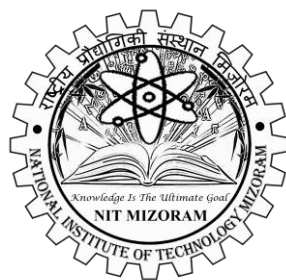


राष्ट्रीय प्रौद्योगिकी संस्थान मिजोरम
NATIONAL INSTITUTE OF TECHNOLOGY MIZORAM
(An Institute of National Importance under Ministry of Education, Govt. of India)
CHALTLANG, AIZAWL, MIZORAM – 796012



**Course Structure for B. Tech. Programme in
Chemical Science and Technology (CST)
BATCH: 2025-26 onwards**

VIDE **BoS** dated **23.08.2024-24.08.2024**

Department of Basic Sciences & HSS (Chemistry)

**Course Structure for B. Tech. Programme in
Chemical Science and Technology (CST)**

Classification of Credits Points:

1 Hr Lecture (L) per week	1.0 Credit	1 Hr Tutorial (T) per week	1.0 Credit
1 Hr Laboratory (P) per week	0.5 Credit	AUDIT Course	NO Credit

SEMESTER I				
Course Code	Course Name	Category	L-T-P	Credit
HUL 1101	Communicative English	DC	2-0-0	2
MAL 1101	Engineering Mathematics I	DC	3-1-0	4
CHL 1101	Engineering Chemistry	DC	3-0-0	3
EEL 1101	Basic Electrical Engineering	DC	3-0-0	3
MEL 1101	Engineering Mechanics	DC	3-0-0	3
MAL 1102	Data Analysis and Visualization	DC	1-0-0	AUDIT
EEP 1101	Basic Electrical Engineering Laboratory	DC	0-0-3	1.5
CHP 1101	Engineering Chemistry Laboratory	DC	0-0-3	1.5
MEP 1101	Engineering Mechanics Laboratory	DC	0-0-3	1.5
HUP 1101	Language Laboratory	DC	0-0-2	1
OBE 1101	OBE and Standardization	DC	1-0-0	AUDIT
TOTAL			16-1-11	20.5

SEMESTER II				
Course Code	Course Name	Category	L-T-P	Credit
ECL 1201	Basic Electronics Engineering	DC	3-0-0	3
HUL 1202	Social Science	DC	2-0-0	2
MAL 1202	Engineering Mathematics II	DC	3-1-0	4
PHL 1201	Engineering Physics	DC	3-0-0	3
CSL 1201	Introduction to Computer Programming	DC	3-0-0	3
CHL 1201	Environmental Science	DC	2-0-0	2
MEP 1201	Engineering Drawing	DC	0-0-4	2
CSP 1201	Introduction to Computer Programming Laboratory	DC	0-0-3	1.5
PHP 1201	Engineering Physics Laboratory	DC	0-0-3	1.5
MEP 1202	Workshop	DC	0-0-3	1.5
ECA 1201	Extracurricular Activity	DC	0-0-0	AUDIT
TOTAL			16-1-13	23.5

SEMESTER III				
Course Code	Course Name	Category	L-T-P	Credit
CHL 1301	Fundamentals of Organic Chemistry	DC	3-0-0	3
CHL 1302	Fundamentals of Physical Chemistry	DC	3-0-0	3
CHL 1303	Introduction to Chemical Technology	DC	3-0-0	3
MEL 1301	Material Science [#]	DC	3-0-0	3
HUL 1301	Managerial Economics	DC	3-0-0	3
CSL 1301	Data Structures ^{##}	DC	3-0-0	3
CHP 1301	Chemical Technology Laboratory-I	DC	0-0-3	1.5
CSP 1301	Data Structures Laboratory ^{##}	DC	0-0-2	1
TOTAL			18-0-5	20.5

[#]This course is from the Department of Mechanical Engineering, NIT Mizoram.

^{##}These two courses are from the Department of Computer Science and Engineering, NIT Mizoram.

