

DEPARTMENT OF CIVIL ENGINEERING  
NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR J & K

**PROPOSED SCHEME OF COURSES FOR 1<sup>ST</sup> SEMESTER – 2023 ONWARDS**

**1<sup>st</sup> Semester (Group A)**  
**Civil/ Mechanical/ Chemical/ Mett. & Mat Science**

S. No	Course Code	Course Title	Department Offering	Credits	Contact Hours			
					L	T	P	Total
A11	HST101	Basic English and Communication Skills	Humanities	3	2	1	0	3
A12	MAT101	Mathematics I	Mathematics	3	2	1	0	3
A13	EET101	Basic Electrical Engineering	Electrical	3	2	1	0	3
A14	ITT101	Computer Programming	Information Technology	3	2	1	0	3
A15	CHT101	Engineering Chemistry	Chemistry	3	2	1	0	3
A16	CVT102	Engineering Drawing	Civil	3	1	0	4	5
A17	CHL101	Chemistry Laboratory	Chemistry	1	0	0	2	2
A18	ITL101	Computer Programming Laboratory	Information Technology	1	0	0	2	2
A10	NBA101	Fundamental Knowledge of Accreditation**	NBA Instt. Cell	0	2	0	0	2
<b>Total</b>				<b>20</b>	<b>13</b>	<b>5</b>	<b>8</b>	<b>26</b>

\*\* Compulsory Audit Course

**PROPOSED SCHEME OF COURSES FOR 2<sup>ND</sup> SEMESTER – 2023 ONWARDS**

**2<sup>nd</sup> Semester (Group A)**  
**Civil/ Mechanical/ Chemical/ Mett. & Mat Science**

S. No	Course Code	Course Title	Department Offering	Credit	Contact Hours			
					L	T	P	Total
A21	HST102	Advanced English and Comm. Skills	Humanities	3	2	1	0	3
A22	MAT102	Mathematics II	Mathematics	3	2	1	0	3
A23	MET101	Elements of Mechanical Engineering	Mechanical	3	2	1	0	3
A24	PHT101	Engineering Physics	Physics	3	2	1	0	3
A25	CHT102	Environmental Studies	Chemistry	3	2	1	0	3
A26	CVT101	Engineering Mechanics	Civil	3	2	1	0	3
A27	HSL101	English Language Laboratory	Humanities	1	0	0	2	2
A28	PHL101	Engineering & Applied Physics Laboratory	Physics	1	0	0	2	2
A29	WSL101	Workshop Practice	Workshop	2	0	0	4	4
<b>Total</b>				<b>22</b>	<b>12</b>	<b>6</b>	<b>8</b>	<b>26</b>

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**PROPOSED SCHEME OF COURSES FOR 3<sup>RD</sup> SEMESTER – 2023 ONWARDS**

S. No.	Course Code	Course Title	Department Offering	Credit	Contact Hours			
					L	T	P	Total
1	CVT201	Structural Analysis-I	Civil Engg.	3	2	1	0	3
2	CVL201	Structural Analysis Lab.	Civil Engg.	1	0	0	2	2
3	CVT202	Fluid Mechanics	Civil Engg.	3	2	1	0	3
4	CVL202	Fluid Mechanics Lab-I	Civil Engg.	1	0	0	2	2
5	CVT203	Surveying-I	Civil Engg.	3	2	1	0	3
6	CVL203	Surveying Lab-I	Civil Engg.	1	0	0	2	2
7	MAT201	Mathematics-III	Mathematics	3	2	1	0	3
8	CVT204	Building Materials and Construction	Civil Engg.	3	2	1	0	3
9	HST202	Basics of Industrial Economics and Management	Humanities	3	2	1	0	3
		<b>Total</b>		<b>21</b>	<b>12</b>	<b>6</b>	<b>6</b>	<b>24</b>

