6	Basic Civil Engineering							
7	Basic Mechanical Engineering	3	0	0	20	80	100	**2**
8	Engineering Mechanics							
	Total	18	2	0	120	480	600	**16**
	Practical							
9	Human Values: Activities Communication Skills Lab.	0	0	2	45	30	75	**1**
10	Engineering Chemistry Lab/ Engineering Physics Lab	0	0	2	45	30	75	**1**
11	Computer Programming-II Lab	0	0	2	60	40	100	**1**
12	Computer Aided Machine Drawing	0	0	3	60	40	100	**1**
13	Discipline & Extra Curricular Activity	0	0	0	50	0	50	**0.5**
	Total	0	0	9	260	140	400	**4.5**
	Grand Total	18	2	9	380	620	1000	**20.5**