

DEPARTMENT OF CHEMISTRY
BANASTHALI UNIVERSITY

**MINUTES OF MEETING OF BOARD OF STUDIES IN CHEMISTRY HELD ON 28TH OCT.
2007 AT 10:30 AM IN ROOM NO. 36 IN VIGYAN MANDIR, BANASTHALI UNIVERSITY.**

PRESENT

1. Prof. A. K. Pathak	External Member
2. Prof. D. N. Mishra	External Member
3. Dr. Ances Siddiqui	External Member
4. Prof. S. P. Tiwari	Internal Member
5. Prof. Sudha Shastri	Internal Member
6. Dr. Suman Kumari Gupta	Internal Member
7. Shri Sarvesh Kumar Paliwal	Internal Member
8. Dr. Jaya Dwivedi	Internal Member
9. Dr. Bhawani Singh	Internal Member
10. Shri Rakesh Yadav	Internal Member
11. Mrs. Manu Sharma	Internal Member
12. Dr. Dinesh Kumar	Internal Member
13. Ms. Rajani Chauhan	Internal Member
14. Dr. Ashu Chaudhary	Internal Member
15. Dr. Palak Verma	Internal Member
16. Dr. Charu Arora	Special Invitee
17. Dr. Mahesh Kumar Paliwal	Special Invitee
18. Ms. Meenal Batra	Special Invitee
19. Ms. Yashumati Ratan	Special Invitee
20. Mrs. Divya Yadav	Special Invitee
21. Shri Rajendra Kumar	Special Invitee
22. Prof D. Kishore	Convener

Note: Prof. Lallan Mishra, Prof. A. Khare, Prof. Rajiv Jain and Prof. Suresh C. Ameta, the external members and Dr. Reenu Sirohi, the internal member could not attend the meeting.

Before proceeding to discuss the Agenda of the meeting the Convener on behalf of Department of Chemistry, Banasthali University accorded a cordial welcome to all the external and internal members of the BOS.

1. BOS took up the confirmation of the minutes of its last meeting held on 6th October 2006 and as no comments were received from the members, the Board resolved that the minutes of its last meeting be confirmed.
2. BOS updated the existing panel of examiners in each paper of Undergraduate examinations of Chemistry, Postgraduate examinations of Chemistry and Pharmaceutical Chemistry in accordance to the Byelaws 15.03.2002 of the University.
3. BOS appreciated the resolution (resolution no. 20 of Academic Council) regarding the proper presentation of the syllabi recommended by the BOS. Keeping that in mind, Board reviewed the Courses of Study, Curricula and Scheme of Examinations of the following undergraduate and postgraduate examinations: -

- (A) **Bachelor of Science (B. Sc.) Examination:**
- (i) First Semester Examination, December 2008
 - (ii) Second Semester Examination, May 2009
 - (iii) Third Semester Examination, December 2009
 - (iv) Fourth Semester Examination, May 2010
 - (v) Fifth Semester Examination, December 2010
 - (vi) Sixth Semester Examination, May 2011
- (B) **Bachelor of Technology (B. Tech.) Chemical Engineering Examination:**
- (i) First Semester Examination, December 2008
 - (ii) Second Semester Examination, May 2009
 - (iii) Third Semester Examination, December 2009
 - (iv) Fourth Semester Examination, May 2010
 - (v) Fifth Semester Examination, December 2010
 - (vi) Sixth Semester Examination, May 2011
 - (vii) Seventh Semester Examination, December 2011
 - (viii) Eighth Semester Examination, May 2012
- (C) **Bachelor of Pharmacy (B. Pharm.) Examination:**
- (i) First Semester Examination, December 2008
 - (ii) Second Semester Examination, May 2009
 - (iii) Third Semester Examination, December 2009
 - (iv) Fourth Semester Examination, May 2010
 - (v) Fifth Semester Examination, December 2010
 - (vi) Sixth Semester Examination, May 2011
 - (vii) Seventh Semester Examination, December 2011
 - (viii) Eighth Semester Examination, May 2012
- (D) **Master of Science (M. Sc.) Chemistry Examination:**
- (i) First Semester Examination, December 2008
 - (ii) Second Semester Examination, May 2009
 - (iii) Third Semester Examination, December 2009
 - (iv) Fourth Semester Examination, May 2010
- (E) **Master of Science (M. Sc.) Pharmaceutical Chemistry Examination:**
- (i) First Semester Examination, December 2008
 - (ii) Second Semester Examination, May 2009
 - (iii) Third Semester Examination, December 2009
 - (iv) Fourth Semester Examination, May 2010

Details of the Scheme of Examinations and the syllabi of different courses are given in the following annexures (**Annexures-I to V**): -

- (A) **Bachelor of Science (B. Sc.) Examination:**
- Annexure-I A:** B. Sc. (Existing **Annual Scheme** of Examinations and Modified **Scheme of Semester** Examinations: One theory and one practical paper in Semester Exam.)
 - Annexure-I B:** B. Sc. (Existing Syllabi for **Annual Scheme** and Modified Syllabi of **Semester Examinations**).
- (B) **Bachelor of Technology (B. Tech.) Chemical Engineering Examination:**
- Annexure-II A:** B. Tech.-Chemical Engineering (**Semester Scheme** of Examinations)

Annexure-II B: B. Tech.-Chemical Engineering (Syllabi of Semester Examinations)

- (C) **Bachelor of Pharmacy (B. Pharm.) Examination:**
Annexure-III A: B. Pharm. (Scheme of Semester Examinations)
Annexure-III B: B. Pharm. (Syllabi of Semester Examinations)
- (D) **Master of Science (M. Sc.) Chemistry Examination:**
Annexure-IV A: M. Sc. Chemistry (Existing and Modified Scheme of Semester Examinations)
Annexure-IV B: M. Sc. Chemistry (Existing and Modified Syllabi of Semester Examinations)
- (E) **Master of Science (M. Sc.) Pharmaceutical Chemistry Examination:**
Annexure-V A: M. Sc. Pharmaceutical Chemistry (Existing and Modified Scheme of Semester Examinations)
Annexure-V B: M. Sc. Pharmaceutical Chemistry (Existing and Modified Syllabi of Semester Examinations)

4. BOS of Chemistry appreciated the Course of Study, Curricula and Scheme of Examinations of B. Tech. Chemical Engineering course to be introduced with effect from the next academic session 2008-2009 and recommended that the proposed course of study, curricula and scheme of examination be implemented with only a minor change in the total credit points of the course (total credit points for disciplinary papers have been changed from 210 to 200 and for foundation course papers the credit points have been kept at 20 to make both consistent to other B. Tech. programmes).
5. The Course of Study, Curricula and Scheme of Examinations of B. Tech. Chemical Engineering course were referred to the external experts (Dr. S. P. Chourasia and Dr. R. K. Vyas, Department of Chemical Engineering, Malviya National Institute of Technology (MNIT) Jaipur) to obtain their comments on the syllabi of B. Tech. Chemical Engineering course. Following comments have been received from them:
- That a separate **Board of Studies** for the B. Tech. Chemical Engineering course be constituted.
 - That B. Tech. Chemical Engineering and B. Tech. Biotechnology programmes should have **one common external member** in the BOS.
 - That B. Tech. Chemical Engineering course should have **one external member in BOS from chemical industry.**
 - That **Monitoring and evaluation** of the project work of students be done **twice** during the operation of project of B. Tech. Chemical Engineering course.

Some names of the external experts for BOS Chemical Engineering course and for faculty recruitment have been suggested by them (given in **Annexure-VI**).

6. BOS of Chemistry appreciated the proposal to start the B. Pharm. Course with effect from the next academic session 2008-09 and recommended that the proposed courses of study, curricula and scheme of examinations be implemented without any change.
7. BOS considered the reports of the examiners of various examinations of 2006 and observed that in most of the cases examiners have been satisfied with the performances of the students. In a few cases in the papers of Physical Chemistry where the examiners have shown their dissatisfaction on the performance of the students, the teachers have been apprised of to their comments and have been asked to take remedial steps for the same.