**PROPOSED SCHEME OF COURSES FOR 4<sup>TH</sup> SEMESTER – 2023 ONWARDS**

S. No.	Course Code	Course Title	Department Offering	Credit	Contact Hours			
					L	T	P	Total
1	CVT251	Structural Analysis-II	Civil Engg.	3	2	1	0	3
2	CVT252	Fluid Flow in Pipes and Channels	Civil Engg.	3	2	1	0	3
3	CVL252	Fluid Mechanics Lab-II	Civil Engg.	1	0	0	2	2
4	CVT253	Surveying-II	Civil Engg.	3	2	1	0	3
5	CVL253	Surveying Lab-II	Civil Engg.	1	0	0	2	2
6	CVT254	Engineering Geology	Civil Engg.	3	2	1	0	3
7	CVL254	Geology Lab	Civil Engg.	1	0	0	2	2
8	CVT255	Civil Engineering Drawing	Civil Engg.	3	1	0	4	5
9	CVL255	Survey Camp	Civil Engg.	2	0	0	4	4
10	MAT256	Mathematics-IV	Mathematics	3	2	1	0	3
		<b>Total</b>		<b>23</b>	<b>11</b>	<b>5</b>	<b>14</b>	<b>30</b>

\*2-Weeks Survey camp

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**PROPOSED SCHEME OF COURSES FOR 5<sup>TH</sup> SEMESTER – 2023 ONWARDS**

S. No.	Course Code	Course Title	Department Offering	Credit	Contact Hours			
					L	T	P	Total
1	CVT301	Design of Reinforced Concrete Structures-I	Civil Engg.	3	2	1	0	3
2	CVL301	Concrete Lab	Civil Engg.	1	0	0	2	2
3	CVT302	Highway Engineering	Civil Engg.	3	2	1	0	3
4	CVL302	Highway Engineering Lab	Civil Engg.	1	0	0	2	2
5	CVT303	Geotechnical Engineering-I	Civil Engg.	3	2	1	0	3
6	CVL303	Geotechnical Lab-I	Civil Engg.	1	0	0	2	2
7	CVT304	Water Resources Engineering	Civil Engg.	3	2	1	0	3
8	CVT305	Quantity Surveying and Cost Evaluation	Civil Engg.	3	2	1	0	3
9	HST301	Philosophy for Engineers: Society, Culture and Ethics	Humanities	3	2	1	0	3
		<b>Total</b>		<b>21</b>	<b>12</b>	<b>6</b>	<b>6</b>	<b>24</b>
10	CVT306-CVT308	<i>Honors Elective-I</i>	Civil Engg.	3	2	1	0	3
11	CVT B1 901	Quantity Surveying and Cost Evaluation ( <i>Institute Elective-I</i> )	Civil Engg.	3	2	1	0	3
12	CVT B2 902	Building Materials and Construction ( <i>Institute Elective-II</i> )	Civil Engg.	3	2	1	0	3

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**PROPOSED SCHEME OF COURSES FOR 6<sup>TH</sup> SEMESTER – 2023 ONWARDS**

S. No.	Course Code	Course Title	Department Offering	Credit	Contact Hours			
					L	T	P	Total
1	CVT351	Design of Steel Structures	Civil Engg.	3	2	1	0	3
2	CVT352	Traffic Engineering	Civil Engg.	3	2	1	0	3
3	CVL352	Traffic Engineering Lab.	Civil Engg.	1	0	0	2	2
4	CVT353	Geotechnical Engineering-II	Civil Engg.	3	2	1	0	3
5	CVL353	Geotechnical Lab-II	Civil Engg.	1	0	0	2	2
6	CVT354	Environmental Engineering-I	Civil Engg.	3	2	1	0	3
7	CVL354	Water Quality Lab	Civil Engg.	1	0	0	2	2
8	CVT3501	Industrial Training and Presentation	Civil Engg.	1	0	0	0	0
9	CVT355-CVT358	Elective-I	Civil Engg.	3	2	1	0	3
10	CVT359-CVT362	Elective-II	Civil Engg.	3	2	1	0	3
		<b>Total</b>		<b>22</b>	<b>12</b>	<b>6</b>	<b>6</b>	<b>24</b>
11	CVT363-CVT365	<i>Honors Elective-II</i>	Civil Engg.	3	2	1	0	3
12	CVT B1 951	Environmental Engineering ( <i>Institute Elective-I</i> )	Civil Engg.	3	2	1	0	3
13	CVT B2 952	Civil Engineering Drawing ( <i>Institute Elective-II</i> )	Civil Engg.	3	1	0	4	3