SEMESTER IV				
Course Code	Course Name	Category	L-T-P	Credit
CHL 1401	Fundamentals of Inorganic Chemistry	DC	3-0-0	3
CHL 1402	Introduction to Quantum Chemistry	DC	3-0-0	3
CHL 1403	Organometallic Chemistry	DC	3-0-0	3
CHL 1404	Chemistry of Biomolecules and their Functions	DC	3-0-0	3
CHL 1405	Industrial Chemistry	DC	3-0-0	3
CHL 1406	Electrochemistry and Chemical Kinetics	DC	3-0-0	3
CHP 1401	Chemical Technology Laboratory-II	DC	0-0-6	3
TOTAL			18-0-6	21

SEMESTER V				
Course Code	Course Name	Category	L-T-P	Credit
CHL 1501	Polymer Science and Engineering	DC	3-0-0	3
CHL 1502	Nanomaterials: Synthesis and Applications	DC	3-0-0	3
CHL 1503	Spectroscopic and Instrumental Techniques for Chemical Analysis	DC	3-1-0	4
CHL 15XX	Elective-I	DC	3-0-0	3
CSL 1506	Artificial Intelligence [#]	DC	3-0-0	3
CHP 1501	Chemical Technology Laboratory-III	DC	0-0-6	3
TOTAL			15-1-6	19

[#]This course is from the Department of Computer Science & Engineering, NIT Mizoram.

SEMESTER VI				
Course Code	Course Name	Category	L-T-P	Credit
CHL 1601	Medicinal Chemistry	DC	3-0-0	3
CHL 1602	Chemical Technology: From Principle to Products	DC	3-0-0	3
CHL 1603	Computational Chemistry	DC	3-0-0	3
CHL 1604	Environmental Science and Engineering	DC	3-0-0	3
CHL 16XX	Elective-II	DE	3-0-0	3
CHL 16XX	Elective-III	DE	3-0-0	3
CHP 1601	Computational Chemistry Laboratory	DC	0-0-3	1.5
CHP 1602	Industrial Training / Visit	DC	0-0-2	1
TOTAL			18-0-5	20.5

SEMESTER VII				
Course Code	Course Name	Category	L-T-P	Credit
CHL 17XX	Elective-IV	DE	3-0-0	3
CHL 17XX	Elective-V	DE	3-0-0	3
CHL 17XX	Elective-VI	DE	3-0-0	3
CHD 1701	Project Phase-I	DC	0-0-12	6
CHD 1702	Seminar	DC	0-0-4	2
TOTAL			9-0-16	17

SEMESTER VIII				
Course Code	Course Name	Category	L-T-P	Credit
CHL 18XX	Elective-VII	DE	3-0-0	3
CHL 18XX	Elective-VIII	DE	3-0-0	3
CHD 1801	Project Phase-II	DC	0-0-20	10
CHD 1802	Grand Viva	DC	0-0-4	2
TOTAL			6-0-24	18

SEMESTER WISE CREDIT POINT(s)

SEMESTER	I	II	III	IV	V	VI	VII	VIII
CREDIT POINT	20.5	23.5	20.5	21	19	20.5	17	18
TOTAL								160

Structure of B. Tech in CST and corresponding credit point(s) in the Curriculum

Sl. NO.	TOPIC / RELEVANT AREA	CREDIT POINT	Percentage
1	Humanities and Social Science, including Management	8	5
2	Basic Sciences	14.5	9
3	Engineering Sciences, including workshops, drawings, and electrical/mechanical/computer science basics.	28	18
4	Major Discipline	109.5	68
TOTAL		160	100

LIST OF ELECTIVES**Elective-I (5th Semester)**

Sl. No.	Course Code	Course Name
1	CHL 1505	Group Theory and Spectroscopy
2	CHL 1506	Bioinorganic Chemistry
3	CHL 1507	Lubricant Chemistry
4	CHL 1508	Dyes, Paints and Pigments

Elective-II and III (6th Semester)

Sl. No.	Course Code	Course Name
1	CHL 1605	Drug Design and Development
2	CHL 1606	Catalysis
3	CHL 1607	Colloids and Interface Chemistry
4	CHL 1608	Metal Based Drugs

Elective-IV to VI (7th Semester)

Sl. No.	Course Code	Course Name
1	CHL 1702	Heterocyclic Chemistry
2	CHL 1703	Synthetic Organic Chemistry
3	CHL 1704	Advanced Spectroscopy
4	CHL 1705	Nuclear Chemistry
5	CHL 1706	Phytochemistry
6	CHL 1707	Advanced Materials and Engineering

Elective-VII and VIII (8th Semester)

Sl. No.	Course Code	Course Name
1	CHL 1801	Chemistry of Propellants and Pyrotechnics
2	CHL 1802	Petroleum Chemistry and Engineering
3	CHL 1803	Artificial Intelligence and Machine Learning in Chemistry
4	CHL 1804	Green and Sustainable Chemistry