Banasthali University
B. Tech. - Chemical Engineering

Yr	Course No.	First Semester	L	T	P	Course No.	Second Semester	L	T	P
	CE 1.1	Inorganic and Physical Chemistry *	3	1	4	CE 2.1	Organic Chemistry * #	3	1	4
	CE 1.2	Physics - I *	3	1	4	CE 2.2	Physics - II *	3	1	4
	CE 1.3	Calculus ♦ / Life Science *	3	1	-	CE 2.3	Linear Algebra ♦ / Life Science *	3	1	-
	CE 1.4	Computer Fundamentals and Programming *	3	1	4	CE 2.4	Analytical Techniques *	3	1	-
	CE 1.5	Fundamentals of Biotechnology	3	1	-	CE 2.5	Introduction to Chemical Engineering *	3	1	-
						CE 2.6	Engg Graphics & Drawing *	-	-	4
	F 1.1	Language: (Hindi/English)	2	-	-	F 2.1	Language: (English/Hindi)	2	-	-
	F 1.2	Environmental Studies / Indian Heritage	2	-	-	F 2.2	Indian Heritage / Environmental Studies	2	-	-
		Total	19	5	12		Total	19	5	12
Yr	Course No.	Third Semester	L	T	P	Course No.	Fourth Semester	L	T	P
II	CE 3.1	Chemical Thermodynamics - I	3	1	-	CE 4.1	Chemical Thermodynamics - II	3	1	-
	CE 3.2	Separation Processes	3	1	4*	CE 4.2	Heat Transfer	3	1	4
	CE 3.3	Probability and Statistics ♦	3	1	-	CE 4.3	Transport Phenomena	3	1	-
	CE 3.4	Principles of Chemical Processes *	3	1	4	CE 4.4	Fluid & Fluid-Solid Operations	3	1	4
	CE 3.5	Communication Skills * ♦	2	-	-	CE 4.5	Material Science & Technology	3	1	-
	CE 3.6	Workshop	-	-	4	CE 4.6	Engineering Chemistry	-	-	4
	F 3.1	Selected Writings of Great Authors (SWG A)-I	1	-	-	F 4.1	Selected Writings of Great Authors (SWG A)-II	1	-	-
	F 3.2	Women in Indian Society (WIS)	3			F 4.2	Parenthood and Family Relationship / Elements of Economics	3		
		Total	18	4	12		Total	19	5	12
Yr	Course No.	Fifth Semester	L	T	P	Course No.	Sixth Semester	L	T	P
III	CE 5.1	Mass Transfer - I	3	1	-	CE 6.1	Mass Transfer - II	3	1	6
	CE 5.2	Reaction Engineering-I	3	1	-	CE 6.2	Reaction Engineering-II	3	1	6
	CE 5.3	Biochemical Engineering	3	1	6	CE 6.3	Chemical Process Design	3	1	-
	CE 5.4	Electronics	3	1	4	CE 6.4	Elective - I *	3	1	-
	CE 5.5	Unit Operations	-	-	6	CE 6.5	Process Equipment Design	-	-	4
	F 5.1	Vocational Course-I: Analytical Laboratory Practices (ALP)-I	-	-	4	F 6.1	Vocational Course-II: Analytical Laboratory Practices (ALP)-II	-	-	4
		Total	12	4	20		Total	12	4	20
Yr	Course No.	Seventh Semester	L	T	P	Course No.	Eighth Semester			
IV	CE 7.1	Chemical Process - I	3	1	4	CE 8.1	B. Tech Project			22
	CE 7.2	Chemical Process - II	3	1	-	CE 8.2	Reading Elective			2
	CE 7.3	Elective - II ●	3	1	-					
	CE 7.4	Fundamentals of Management and Economics	3	1	-					
	CE 7.5	Industrial Pollution Control	3	1	-					
	CE 7.7	Industrial Pollution Control	-	-	4					
	CE 7.8	Bio-technology			4					
		Total	15	5	12		Total			24

Elective - I *

- * E - I (a) Polymer Technology
- E - I (b) Corrosion Engineering
- E - I (c) Food Processing and Engineering

*Courses common with BI (B. Tech.-Biotechnology)

♦ Courses common with CS/EC/IT (B. Tech.-Computer Science/Electronics and Communication/ Information Technology)

Courses common with BPH (Bachelor of Pharmacy)

Elective - II ●

- E - II (a) Cryogenic Engineering
- E - II (b) Nanotechnology
- E - II (c) Petroleum Recovery Technology

Banasthali Vidyapith
Minutes of the Board of Studies in B.Tech.
(CSE/IT/ECE/EIE/EEE/MCTR/BT/CHE) 03.01.2019 at 11.00 A.M in the CMS
Conference Hall, Banasthali Vidyapith

1. The Board took up the minutes of its last meeting held on **May 2, 2013** and resolved that the minutes to be confirmed.
2. The board examined and reviewed the existing panel of examiners for B.Tech. (CSE/IT/ECE/EIE/EEE/MCTR/BT/CHE) examination keeping in view the byelaw 15.03.2002 of the Vidyapith and panel of examiners will be submitted to the secrecy section.
3. The board reviewed the courses of study, curricula and scheme of examination for the following examination.

B.Tech. Examination (CSE/IT/ECE/EIE/EEE/MCTR/BT/CHE)

- First Semester Examination, December, 2019
- Second Semester Examination, April/May, 2020
- Third Semester Examination, December, 2020
- Fourth Semester Examination, April/May, 2021
- Fifth Semester Examination, December, 2021
- Sixth Semester Examination, April/May, 2022
- Seventh Semester Examination, December, 2022
- Eighth Semester Examination, April/May, 2023

3. I (A) B.Tech. CSE Examination Scheme (w. e. f. 2019-20)

S.No.	B.Tech. CSE Examination Scheme	Remarks
i.	First Semester Examination, December, 2019	Revised
ii.	Second Semester Examination, April/May, 2020	Revised
iii.	Third Semester Examination, December, 2020	Revised
iv.	Fourth Semester Examination, April/May, 2021	Revised
v.	Fifth Semester Examination, December, 2021	Revised
vi.	Sixth Semester Examination, April/May, 2022	Revised
vii.	Seventh Semester Examination, December, 2022	Revised
viii.	Eighth Semester Examination, April/May 2023	Revised

- (a) The board has reviewed the existing B.Tech. curriculum in view of foundation, basic sciences, core engineering and electives courses and proposed revisions in all B. Tech. programmes by making significant changes to enhance the value based education and meet international standards.

- (b) The board reviewed examination scheme of B.Tech. I Year 2017-18 (I and II Semesters) and revised the scheme in 2019-20 for all branches, i.e. B.Tech. (CSE/IT/ECE/EIE/EEE/MCTR/BT/CHE) I Year.
- (c) The board has reviewed and revised the *number of credits* of the Mathematics courses to 4 for all B.Tech. programme.
- (d) Board proposed new foundation courses - *General Hindi* and *General English* for B.Tech. I Year 2019-20 and agreed to incorporate one Core Foundation course one Elective Foundation course from the session 2019-20.
- (e) The board also reviewed syllabi of the courses of B.Tech. I Year (I and II Semesters) and suggested minor changes in the syllabi of *Biology* and *Measurement Techniques Lab* courses. It has been suggested by the board to incorporate learning outcomes e-resources and to use prescribed format for references and the same has been followed.
- (f) The board reviewed and revised the examination scheme of B.Tech. CSE II Year 2018-19 (III and IV Semesters). Courses *Introduction to Discrete Mathematics* and *Software Engineering* have been included in B.Tech. III and IV Semesters respectively with the recommendation of the Board and to be followed from 2020-21.
- (g) The board reviewed the existing examination scheme of B.Tech. CSE III Year (V and VI Semesters) and proposed the changes in the existing scheme. Two vocational courses have been proposed in B.Tech. CSE III Year by the board including one core and one elective foundation courses. Board recommended to adopt new scheme from 2021-22.
- (h) The board also reviewed syllabus of the courses of B.Tech. CSE III Year (V and VI Semesters) and proposed some minor changes in the syllabi of *Data Communication and Networks* and *Operating Systems* courses. Board proposed new courses in B.Tech. CSE VI Semester: *Artificial Intelligence and Machine Learning* and *Artificial Intelligence and Machine Learning Lab*.
- (i) The board reviewed the existing examination scheme of B.Tech. IV Year (VII and VIII Semesters) and proposed new scheme with discipline and open electives to be adopted for B. Tech. IV Year 2022-23.
- (j) Board proposed to rename the title of the course *Pattern Recognition and Image Processing* as *Digital Image Processing*.
- (k) Board proposed some new reading electives for B.Tech. CSE VII Semester.
- Agile Software Development
 - Organizational Behavior
 - Software as a Service
 - Blockchain
- (l) Board proposed to start course, *Data Analytics* with its lab in B.Tech. CSE VIII Semester and suggested following new electives for the same.
- Computer Vision
 - Pattern Recognition
 - Internet of Things
 - Robotics and Automation
 - Modeling and Simulation

Proposed examination scheme of B.Tech. CSE programme with learning outcomes and new syllabi are enclosed in **Annexure-I(A)**.

3. I (B) B.Tech. CSE Examination Scheme (w. e. f. 2017-18 & 2018-19)

S.No.	B.Tech. CSE Examination Scheme	Remarks
i.	Third Semester Examination, December, 2018/2019	Revised
ii.	Fourth Semester Examination, April/May, 2019/2020	Revised
iii.	Fifth Semester Examination, December, 2019/ 2020	Revised
iv.	Sixth Semester Examination, April/May, 2020/2021	Revised
v.	Seventh Semester Examination, December, 2020/2021	Revised
vi.	Eighth Semester Examination, April/May 2021/2022	Revised

- (a) The board reviewed examination scheme of B.Tech. II Year (III and IV Semesters) 2017-18 and 2018-19 (I and II Semesters) and agreed to follow the same scheme in 2019-20.
- (b) The board also reviewed syllabus of the courses of B.Tech. II CSE Year (III and IV Semesters) and proposed revision in the syllabi of *Entrepreneurship* and *Technical Report Writing* courses for existing scheme i.e. 2019-20.
- (c) The board reviewed the existing examination scheme of B.Tech. CSE III Year (V and VI Semesters) and proposed the changes in the existing scheme. Board recommended to adopt new scheme for sessions 2019-20 and 2020-21 for B.Tech. programmes effective from sessions 2017-18 and 2018-19.
- (d) The board also reviewed syllabus of the courses of B.Tech. CSE III Year (V and VI Semesters) and agreed to include revised courses *Data Communication and Networks*, *Operating Systems*, *Artificial Intelligence and Machine Learning* and *Artificial Intelligence and Machine Learning Lab* in B.Tech. CSE III Year for sessions 2019-20 and 2020-21.
- (e) The board reviewed the existing examination scheme of B.Tech. IV Year (VII and VIII Semesters) and proposed new scheme to be adopted for B. Tech. IV Year 2020-21 and 2021-22.
- (f) Board agreed to include *Digital Image Processing* in B. Tech. IV year for sessions 2020-21 and 2021-22.
- (g) Board also agreed to include following reading electives for B.Tech. CSE VII Semester as proposed in B. Tech. new scheme.
- Agile Software Development
 - Organizational Behavior
 - Software as a Service
 - Blockchain
- (h) Board included *Data Analytics* and *Data Analytics Lab* B.Tech. CSE VIII Semester and agreed to follow as proposed in B. Tech. new scheme.
- Computer Vision
 - Pattern Recognition
 - Internet of Things
 - Robotics and Automation
 - Modeling and Simulation

Proposed examination scheme of B.Tech. CSE programme with learning outcomes and new syllabi are enclosed in **Annexure-I(B)**.