**PROPOSED SCHEME OF COURSES FOR 7<sup>TH</sup> SEMESTER – 2023 ONWARDS**

S. No.	Course Code	Course Title	Department Offering	Credit	Contact Hours			
					L	T	P	Total
1	CVT401-CVT403	Elective-III	Civil Engg.	3	2	1	0	3
2	CVT404-CVT406	Elective-IV	Civil Engg.	3	2	1	0	3
3	CVT407-CVT409	Elective-V	Civil Engg.	3	2	1	0	3
4	CVT410-CVT412	Elective-VI	Civil Engg.	3	2	1	0	3
5	CVS4001	Seminar	Civil Engg.	1	0	0	2	2
6	CVL4002	Pre-Project work	Civil Engg.	2	0	0	4	4
		<b>Total</b>		<b>15</b>	<b>8</b>	<b>4</b>	<b>6</b>	<b>18</b>
7	CVT413-CVT415	<i>Honors Elective-III</i>	Civil Engg.	3	2	1	0	3
8	CVT416-CVT418	<i>Honors Elective-IV</i>	Civil Engg.	3	2	1	0	3
9	CVT419-CVT421	<i>Honors Elective-V</i>	Civil Engg.	3	2	1	0	3

**PROPOSED SCHEME OF COURSES FOR 8<sup>TH</sup> SEMESTER – 2023 ONWARDS**

S. No.	Course Code	Course Title	Department Offering	Credit	Contact Hours			
					L	T	P	Total
1	CVT451-CVT454	Elective-VII	Civil Engg.	3	2	1	0	3
2	CVT455-CVT458	Elective-VIII	Civil Engg.	3	2	1	0	3
3	CVT459-CVT462	Elective-IX	Civil Engg.	3	2	1	0	3
4	CVL4501	Project	Civil Engg.	6	0	3	6	9
5	CVV4502	Professional Viva	Civil Engg.	1	-	-	-	-
		<b>Total</b>		<b>16</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>18</b>
6	CVT463-CVT466	<i>Honors Elective-VI</i>	Civil Engg.	3	2	1	0	3
7	CVT467-CVT470	<i>Honors Elective-VII</i>	Civil Engg.	2	2	0	0	2

**Important Notes:**

1. There are nine professional electives in the scheme and a student has to choose any seven elective courses from these. However, a student has the choice of taking two online courses of a minimum of 3 credits each from SWAYAM and/or NPTEL platforms from the list of online courses approved by the department.
2. The student has to take two open electives courses of 3 credits each as Institute-open electives from any department other than the parent department of the student.
3. A student has to earn a minimum of 160 credits for the award of B.Tech. Degree in Civil Engineering and a minimum of 180 credits for B. Tech. Degree with Honors in Civil Engineering.

**LIST OF ELECTIVE COURSES**

**6<sup>TH</sup> SEMESTER**

**ELECTIVE-I**

CVT355	Structural Analysis-III
CVT356	Watershed Management
CVT357	Railway and Airport Engineering
CVT358	Construction Technology and Management

**ELECTIVE-II**

CVT359	Concrete Technology
CVT360	Building Information Modelling
CVT361	Rock Mechanics and Tunnelling Technology
CVT362	Photogrammetry and Digital Image Processing

**7<sup>TH</sup> SEMESTER**

**ELECTIVE-III**

CVT401	Dynamics of Structures
CVT402	Design of Reinforced Concrete Structures-II
CVT403	Matrix Structural Analysis

**ELECTIVE-IV**

CVT404	Irrigation and Hydraulic Structures
CVT405	Applied Hydrology
CVT406	Fluvial Hydraulics

**ELECTIVE-V**

CVT407	Ground Improvement Techniques
CVT408	Earth Retaining Structures
CVT409	Geotechnical Field Measurements