3. I (C) B.Tech. CSE Examination Scheme (w. e. f. 2016-17)

S.No.	B.Tech. CSE Examination Scheme	Remarks
i.	Seventh Semester Examination, December, 2019	Revised
ii.	Eighth Semester Examination, April/May 2020	Revised

- (a) The board reviewed examination scheme of B.Tech. CSE IV Year (VII and VIII Semesters) 2018-19 and agreed to follow the same scheme in 2019-20. However, board has recommended to include learning outcomes, suggested books and e-resources in prescribed format as discussed in the meeting.

Proposed examination scheme of B.Tech. CSE programme with learning outcomes and new syllabi are enclosed in **Annexure-I(C)**.

3. II (A) B.Tech. IT Examination Scheme (w. e. f. 2019-20)

S.No.	B.Tech. IT Examination Scheme	Remarks
i.	First Semester Examination, December, 2019	Revised
ii.	Second Semester Examination, April/May, 2020	Revised
iii.	Third Semester Examination, December, 2020	Revised
iv.	Fourth Semester Examination, April/May, 2021	Revised
v.	Fifth Semester Examination, December, 2021	Revised
vi.	Sixth Semester Examination, April/May, 2022	Revised
vii.	Seventh Semester Examination, December, 2022	Revised
viii.	Eighth Semester Examination, April/May 2023	Revised

- (a) The board reviewed and revised the examination scheme of B.Tech. IT II Year 2018-19 (III and IV Semesters) and agreed to follow the revised scheme in 2020-21 with additional one core and one elective foundation course.
- (b) The board reviewed and recommended to include *Introduction to Discrete Mathematics* and *Software Engineering* have been included in B.Tech. III and IV Semesters respectively with the recommendation of the Board and to be followed from 2020-21.
- (c) The board reviewed the existing examination scheme of B.Tech. IT III Year (V and VI Semesters) and proposed the changes in the existing scheme. Board suggested adopting new scheme from session 2021-22. Two vocational courses have been proposed in B.Tech. IT III Year by the board including one core and one elective foundation courses. Board recommended to adopt new scheme from 2021-22.
- (d) The board recommended adopting revised courses *Data Communication and Networks*, *Internet and Web Technology*, *Operating Systems*, *Artificial Intelligence and Machine Learning* and *Artificial Intelligence and Machine Learning Lab* in B. Tech. IT III Year from 2021-22.
- (e) The board reviewed the existing examination scheme of B.Tech. IV Year (VII and VIII Semesters) and proposed new scheme with discipline and open electives to be adopted for B. Tech. IV Year 2022-23.
- (f) Board suggested to include revised course *Digital Image Processing* and following new courses as electives for B.Tech. IT VII Semester.

- Computer Vision
- Pattern Recognition
- Data Analytics
- Internet of Things
- Robotics and Automation
- Modeling and Simulation

(g) Board also agreed to include new reading electives for B.Tech. IT VIII Semester as proposed for B. Tech. CSE programme.

- Agile Software Development
- Organizational Behavior
- Software as a Service
- Blockchain

Proposed examination scheme of B.Tech. IT programme with learning outcomes and new syllabi are enclosed in **Annexure-II(A)**.

3. II (B) B.Tech. IT Examination Scheme (w. e. f. 2017-18 & 2018-19)

S.No.	B.Tech. IT Examination Scheme	Remarks
i.	Third Semester Examination, December, 2018/2019	Revised
ii.	Fourth Semester Examination, April/May, 2019/2020	Revised
iii.	Fifth Semester Examination, December, 2019/ 2020	Revised
iv.	Sixth Semester Examination, April/May, 2020/2021	Revised
v.	Seventh Semester Examination, December, 2020/2021	Revised
vi.	Eighth Semester Examination, April/May 2021/2022	Revised

(a) The board reviewed examination scheme of B.Tech. IT II Year (III and IV Semesters) 2018-19 and agreed to follow the same scheme in 2019-20.

(b) The board agreed to include revised *Entrepreneurship* and *Technical Report Writing* courses for proposed scheme 2019-20.

(c) The board reviewed the existing examination scheme of B.Tech. IT III Year (V and VI Semesters) and proposed the changes in the existing scheme. Board recommended to adopt new scheme for sessions 2019-20 and 2020-21 for B.Tech. programmes effective from sessions 2017-18 and 2018-19.

(d) The board included courses *Data Communication and Networks*, *Internet and Web Technology*, *Operating Systems*, *Artificial Intelligence and Machine Learning* and *Artificial Intelligence and Machine Learning Lab* in B. Tech. IT III Year for sessions 2019-20 and 2020-21.

(h) The board reviewed the existing examination scheme of B.Tech. IT IV Year (VII and VIII Semesters) and proposed new scheme with discipline and open electives to be adopted for B. Tech. IV Year 2020-21/2021-22.

(i) Board included revised course *Digital Image Processing* and following new courses as electives for B.Tech. IT VII Semester.

- Computer Vision
- Pattern Recognition

- Data Analytics
- Internet of Things
- Robotics and Automation
- Modeling and Simulation

(j) Board also agreed to include new reading electives for B.Tech. IT VIII Semester.

- Agile Software Development
- Organizational Behavior
- Software as a Service
- Blockchain

Proposed examination scheme of B.Tech. IT programme with learning outcomes and new syllabi are enclosed in **Annexure-II(B)**.

3. II (C) B.Tech. IT Examination Scheme (w. e. f. 2016-17)

S.No.	B.Tech. IT Examination Scheme	Remarks
i.	Seventh Semester Examination, December, 2019	Revised
ii.	Eighth Semester Examination, April/May 2020	Revised

(a) The board reviewed examination scheme of B.Tech. IT IV Year (VII and VIII Semesters) 2018-19 and agreed to follow the same scheme in 2019-20. However, board has recommended to include learning outcomes, suggested books and e-resources in prescribed format as discussed in the meeting.

Proposed examination scheme of B.Tech. IT programme with learning outcomes and new syllabi are enclosed in **Annexure-II(C)**.

3.III. (A) B.Tech. ECE Examination Scheme (w. e. f. 2019-20)

S.No.	B.Tech. ECE Examination Scheme	Remarks
i.	First Semester Examination, December, 2019	Revised
ii.	Second Semester Examination, April/May, 2020	Revised
iii.	Third Semester Examination, December, 2020	Revised
iv.	Fourth Semester Examination, April/May, 2021	Revised
v.	Fifth Semester Examination, December, 2021	Revised
vi.	Sixth Semester Examination, April/May, 2022	Revised
vii.	Seventh Semester Examination, December, 2022	Revised
viii.	Eighth Semester Examination, April/May, 2023	Revised

(a) The board reviewed and revised the examination scheme of B.Tech. ECE II Year 2018-19 (III and IV Semesters) and agreed to follow the revised scheme in 2020-21 with additional one core and one elective foundation course.

(b) The board reviewed the existing examination scheme of B.Tech. ECE III Year (V and VI Semesters) and proposed the changes in the existing scheme and syllabi of *Analog Communication, Analog Electronics, Microwave Engineering, Digital Communication, Control systems, Microwave Electronics* and *Analog Integrated Circuits* have been

renamed as *Microwave Engineering* and *Analog Electronics*, respectively. Board suggested adopting new scheme from session 2021-22. Two vocational courses have been proposed in B.Tech. ECE III Year by the board including one core and one elective foundation courses. Board recommended to adopt new scheme from 2021-22.

- (c) The board reviewed and revised the examination scheme of B.Tech. ECE IV Year 2018-19 (VII and VIII Semesters) and agreed to follow the revised scheme in 2022-23. Board agreed to include course *Antenna Analysis* in place of *Antenna and Radar* from session 2022-23.
- (d) Board has agreed to shift UIL project from VII semester to VIII semester and will be effective from session 2019-20.
- (e) Board suggested and agreed to include two new elective courses *Mechatronics* and *Robotics and Automation* from the session 2022-2023 in the curriculum keeping in view of interdisciplinary approach of curriculum structure.
- (f) Board proposed some new reading electives from the session 2022- 2023 in the curriculum as follows:
 - *Telecommunication Switching Systems and Networks*
 - *Multimedia Compression and Communication*
 - *Electronic Packaging*
 - *Human Values*
 - *Professional Ethics.*
- (g) Board proposed inclusion of few online courses as reading elective from the session 2022- 2023 in the curriculum as follows:
 - *Electric Vehicles*
 - *IoT Sensors and Devices*
 - *Electromagnetic Compatibility.*

Proposed examination scheme of B.Tech. ECE programme with learning outcomes and new syllabi are enclosed in **Annexure-III(A)**.

3.III. (B) B.Tech. ECE Examination Scheme (w. e. f. 2017-18 & 2018-19)

S.No.	B.Tech.ECE Examination Scheme	Remarks
i.	Third Semester Examination, December, 2018/2019	Revised
ii.	Fourth Semester Examination, April/May, 2019/2020	Revised
iii.	Fifth Semester Examination, December,2019/ 2020	Revised
iv.	Sixth Semester Examination, April/May, 2020/2021	Revised
v.	Seventh Semester Examination, December, 2020/2021	Revised
vi.	Eighth Semester Examination, April/May 2021/2022	Revised

- (a) The board reviewed and revised the examination scheme of B.Tech. ECE II Year 2018-19 (III and IV Semesters) and agreed to follow the revised scheme in 2019-20 with additional one core and one elective foundation course.
- (b) The board agreed to include revised Entrepreneurship and Technical Report Writing courses for proposed scheme 2019-20.

- (c) The board reviewed and revised the existing examination scheme of B.Tech. ECE III Year (V and VI Semesters) and agreed to include revised syllabi of *Analog Communication, Analog Electronics, Microwave Engineering, Digital Communication, Control systems* from session 2019-20 and 2020-21. Board also approved the changes in the names of the courses from *Microwave Engineering* and *Analog Electronic* to *Microwave Electronics* and *Analog Integrated Circuits*, respectively from sessions 2019-20 and 2020-21.
- (h) Board revised and reviewed the examination scheme of B.Tech. ECE IV Year (VII and VIII Semesters) and agreed to shift UIL project from VII to VIII Semester from sessions 2020-21 and 2021-22. Board agreed to include course *Antenna Analysis* in place of *Antenna and Radar* from session 2020-21 and 2021-22.
- (i) Board suggested and agreed to include two new elective courses *Mechatronics* and *Robotics and Automation* from the session 2020-2021 and 2021-22 in the curriculum keeping in view of interdisciplinary approach of curriculum structure.
- (j) Board proposed some new reading electives from the sessions 2020-2021 and 2021-22 in the curriculum as follows:
- *Telecommunication Switching Systems and Networks*
 - *Multimedia Compression and Communication*
 - *Electronic Packaging*
 - *Human Values*
 - *Professional Ethics.*
- (k) Board proposed inclusion of few online courses as reading elective from the sessions 2020-2021 and 2021-22 in the curriculum as follows:
- *Electric Vehicles*
 - *IoT Sensors and Devices*
 - *Electromagnetic Compatibility.*

Proposed examination scheme of B.Tech. ECE programme with learning outcomes and new syllabi are enclosed in **Annexure-III(B)**.

3.III. (C) B.Tech. ECE Examination Scheme (w. e. f. 2016-17)

S.No.	B.Tech. ECE Examination Scheme	Remarks
i.	Seventh Semester Examination, December, 2019	Revised
ii.	Eighth Semester Examination, April/May 2020	Revised

- (a) The board reviewed and revised examination scheme of B.Tech. ECE IV Year (VII and VIII Semesters) 2018-19 and agreed to follow the same scheme in 2019-20. UIL project has been shifted to VIII Semester for session 2019-20 with the approval of the Board. The board has recommended to include learning outcomes, suggested books and e-resources in prescribed format as discussed in the meeting.

Proposed examination scheme of B.Tech. ECE programme with learning outcomes and new syllabi are enclosed in **Annexure-III(C)**.

3. IV. (A) B.Tech. EIE Examination Scheme (w. e. f. 2019-20)

S.No.	B.Tech. EIE Examination Scheme	Remarks
i.	First Semester Examination, December, 2019	Revised
ii.	Second Semester Examination, April/May, 2020	Revised
iii.	Third Semester Examination, December, 2020	Revised
iv.	Fourth Semester Examination, April/May, 2021	Revised
v.	Fifth Semester Examination, December, 2021	Revised
vi.	Sixth Semester Examination, April/May, 2022	Revised
vii.	Seventh Semester Examination, December, 2022	Revised
viii.	Eighth Semester Examination, April/May 2023	Revised

- (a) The board reviewed and revised the examination scheme of B.Tech. EIE II Year 2018-19 (III and IV Semesters) and agreed to follow the revised scheme in 2020-21 with additional one core and one elective foundation course.
- (b) The board reviewed the existing examination scheme of B.Tech. EIE III Year (V and VI Semesters) and agreed to follow the revised scheme from 2021-22. Board proposed the changes in the existing syllabi of Power Electronics Lab and approves the revised experiment list of the same. Board proposed that the courses *Control System* (Theory and Lab), *Transducers* (Theory and Lab) should be replaced with *Linear Control System* (Theory and Lab), *Industrial Instrumentation* (Theory and Lab) respectively. The Board discussed the proposed syllabi and approved the same. Board agreed to introduce new course *Industrial Automation* (Theory and Lab) in VI Semester.
- (c) The board reviewed the existing examination scheme of B.Tech. EIE IV Year (VII and VIII Semesters) and agreed to follow the revised scheme from 2022-23. Board suggested and agreed to introduce courses *Process Control*, *Communication Engineering* and *Mechatronics Systems* in the VII Semester.
- (d) Board revised the elective courses and following courses have been proposed as electives for B.Tech. EIE VII Semester.
- Artificial Neural Network and Fuzzy Logic
 - Energy Efficiency and Conservation
 - Non Linear Control System
 - Digital Control System
 - Analytical Instrumentation
 - Fiber Optic and Laser Instrumentation
 - Biomedical Instrumentation
 - Virtual Instrumentation
 - Power Plant Engineering
- (e) Board suggested and agreed to include following new online reading elective courses for B.Tech. EIE VIII Semester.
- Fundamental of Semiconductor Devices
 - Principles of Signals and Systems
 - Electromagnetic Compatibility
 - Antennas
 - Introduction to Photonics

- Electromagnetic Waves in guided and wireless media
- Advanced IOT Applications
- Quality Control
- Industry 4.0
- Biomedical signal processing
- Interfacing with Arduino
- Robotica
- Mathematical methods and techniques in signal processing
- Electronics Modules for industrial applications using Opamp
- Industrial Automation and Control
- Control Engineering
- Analyzing data with Python
- SCADA
- PLC
- Internet of Things
- Industrial Robotics
- Chemical Process Instrumentation

Proposed examination scheme of B.Tech. EIE programme with learning outcomes and new syllabi are enclosed in **Annexure-IV(A)**.

3.IV. (B) B.Tech. EIE Examination Scheme (w. e. f. 2017-18 & 2018-19)

S.No.	B.Tech.EIE Examination Scheme	Remarks
i.	Third Semester Examination, December, 2018/2019	Revised
ii.	Fourth Semester Examination, April/May, 2019/2020	Revised
iii.	Fifth Semester Examination, December, 2019/ 2020	Revised
iv.	Sixth Semester Examination, April/May, 2020/2021	Revised
v.	Seventh Semester Examination, December, 2020/2021	Revised
vi.	Eighth Semester Examination, April/May 2021/2022	Revised

- (a) The board reviewed and revised the examination scheme of B.Tech. EIE II Year 2018-19 (III and IV Semesters) and agreed to follow the revised scheme in 2019-20.
- (b) The board reviewed the existing examination scheme of B.Tech. EIE III Year (V and VI Semesters) and agreed to follow the revised scheme for sessions 2019-20 and 2020-21. Board proposed the changes in the existing syllabi of *Power Electronics Lab* and approves the revised experiment list of the same. Board proposed that the courses *Control System* (Theory and Lab), *Transducers* (Theory and Lab) should be replaced with *Linear Control System* (Theory and Lab), *Industrial Instrumentation* (Theory and Lab) respectively. The Board discussed the proposed syllabi and approved the same. Board agreed to introduce new course *Industrial Automation* (Theory and Lab) in VI Semester.
- (c) The board reviewed the existing examination scheme of B.Tech. EIE IV Year (VII and VIII Semesters) and agreed to follow the revised scheme for sessions 2020-21 and 2021-22. Board suggested and agreed to introduce courses *Process Control*, *Communication Engineering* and *Mechatronics Systems* in the VII Semester.

(d) Board revised the elective courses and following courses have been proposed as electives for B.Tech. EIE VII Semester.

- Artificial Neural Network and Fuzzy Logic
- Energy Efficiency and Conservation
- Non Linear Control System
- Digital Control System
- Analytical Instrumentation
- Fiber Optic and Laser Instrumentation
- Biomedical Instrumentation
- Virtual Instrumentation
- Power Plant Engineering

(e) Board suggested and agreed to include following new online reading elective courses for B.Tech. EIE VIII Semester.

- Fundamental of Semiconductor Devices
- Principles of Signals and Systems
- Electromagnetic Compatibility
- Antennas
- Introduction to Photonics
- Electromagnetic Waves in guided and wireless media
- Advanced IOT Applications
- Quality Control
- Industry 4.0
- Biomedical signal processing
- Interfacing with Arduino
- Robotica
- Mathematical methods and techniques in signal processing
- Electronics Modules for industrial applications using Opamp
- Industrial Automation and Control
- Control Engineering
- Analyzing data with Python
- SCADA
- PLC
- Internet of Things
- Industrial Robotics
- Chemical Process Instrumentation

Proposed examination scheme of B.Tech. EIE programme with learning outcomes and new syllabi are enclosed in **Annexure-IV(B)**.

3.IV. (C) B.Tech. EIE Examination Scheme (w. e. f. 2016-17)

S.No.	B.Tech. EIE Examination Scheme	Remarks
i.	Seventh Semester Examination, December, 2019	Revised
ii.	Eighth Semester Examination, April/May 2020	Revised

- (a) The board reviewed and revised examination scheme of B.Tech. EIE IV Year (VII and VIII Semesters) 2018-19 and agreed to follow the same scheme in 2019-20. The board has recommended to include learning outcomes, suggested books and e-resources in prescribed format as discussed in the meeting.

Proposed examination scheme of B.Tech. EIE programme with learning outcomes and new syllabi are enclosed in **Annexure-IV(C)**.

3. V. (A) B.Tech. EEE Examination Scheme (w. e. f. 2019-20)

S.No.	B.Tech. EEE Examination Scheme	Remarks
i.	First Semester Examination, December, 2019	Revised
ii.	Second Semester Examination, April/May, 2020	Revised
iii.	Third Semester Examination, December, 2020	Revised
iv.	Fourth Semester Examination, April/May, 2021	Revised
v.	Fifth Semester Examination, December, 2021	Revised
vi.	Sixth Semester Examination, April/May, 2022	Revised
vii.	Seventh Semester Examination, December, 2022	Revised
viii.	Eighth Semester Examination, April/May 2023	Revised

- (a) The board reviewed and revised the examination scheme of B.Tech. EIE II Year 2018-19 (III and IV Semesters) and agreed to follow the revised scheme in 2020-21 with additional one core and one elective foundation course.
- (b) The board reviewed the existing examination scheme of B.Tech. EIE III Year (V and VI Semesters) and agreed to follow the revised scheme from 2021-22. Board proposed the changes in the existing syllabi of *Electrical Machines-I Lab* and *Power Electronics Lab* and approves the revised experiment list of the same. Board proposed that the courses *Control System* (Theory and Lab), should be replaced with *Linear Control System* (Theory and Lab). The Board discussed the proposed syllabi and approved the same.
- (c) The syllabi of *Elements of Power System* (Theory and Lab) has been modified and renamed as *Power System-I* (Theory and Lab) and syllabi of *Power System Analysis* (Theory and Lab) has been modified and renamed as *Power System-II* (Theory and Lab). The Board discussed the proposed syllabus and approved the same.
- (d) The board reviewed the existing examination scheme of B.Tech. EEE IV Year (VII and VIII Semesters) and agreed to follow the revised scheme from 2022-23. Board introduced the course *Switchgear and Protection* (Theory and Lab) in B.Tech. EEE VII Semester.
- (e) Board proposed to consider the following papers as elective courses in B.Tech. EEE VII Semester.
- Electric Drives and Control
 - Mechatronics
 - Robotics and Automation
 - Process Control
 - Industrial Automation

- Power System Operation and Control
 - Power System Restructuring and Deregulation
- (f) Board proposed following online courses with source as reading elective course for B.Tech. VIII Semester in addition to existing reading elective paper.