**ELECTIVE-VI**

CVT410	Intelligent Transportation Systems
CVT411	Pavement Evaluation and Maintenance
CVT412	Road Safety Analysis and Audit

**8<sup>TH</sup> SEMESTER**

**ELECTIVE-VII**

CVT451	Earthquake Resistant Design
CVT452	Bridge Engineering
CVT453	Design of Prestressed Concrete Structures
CVT454	Instrumentation in Geotechnical Engineering

**ELECTIVE-VIII**

CVT455	Hydropower Engineering
CVT456	Environmental Engineering-II
CVT457	Fundamentals of GIS and Remote Sensing
CVT458	Risk and Reliability Analysis in Geotechnical Engineering

**ELECTIVE-IX**

CVT459	Foundation Analysis
CVT460	Disaster Management
CVT461	Construction Safety Management.
CVT462	Pavement Analysis and Design

**LIST OF HONORS ELECTIVE COURSES**

**5<sup>TH</sup> SEMESTER**

**HONORS ELECTIVE-I**

CVT306	Engineering Seismology
CVT307	Numerical Methods in Civil Engineering
CVT308	Hydrometeorology

**6<sup>TH</sup> SEMESTER**

**HONORS ELECTIVE-II**

CVT363	Architecture and Town Planning
CVT364	Solid Waste Management
CVT365	Resource Planning in Construction

**7<sup>TH</sup> SEMESTER**

**HONORS ELECTIVE-III**

CVT413	Durability of Concrete Structures
CVT414	Urban Hydrology
CVT415	Geosynthetics in Civil Engineering

**HONORS ELECTIVE-IV**

CVT416	Soil Dynamics
CVT417	Design of Special Structures
CVT418	Offshore Renewable Energy

**HONORS ELECTIVE-V**

CVT419	Finite Element Methods in Civil Engineering
CVT420	Advanced Steel Design
CVT421	Construction Laws and Claims

**8<sup>TH</sup> SEMESTER**

**HONORS ELECTIVE-VI**

CVT463	Hazardous Waste Management
CVT464	Design of Masonry Structures
CVT465	Design of Traffic Facilities
CVT466	Traffic Flow Theories

**HONORS ELECTIVE-VII**

CVT467	Landfill Engineering
CVT468	Pre-Engineered and Pre-Fabricated Structures
CVT469	Transport Economics and Evaluation
CVT470	Uncertainty Analysis in Engineering

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**REQUIRED CREDIT BREAKUP**

S. No.	Category	Credits		Courses/ Subjects
		Minimum	Maximum	
1	Humanities, Social Science and Management courses	13		Theory = 04 Lab. = 01
2	Basic Science Courses including Mathematics	23	29	Maths Theory = 4-6 Chemistry Theory = 2, Lab. = 01 Physics Theory = 01, Lab. = 01
		Mathematics = 12 – 18 Chemistry = 4 Physics = 4 Environmental Studies. 3		
3	Basic Engineering Courses	18		Theory =05 Workshop =01 Lab. =01
		Engineering Drawing = 3 Elements of Mechanical Engineering = 3 Basic Electrical Engg. = 3 Engineering Mechanics = 3 Workshop Practice = 2 Computer Programming = 4 (3+1)		
4	Institute Open Electives (Compulsory for all students)	06		Theory = 02
5	Professional Electives relevant to the branch	21	45	Theory = 07-15
6	Professional core courses relevant to the branch	63	69	Theory = 17-19, Lab = 9-12
7	Project (8 <sup>th</sup> semester) Pre-project (7 <sup>th</sup> semester) Seminar (6 <sup>th</sup> semester) Compulsory industrial training/ internship 8 weeks to be done after 5 <sup>th</sup> semester (6 <sup>th</sup> semester)	Project. = 06 Pre-Project = 02 Seminar = 01 Industrial Training or Internship = 01 Sub-total of credits = 10		4
<b>Total Minimum</b>		<b>B.Tech. Requirements = 160 credits</b> <b>B.Tech. with Honors = 180 credits</b>		