- Fundamental of Semiconductor Devices
- Principles of Signals and Systems
- Computer Aided Power System Analysis
- Power System Dynamics, Control and Monitoring
- Advance Power Electronics and Control
- Electromagnetic Compatibility
- Antennas
- Introduction to Photonics
- Electromagnetic Waves in guided and wireless media
- Biomedical signal processing
- Advances in UHV transmission and distribution
- Advanced IOT Applications
- Mathematical methods and techniques in signal processing
- Electronics Modules for industrial applications using Opamp
- Industrial Automation and Control
- Control Engineering
- Chemical Process Instrumentation
- Quality Control
- Interfacing with Arduino
- Robotica
- Analyzing data with Python
- Industry 4.0
- Internet of Things
- Industrial Robotics
- SCADA
- PLC

Proposed examination scheme of B.Tech. EEE programme with learning outcomes and new syllabi are enclosed in **Annexure-V(A)**.

3.V. (B) B.Tech. EEE Examination Scheme (w. e. f. 2017-18 & 2018-19)

S.No.	B.Tech.EEE Examination Scheme	Remarks
i.	Third Semester Examination, December, 2018/2019	Revised
ii.	Fourth Semester Examination, April/May, 2019/2020	Revised
iii.	Fifth Semester Examination, December, 2019/ 2020	Revised
iv.	Sixth Semester Examination, April/May, 2020/2021	Revised
v.	Seventh Semester Examination, December, 2020/2021	Revised
vi.	Eighth Semester Examination, April/May 2021/2022	Revised

- (a) The board reviewed and revised the examination scheme of B.Tech. EIE II Year 2018-19 (III and IV Semesters) and agreed to follow the revised scheme in 2019-20 with additional one core and one elective foundation course.
- (b) The board reviewed the existing examination scheme of B.Tech. EIE III Year (V and VI Semesters) and agreed to follow the revised scheme for sessions 2019-20 and 2020-21. Board proposed the changes in the existing syllabi of *Electrical Machines-I Lab* and *Power Electronics Lab* and approves the revised experiment list of the same. Board proposed that the courses *Control System* (Theory and Lab) should be replaced with *Linear Control System* (Theory and Lab).
- (c) The syllabi of *Elements of Power System* (Theory and Lab) has been modified and renamed as *Power System-I* (Theory and Lab) and syllabi of *Power System Analysis* (Theory and Lab) has been modified and renamed as *Power System-II* (Theory and Lab). The Board discussed the proposed syllabus and approved the same.
- (d) The board reviewed the existing examination scheme of B.Tech. EEE IV Year (VII and VIII Semesters) and agreed to follow the revised scheme from 2020-21 and 2021-22. Board introduced the course *Switchgear and Protection* (Theory and Lab) in B.Tech. EEE VII Semester.
- (e) Board proposed to consider the following papers as elective courses in B.Tech. EEE VII Semester.
- Electric Drives and Control
 - Mechatronics
 - Robotics and Automation
 - Process Control
 - Industrial Automation
 - Power System Operation and Control
 - Power System Restructuring and Deregulation
- (f) Board proposed following online courses with source as reading elective course for B.Tech. VIII Semester in addition to existing reading elective paper.
- Fundamental of Semiconductor Devices
 - Principles of Signals and Systems
 - Computer Aided Power System Analysis
 - Power System Dynamics, Control and Monitoring
 - Advance Power Electronics and Control
 - Electromagnetic Compatibility
 - Antennas
 - Introduction to Photonics
 - Electromagnetic Waves in guided and wireless media
 - Biomedical signal processing
 - Advances in UHV transmission and distribution
 - Advanced IOT Applications
 - Mathematical methods and techniques in signal processing
 - Electronics Modules for industrial applications using Opamp
 - Industrial Automation and Control

- Control Engineering
- Chemical Process Instrumentation
- Quality Control
- Interfacing with Arduino
- Robotica
- Analyzing data with Python
- Industry 4.0
- Internet of Things
- Industrial Robotics
- SCADA
- PLC

Proposed examination scheme of B.Tech. EEE programme with learning outcomes and new syllabi are enclosed in **Annexure-V(B)**.

3.V. (C) B.Tech. EEE Examination Scheme (w. e. f. 2016-17)

S.No.	B.Tech. EEE Examination Scheme	Remarks
i.	Seventh Semester Examination, December, 2019	Revised
ii.	Eighth Semester Examination, April/May 2020	Revised

- (a) The board reviewed and revised examination scheme of B.Tech. EIE IV Year (VII and VIII Semesters) 2018-19 and agreed to follow the same scheme in 2019-20. The board has recommended to include learning outcomes, suggested books and e-resources in prescribed format as discussed in the meeting.

Proposed examination scheme of B.Tech. EEE programme with learning outcomes and new syllabi are enclosed in **Annexure-V(C)**.

3. VI. (A) B.Tech. MCTR Examination Scheme (w. e. f. 2019-20)

S.No.	B.Tech. MCTR Examination Scheme	Remarks
i.	First Semester Examination, December, 2019	Revised
ii.	Second Semester Examination, April/May, 2020	Revised
iii.	Third Semester Examination, December, 2020	Revised
iv.	Fourth Semester Examination, April/May, 2021	Revised
v.	Fifth Semester Examination, December, 2021	Revised
vi.	Sixth Semester Examination, April/May, 2022	Revised
vii.	Seventh Semester Examination, December, 2022	Revised
viii.	Eighth Semester Examination, April/May 2023	Revised

- (a) The board reviewed and revised the examination scheme of B.Tech. MCTR II Year 2018-19 (III and IV Semesters) and agreed to follow the revised scheme from 2020-21 with additional one core and one elective foundation course. Board suggested and approved revision in the course *Electrical Machine-I Lab*.

- (b) Board reviewed and revised the examination scheme of B.Tech. MCTR III Year (V and VI Semesters) and agreed to follow the same from 2021-22. Board suggested and

proposed the course *Robotics and Control* in B.Tech. MCTRVI Semester and *Robotics and Automation* as elective courses for other B. Tech. programmes.

(c) The board reviewed the existing examination scheme of B.Tech. MCTR IV Year (VII and VIII Semesters) and agreed to follow the revised scheme from 2022-23.

(d) Board proposed following online courses with source as reading elective course for B.Tech. MCTR VII Semester.

- Fundamental of Semiconductor Devices
- Principles of Signals and Systems distribution
- Advanced IOT Applications
- Mathematical methods and techniques in signal processing
- Electronics Modules for industrial applications using Opamp
- Industrial Automation and Control
- Control Engineering
- Chemical Process Instrumentation
- Quality Control
- Interfacing with Arduino
- Robotica
- Analyzing data with Python
- Industry 4.0
- CNC Machining Turning
- Solar PV Technology
- Internet of Things
- Autocad
- Industrial Robotics
- SCADA
- PLC

(e) Board proposed and agreed to introduce the course *Mechatronics Systems* in B.Tech. MCTR VIII Semester and one elective course *Mechatronics* for other B. Tech. programmes. Board also proposed the course *Computer Integrated Manufacturing System* (Theory and Lab) and approved the same.

(f) Board proposed to consider the following papers as elective courses in B.Tech. MCTR VIII Semester.

- Biomedical Instrumentation
- Energy Efficiency and Conservation
- Power Plant Engineering
- Operation Research
- Industrial Engineering
- Manufacturing Science
- Production Technology

Proposed examination scheme of B.Tech. MCTR programme with learning outcomes and new syllabi are enclosed in **Annexure-VI(A)**.

3.VI. (B) B.Tech. MCTR Examination Scheme (w. e. f. 2017-18 & 2018-19)

S.No.	B.Tech. MCTR Examination Scheme	Remarks
i.	Third Semester Examination, December, 2018/2019	Revised
ii.	Fourth Semester Examination, April/May, 2019/2020	Revised
iii.	Fifth Semester Examination, December, 2019/ 2020	Revised
iv.	Sixth Semester Examination, April/May, 2020/2021	Revised
v.	Seventh Semester Examination, December, 2020/2021	Revised
vi.	Eighth Semester Examination, April/May 2021/2022	Revised

(a) The board reviewed and revised the examination scheme of B.Tech. MCTR II Year 2018-19 (III and IV Semesters) and agreed to follow the revised scheme for session 2019-20. Board suggested and approved revision in the course *Electrical Machine-I Lab*.

(b) Board reviewed and revised the examination scheme of B.Tech. MCTR III Year (V and VI Semesters) and agreed to follow the same for sessions 2019-20 and 2020-21. Board suggested and proposed the course *Robotics and Control* in B.Tech. MCTR VI Semester and *Robotics and Automation* as elective courses for other B. Tech. programmes.

(c) The board reviewed the existing examination scheme of B.Tech. MCTR IV Year (VII and VIII Semesters) and agreed to follow the revised scheme for sessions 2020-21 and 2021-22.

(d) Board proposed following online courses with source as reading elective course for B.Tech. MCTR VII Semester.

- Fundamental of Semiconductor Devices
- Principles of Signals and Systems distribution
- Advanced IOT Applications
- Mathematical methods and techniques in signal processing
- Electronics Modules for industrial applications using Opamp
- Industrial Automation and Control
- Control Engineering
- Chemical Process Instrumentation
- Quality Control
- Interfacing with Arduino
- Robotica
- Analyzing data with Python
- Industry 4.0
- CNC Machining Turning
- Solar PV Technology
- Internet of Things
- Autocad
- Industrial Robotics
- SCADA
- PLC

(e) Board proposed and agreed to introduce the course *Mechatronics Systems* in B.Tech. MCTR VIII Semester and one elective course *Mechatronics* for other B. Tech. programmes. Board also proposed the course *Computer Integrated Manufacturing System* (Theory and Lab) and approved the same.

(f) Board proposed to consider the following papers as elective courses in B.Tech. MCTR VIII Semester.

- Biomedical Instrumentation
- Energy Efficiency and Conservation
- Power Plant Engineering
- Operation Research
- Industrial Engineering
- Manufacturing Science
- Production Technology

Proposed examination scheme of B.Tech. MCTR programme with learning outcomes and new syllabi are enclosed in **Annexure-VI(B)**.

3.VI. (C) B.Tech. MCTR Examination Scheme (w. e. f. 2016-17)

S.No.	B.Tech. MCTR Examination Scheme	Remarks
i.	Seventh Semester Examination, December, 2019	Revised
ii.	Eighth Semester Examination, April/May 2020	Revised

(a) The board reviewed and revised examination scheme of B.Tech. MCTR IV Year (VII and VIII Semesters) 2018-19 and agreed to follow the same scheme in 2019-20. The board has recommended to include learning outcomes, suggested books and e-resources in prescribed format as discussed in the meeting.

Proposed examination scheme of B.Tech. MCTR programme with learning outcomes and new syllabi are enclosed in **Annexure-VI(C)**.

3. VII. (A) B.Tech. Biotechnology Examination Scheme (w. e. f. 2019-20)

S.No.	B.Tech. Biotechnology Examination Scheme	Remarks
i.	First Semester Examination, December, 2019	Revised
ii.	Second Semester Examination, April/May, 2020	Revised
iii.	Third Semester Examination, December, 2020	Revised
iv.	Fourth Semester Examination, April/May, 2021	Revised
v.	Fifth Semester Examination, December, 2021	Revised
vi.	Sixth Semester Examination, April/May, 2022	Revised
vii.	Seventh Semester Examination, December, 2022	Revised
viii.	Eighth Semester Examination, April/May 2023	Revised

(a) The board reviewed and revised the examination scheme of B. Tech. Biotechnology I Year (I and II Semesters) and agreed to follow the same from 2019-20.

(b) The contents of BIO101: Biology and ENGG 102L: *Measurement Technique Lab* is proposed to be revised by adding relevant topics/experiments.

- (c) The board reviewed and revised the examination scheme of B. Tech. Biotechnology II Year (III and IV Semesters) and agreed to follow the same from 2020-21 with additional one core and one elective foundation course.
- (d) Board agreed to introduce new experiments in the course BT 204L: *Biotechnology Lab-I* of III Semester.
- (e) Board proposed and approved revised courses BT 203: *Biophysics and Structural Biology* and BT 205L: *Biotechnology Lab-II. Seminar* (BT 208S) is proposed to be shifted from the V semester to the III semester from the permission of the Board.
- (f) The board reviewed and revised the examination scheme of B. Tech. Biotechnology III Year (V and VI Semesters) and agreed to follow the same from 2021-22. In the V Semester, the course '*Probability and Statistics*' is proposed to be introduced. Some experiments of the course BT 303L: *Biotechnology Lab-III* are proposed to be incorporated in the IV Semester laboratory course.
- (g) In the VI semester, some modifications are proposed in the topics of the course BIN 301: *Basic Bioinformatics*. The course BT 305: *Cell and Tissue Culture Technology* is proposed to be dropped and contents incorporated in other relevant courses. The contents of the course BT 311: *Recombinant DNA Technology*, CHEM 301: *Analytical Techniques* and BT 304L: *Biotechnology Lab-IV* are proposed to be revised and updated.
- (h) The board reviewed and revised the examination scheme of B. Tech. Biotechnology IV Year (VII and VIII Semesters) and agreed to follow the same from 2022-23. In the VII Semester, the reading electives *Plant Genetic Engineering* and *Renewable Energy Resources* are proposed to be replaced with following three newly introduced and more relevant/updated reading electives:
- Molecular Diagnostics,
 - Biodiversity and Conservation,
 - Emerging Trends in Biofuel

Additionally, the following online reading elective courses are also proposed to be offered in the seventh semester:

- Drug Discovery
<https://www.coursera.org/learn/drug-discovery>
- Proteins and Gel-Based Proteomics
<https://swayam.gov.in/course/1386-proteins-and-gel-based-proteomics>
- Online course on IPR
<http://www.ili.ac.in/e-learnIPR.htm>

- (i) In the VIII Semester, the courses *Animal Biotechnology* and *Plant Biotechnology* and laboratory course: *Biotechnology Lab V* are proposed to be revised.

The contents of elective course *Food and Dairy Biotechnology* are proposed to be revised and updated, and a course *Geoinformatics* is proposed to be introduced by the board.

The complete lists of electives proposed to be offered in the eighth semester are as follows:

- Biomedical Engineering,
- Food and Dairy Biotechnology,

- Genomics and Proteomics,
- Immunotechnology,
- Microbial Technology,
- Molecular Modelling and Drug Designing,
- Nanotechnology,
- Plant Secondary Metabolites,
- Geoinformatics

Additionally, the following online elective courses are also proposed to be offered in the VIII Semester:

- Bioreactor
<https://swayam.gov.in/course/1339-bioreactors>
- Principles of Downstream techniques in Bioprocess
<http://nptel.ac.in/syllabus/102106048/>
- Industrial Biotechnology
<https://www.coursera.org/learn/industrial-biotech>

Proposed examination scheme of B.Tech. Biotechnology programme with learning outcomes and new syllabi are enclosed in **Annexure-VII(A)**.

3.VII. (B) B.Tech. Biotechnology Examination Scheme (w. e. f. 2017-18 & 2018-19)

S.No.	B.Tech. Biotechnology Examination Scheme	Remarks
i.	Third Semester Examination, December, 2018/2019	Revised
ii.	Fourth Semester Examination, April/May, 2019/2020	Revised
iii.	Fifth Semester Examination, December, 2019/ 2020	Revised
iv.	Sixth Semester Examination, April/May, 2020/2021	Revised
v.	Seventh Semester Examination, December, 2020/2021	Revised
vi.	Eighth Semester Examination, April/May 2021/2022	Revised

- (a) The board reviewed the examination scheme of B. Tech. Biotechnology II Year (III and IV Semesters) 2018-19 and agreed to follow the same for 2019-20.
- (b) The board reviewed and revised the examination scheme of B. Tech. Biotechnology III Year (V and VI Semesters) and agreed to follow the same for sessions 2019-20 and 2020-21. In the V Semester, the course *Probability and Statistics* is proposed to be introduced. Some experiments of the course BT 303L: *Biotechnology Lab-III* are proposed to be incorporated in the IV Semester laboratory course.
- (c) In the VI semester, some modifications are proposed in the topics of the course BIN 301: *Basic Bioinformatics*. The course BT 305: *Cell and Tissue Culture Technology* is proposed to be dropped and contents incorporated in other relevant courses. The contents of the course BT 311: *Recombinant DNA Technology*, CHEM 301: *Analytical Techniques* and BT 304L: *Biotechnology Lab-IV* are proposed to be revised and updated.
- (d) The board reviewed and revised the examination scheme of B. Tech. Biotechnology IV Year (VII and VIII Semesters) and agreed to follow for sessions 2020-21 and 2021-22. In the VII Semester, the reading electives *Plant Genetic Engineering* and *Renewable Energy*

Resources are proposed to be replaced with following three newly introduced and more relevant/updated reading electives:

- Molecular Diagnostics,
- Biodiversity and Conservation,
- Emerging Trends in Biofuel

Additionally, the following online reading elective courses are also proposed to be offered in the seventh semester:

- Drug Discovery
<https://www.coursera.org/learn/drug-discovery>
- Proteins and Gel-Based Proteomics
<https://swayam.gov.in/course/1386-proteins-and-gel-based-proteomics>
- Online course on IPR
<http://www.ili.ac.in/e-learnIPR.htm>

(e) In the VIII Semester, the courses *Animal Biotechnology* and *Plant Biotechnology* and laboratory course: *Biotechnology Lab V* are proposed to be revised.

The contents of elective course *Food and Dairy Biotechnology* are proposed to be revised and updated, and a course *Geoinformatics* is proposed to be introduced by the board.

The complete lists of electives proposed to be offered in the eighth semester are as follows:

- Biomedical Engineering,
- Food and Dairy Biotechnology,
- Genomics and Proteomics,
- Immunotechnology,
- Microbial Technology,
- Molecular Modelling and Drug Designing,
- Nanotechnology,
- Plant Secondary Metabolites,
- Geoinformatics

Additionally, the following online elective courses are also proposed to be offered in the VIII Semester:

- Bioreactor
<https://swayam.gov.in/course/1339-bioreactors>
- Principles of Downstream techniques in Bioprocess
<http://nptel.ac.in/syllabus/102106048/>
- Industrial Biotechnology
<https://www.coursera.org/learn/industrial-biotech>

Proposed examination scheme of B.Tech. Biotechnology programme with learning outcomes and new syllabi are enclosed in **Annexure-VII(B)**.

3.VII. (C) B.Tech. Biotechnology Examination Scheme (w. e. f. 2016-17)

S.No.	B.Tech. Biotechnology Examination Scheme	Remarks
i.	Seventh Semester Examination, December, 2019	Revised

ii.	Eighth Semester Examination, April/May 2020	Revised
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- (a) The board reviewed and revised examination scheme of B.Tech. Biotechnology IV Year (VII and VIII Semesters) 2018-19 and agreed to follow the same scheme in 2019-20. The board has recommended to include learning outcomes, suggested books and e-resources in prescribed format as discussed in the meeting.

Proposed examination scheme of B.Tech. Biotechnology programme with learning outcomes and new syllabi are enclosed in **Annexure-VII(C)**.

3. VIII. (A) B.Tech. CHE Examination Scheme (w. e. f. 2019-20)

S.No.	B.Tech. CHE Examination Scheme	Remarks
i.	First Semester Examination, December, 2019	Revised
ii.	Second Semester Examination, April/May, 2020	Revised
iii.	Third Semester Examination, December, 2020	Revised
iv.	Fourth Semester Examination, April/May, 2021	Revised
v.	Fifth Semester Examination, December, 2021	Revised
vi.	Sixth Semester Examination, April/May, 2022	Revised
vii.	Seventh Semester Examination, December, 2022	Revised
viii.	Eighth Semester Examination, April/May 2023	Revised

- (a) The board reviewed and revised the examination scheme of B. Tech. CHE II Year (III and IV Semesters) and agreed to follow the same from 2020-21 with additional one core and one elective foundation course.
- (b) The board reviewed and revised the examination scheme of B. Tech. CHE III Year (V and VI Semesters) and agreed to follow the same from 2021-22. Board proposed two new courses *Numerical Methods* and *Probability & Statistics* in III Year. *Chemical Reaction Engineering* course has been shifted from V Semester to VI Semester.
- (c) The board reviewed and revised the examination scheme of B. Tech. CHE IV Year (VII and VIII Semesters) and agreed to follow the same from 2022-23.
- (d) Board agreed to adopt following courses as reading electives for VII Semester.
- Membrane Separation Technology
 - Corrosion Engineering
 - Enzyme Engineering
 - Renewable Energy Resources
 - Computer Aided Process Plant Design
- (e) Board agreed to introduce *Advanced Chemical Reaction Engineering*, *Optimization of Chemical Processes* and *Advanced Mass Transfer* as elective courses. B. Tech. VIII semester examination scheme will consist of two elective courses (which can be either open or disciplinary) and three compulsory courses. *Environmental Pollution Control* course has been shifted to VIII Semester. In B. Tech. VIII Semester *Chemical Plant Simulation* course has been shifted from elective to compulsory course.
- (f) The complete list of elective courses are as follows:

- Petroleum Refining Technology
- Polymer Science and Technology
- Advanced Heat Transfer
- Advanced Chemical Reaction Engineering,
- Advanced Mass Transfer,
- Optimization of Chemical Processes,
- Nanoscience and Technology
- Food Processing and Engineering
- Analytical Techniques,
- Robotics and Automation,
- Artificial Intelligence
- Cloud Computing.

Proposed examination scheme of B.Tech. CHE programme with learning outcomes and new syllabi are enclosed in **Annexure-VIII(A)**.

VIII. (B) B.Tech. CHE Examination Scheme (w. e. f. 2017-18 & 2018-19)

S.No.	B.Tech. CHE Examination Scheme	Remarks
i.	Third Semester Examination, December, 2018/2019	Revised
ii.	Fourth Semester Examination, April/May, 2019/2020	Revised
iii.	Fifth Semester Examination, December, 2019/ 2020	Revised
iv.	Sixth Semester Examination, April/May, 2020/2021	Revised
v.	Seventh Semester Examination, December, 2020/2021	Revised
vi.	Eighth Semester Examination, April/May 2021/2022	Revised

- (a) The board reviewed and revised the examination scheme of B. Tech. CHE II Year (III and IV Semesters) 2018-19 and agreed to follow the same in 2019-20.
- (b) The board reviewed and revised the examination scheme of B. Tech. CHE III Year (V and VI Semesters) and agreed to follow the same for sessions 2019-20 and 2020-21. Board proposed two new courses *Numerical Methods* and *Probability & Statistics* in III Year. *Chemical Reaction Engineering* course has been shifted from V Semester to VI Semester.
- (c) The board reviewed and revised the examination scheme of B. Tech. CHE IV Year (VII and VIII Semesters) and agreed to follow the same for sessions 2020-21 and 2021-22.
- (d) Board agreed to adopt following courses as reading electives for VII Semester.
- Membrane Separation Technology
 - Corrosion Engineering
 - Enzyme Engineering

- Renewable Energy Resources
 - Computer Aided Process Plant Design
- (e) Board agreed to introduce *Advanced Chemical Reaction Engineering*, *Optimization of Chemical Processes* and *Advanced Mass Transfer* as elective courses. B. Tech. VIII semester examination scheme will consist of two elective courses (which can be either open or disciplinary) and three compulsory courses. *Environmental Pollution Control* course has been shifted to VIII Semester. In B. Tech. VIII Semester *Chemical Plant Simulation* course has been shifted from elective to compulsory course.
- (f) The complete list of elective courses are as follows:
- Petroleum Refining Technology
 - Polymer Science and Technology
 - Advanced Heat Transfer
 - Advanced Chemical Reaction Engineering,
 - Advanced Mass Transfer,
 - Optimization of Chemical Processes,
 - Nanoscience and Technology
 - Food Processing and Engineering
 - Analytical Techniques,
 - Robotics and Automation,
 - Artificial Intelligence
 - Cloud Computing.

Proposed examination scheme of B.Tech. CHE programme with learning outcomes and new syllabi are enclosed in **Annexure-VIII(B)**.

3.VIII. (C) B.Tech. CHE Examination Scheme (w. e. f. 2016-17)

S.No.	B.Tech. CHE Examination Scheme	Remarks
i.	Seventh Semester Examination, December, 2019	Revised
ii.	Eighth Semester Examination, April/May 2020	Revised

- (a) The board reviewed and revised examination scheme of B.Tech. CHE IV Year (VII and VIII Semesters) 2018-19 and agreed to follow the same scheme in 2019-20. The board has recommended to include learning outcomes, suggested books and e-resources in prescribed format as discussed in the meeting.

Proposed examination scheme of B.Tech. CHE programme with learning outcomes and new syllabi are enclosed in **Annexure-VIII(C)**.

4. The BOS received and reviewed the reports of examiners for different examination from 2014 onwards. All the reports were found to be with good remarks. Only some reports were having poor remarks. The information about such reports has been conveyed to the respective Heads for necessary action. Analysis of reports will be submitted by the concerned Heads.

5. The board critically analyzed the question papers of B.Tech. (CSE/IT/ECE/EIE/EEE/MCTR/BT/CHE) and observed that all the question papers were balanced on the basis of desired parameters (Analytical, Descriptive, Thought provoking and Application based) and considering the nature of individual courses.
6. Board reviewed UIL Project Guidelines-2011 (**Annexure-IX**). Board gave consensus on the existing guidelines except the submission of synopsis in the hard copy. Board suggested submission of synopsis in soft copy may also be accepted. Guidelines for UIL project also require fresh look considering Choice Based Credit System and accordingly proposed evaluation scheme of semester project of B.Tech.(CSE/IT/ECE/EIE/EEE/MCTR/BT/CHE) students given in **Annexure-X**.

B. Tech. Chemical Engineering

B. Tech. Third Semester												Remark
Existing scheme						Proposed scheme						
Course Code	Course Name	L	T	P	C	Course Code	Course Name	L	T	P	C	No Change
BVF 007R	Selected Writings for Self Study-I	2	0	0	2	BVF 007R	Selected Writings for Self Study-I	2	0	0	2	
	Course Choice-1	3/4	0	0	3/4		Course Choice-1	3/4	0	0	3/4	
	Course Choice-2	4	0	0	4		Course Choice-2	4	0	0	4	
	Course Choice-3	3	0	0	3		Course Choice-3	3	0	0	3	
CHE 202	Chemical Process Calculations	3	1	0	4	CHE 202	Chemical Process Calculations	3	1	0	4	
CHE 204	Heat Transfer	3	1	0	4	CHE 204	Heat Transfer	3	1	0	4	
CS 209	Data Structures	4	0	0	4	CS 209	Data Structures	4	0	0	4	
CS 209L	Data Structures Lab	0	0	4	2	CS 209L	Data Structures Lab	0	0	4	2	
Total		22/23	2	4	26/27	Total		22/23	2	4	26/27	

B. Tech. Third Semester												Remark
Existing scheme						Proposed scheme						
Course Code	Course Name	L	T	P	C	Course Code	Course Name	L	T	P	C	No Change
Course Choice- 1						Course Choice- 1						
MATH 207	Complex Variables	3	0	0	3	MATH 207	Complex Variables	3	0	0	3	
MATH 208	Differential Equations	4	0	0	4	MATH 208	Differential Equations	4	0	0	4	
Course Choice- 2						Course Choice- 2						
ENGG 201	Structure and Properties of Materials	4	0	0	4	ENGG 201	Structure and Properties of Materials	4	0	0	4	
ENGG 202	Basic Electronics	4	0	0	4	ENGG 202	Basic Electronics	4	0	0	4	
Course Choice- 3						Course Choice- 3						
MGMT 209	Entrepreneurship	3	0	0	3	MGMT 209	Entrepreneurship	3	0	0	3	
TSKL 203	Technical Report Writing	3	0	0	3	TSKL 203	Technical Report Writing	3	0	0	3	

Semester IV

B. Tech. Fourth Semester												Remark
Existing scheme						Proposed scheme						
Course Code	Course Name	L	T	P	C	Course Code	Course Name	L	T	P	C	No Change
BVF 008R	Selected Writings for Self Study-II	2	0	0	2	BVF 008R	Selected Writings for Self Study-II	2	0	0	2	
	Course Choice-4	4/3	0	0	4/3		Course Choice-4	4/3	0	0	4/3	
	Course Choice-5	4	0	0	4		Course Choice-5	4	0	0	4	
	Course Choice-6	3	0	0	3		Course Choice-6	3	0	0	3	
CHE 201	Chemical Engineering Thermodynamics	3	1	0	4	CHE 201	Chemical Engineering Thermodynamics	3	1	0	4	
CHE 203	Fluid Mechanics	3	1	0	4	CHE 203	Fluid Mechanics	3	1	0	4	
CS 214	Object Oriented Programming	4	0	0	4	CS 214	Object Oriented Programming	4	0	0	4	
CS 214L	Object Oriented Programming Lab	0	0	4	2	CS 214L	Object Oriented Programming Lab	0	0	4	2	
Total		23/22	2	4	27/26	Total		23/22	2	4	27/26	

B. Tech. Fourth Semester												Remark
Existing scheme						Proposed scheme						
Course Code	Course Name	L	T	P	C	Course Code	Course Name	L	T	P	C	No Change
Course Choice- 4						Course Choice- 4						
MATH 208	Differential Equations	4	0	0	4	MATH 208	Differential Equations	4	0	0	4	
MATH 207	Complex Variables	3	0	0	3	MATH 207	Complex Variables	3	0	0	3	
Course Choice- 5						Course Choice- 5						
ENGG 202	Basic Electronics	4	0	0	4	ENGG 202	Basic Electronics	4	0	0	4	
ENGG 201	Structure and Properties of Materials	4	0	0	4	ENGG 201	Structure and Properties of Materials	4	0	0	4	
Course Choice- 6						Course Choice- 6						
TSKL 203	Technical Report Writing	3	0	0	3	TSKL 203	Technical Report Writing	3	0	0	3	
MGMT 209	Entrepreneurship	3	0	0	3	MGMT 209	Entrepreneurship	3	0	0	3	

Semester V

B. Tech. Fifth Semester												Remark
Existing scheme						Proposed scheme						
Course Code	Course Name	L	T	P	C	Course Code	Course Name	L	T	P	C	
FC 5.1	Course Choice-1	3	0	0	3		Course Choice-1	3	0	0	3	A reduction in credit has been proposed in comparison with other reputed universities and uniformity among the semesters. CRE course has been moved to 6 th sem. CME course has been removed considering Course choice-3. EPC course has been moved to final year.
CE 5.1	Course Choice-2	3	0	0	3		Course Choice-2	3	0	0	3	
CE 5.2	Chemical Reaction Engineering	3	1	0	4							
CE 5.3	Computational Methods in Engineering	3	1	0	4		Course Choice-3	3/4	0	0	3/4	
CE 5.4	Environmental and Fuel Lab	0	0	4	2		Environmental and Fuel Lab	0	0	4	2	
CE 5.5	Environmental Pollution Control	3	1	0	4							
CE 5.6	Mass Transfer	3	1	0	4		Mass Transfer	3	1	0	4	
CE 5.7	Chemical Process Control	3	1	0	4		Chemical Process Control	3	1	0	4	
CE 5.8	Process Simulation Lab-I	0	0	4	2		Process Simulation Lab-I	0	0	4	2	
CE 5.9	Fluid Mechanics and Mechanical Operations Lab	0	0	4	2		Fluid Mechanics and Mechanical Operations Lab	0	0	4	2	
CE 5.10	Mechanical Operations	3	1	0	4		Mechanical Operations	3	1	0	4	
Total		24	6	12	36		Total	18/19	3	12	27/28	

B. Tech. Fifth Semester												Remark
Existing scheme						Proposed scheme						
Course Code	Course Name	L	T	P	C	Course Code	Course Name	L	T	P	C	
Course Choice- 1						Course Choice- 1						Change in course name (Economics) has been suggested.
FC 5.1	Parenthood and Family Relation	3	0	0	3		Parenthood and Family Relation	3	0	0	3	
FC 5.1	Women in Indian Society	3	0	0	3		Women in Indian Society	3	0	0	3	
Course Choice- 2						Course Choice- 2						
CE 5.1	Economics for Engineers	3	0	0	3		Economics	3	0	0	3	
CE 5.1	Principles of Management	3	0	0	3		Principles of Management	3	0	0	3	
Course Choice- 3						Course Choice- 3						
							Numerical Methods	3	0	0	3	
							Probability & Statistics	4	0	0	4	

Semester VI

B. Tech. Sixth Semester													Remark
Existing scheme						Proposed scheme							
Course Code	Course Name	L	T	P	C	Course Code	Course Name	L	T	P	C		
FC 6.1	Course Choice-3	3	0	0	3		Course Choice-3	3	0	0	3	A reduction in credit has been proposed in comparison with other reputed universities and uniformity among the semesters. ACRE, OCP, AMT courses have been moved to disciplinary elective category in 4 th year.	
CE 6.1	Course Choice-4	3	0	0	3		Course Choice-4	3	0	0	3		
CE 6.2	Advanced Chemical Reaction Engineering	3	1	0	4		Chemical Reaction Engineering	3	1	0	4		
CE 6.3	Chemical Technology	3	1	0	4		Chemical Technology	3	1	0	4		
CE 6.4	Optimization of Chemical Processes	3	1	0	4		Course Choice-5	4/3	0	0	4/3		
CE 6.5	Plant Design and Economics	3	1	0	4		Plant Design and Economics	3	1	0	4		
CE 6.6	Process Simulation Lab-II	0	0	4	2		Process Simulation Lab-II	0	0	4	2		
CE 6.7	Seminar	0	2	0	2		Seminar	0	2	0	2		
CE 6.8	Advanced Mass Transfer	3	1	0	4								
CE 6.9	Heat and Mass Transfer Lab	0	0	4	2		Heat and Mass Transfer Lab	0	0	4	2		
CE 6.10	Reaction Engineering and Process Control Lab	0	0	4	2		Reaction Engineering and Process Control Lab	0	0	4	2		
Total		21	7	12	34		Total	19/18	5	12	30/29		

B. Tech. Sixth Semester													Remark
Existing scheme						Proposed scheme							
Course Code	Course Name	L	T	P	C	Course Code	Course Name	L	T	P	C		
Course Choice- 3						Course Choice- 3						Change in course name (Economics) has been suggested.	
FC 6.1	Women in Indian Society	3	0	0	3		Women in Indian Society	3	0	0	3		
FC 6.1	Parenthood and Family Relation	3	0	0	3		Parenthood and Family Relation	3	0	0	3		
Course Choice- 4						Course Choice- 4							
CE 6.1	Principles of Management	3	0	0	3		Principles of Management	3	0	0	3		
CE 6.1	Economics for Engineers	3	0	0	3		<u>Economics</u>	3	0	0	3		
Course Choice- 5						Course Choice- 5							
							Probability & Statistics	4	0	0	4		
							Numerical Methods	3	0	0	3		

Semester VII

B. Tech. Seventh Semester													Remark
Existing scheme						Proposed scheme							
Course Code	Course Name	L	T	P	C	Course Code	Course Name	L	T	P	C	Credits of UIL Project changed	
CE 7.1	Reading Elective	0	2	0	2		Reading Elective	0	2	0	2		
CE 7.2	University-Industry/Institution Linked (UIL) Project	0	25	0	25		University-Industry/Institution Linked (UIL) Project	0	20	0	20		
Total		0	27	0	27		Total	0	22	0	22		

Reading Elective		
S. No.	Course Code	Course Name
1.		Membrane Separation Technology
2.		Corrosion Engineering
3.		Enzyme Engineering
4.		Renewable Energy Resources
5.		Computer Aided Process Plant Design

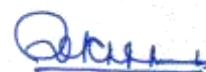
University-Industry/Institution Linked Project (UIL Project)			
#	Continuous Assessment (CA)	Weightage (%)	
1.	Outline	10	
2.	Mid-term progress report	20	
3.	Feedback from professional expert	10	
Sub total (CA)		40	
End Semester Assessment (ESA)			
1.	Viva-voce	10	
2.	Presentation	Knowledge of topic	10
		Way of presentation	10
3.	Report	Structure of report	10
		Quality of work	10
		Plagiarism	10
Sub total (ESA)		60	
Total (CA+ESA)		100	

Semester VIII

B. Tech. Eighth Semester													Remark
Existing scheme						Proposed scheme							
Course Code	Course Name	L	T	P	C	Course Code	Course Name	L	T	P	C		
CE 8.1	Departmental Elective-I	4	0	0	4		Elective-I	4	0	0	4	EPC inserted from 5 th Sem. CPS has taken from 8 th sem. List of electives has been modified as shown here	
CE 8.2	Departmental Elective-II	4	0	0	4		Elective-II	4	0	0	4		
CE 8.3	Open Elective-I	4	0	0	4								
CE 8.4	Open Elective-II	4	0	0	4								
CE 8.5	Process Plant Safety and Hazard Analysis	4	0	0	4		Process Plant Safety and Hazard Analysis	4	0	0	4		
							Environmental Pollution Control	3	1	0	4		
							Chemical Plant Simulation	4	0	0	4		
	Total	20	0	0	20		Total	19	1	0	20		

Existing scheme			Proposed scheme			Remark
Departmental/ Open Elective			Elective (Disciplinary)			
#	Course Name		#	Course Code	Course Name	
1.	Biochemical Engineering		1.		Biochemical Engineering	AHT included as a fresh elective. ACRE, AMT, OCP are converted in to electives (from 3 rd year).
2.	Chemical Plant Simulation					
3.	Food Processing & Engineering					
4.	Nano-Science & Technology					
5.	Petroleum Refining Technology		2.		Petroleum Refining Technology	
6.	Polymer Science & Technology		3.		Polymer Science & Technology	
			4.		Advanced Heat Transfer	
			5.		Advanced Chemical Reaction Engineering	
			6.		Advanced Mass Transfer	
			7.		Optimization of Chemical Processes	
			Elective (Open)			List of open electives has been increased.
			#	Course Code	Course Name	
			1.		Nano-Science & Technology	
			2.		Food Processing & Engineering	
			3.		Analytical Techniques	
			4.		Robotics and Automation	
			5.		Artificial Intelligence	
			6.		Cloud Computing	

Verified



Offg. Secretary
Banasthali Vidyapith
P.O. Banasthali Vidyapith
Distt. Tonk (Raj.)-304022