# Department of Civil Engineering

## B. Tech. 1st Semester Course Structure

| Sl. | Course Type | Course Code | Course Name | L-T-P | Course Category | Credits |
|---|---|---|---|---|---|---|
| 1 | IDC1 | NMCI101 | Engineering Mathematics - I | 3-0-0 | Theory | 3 |
| 2 | IDC2 | NPHI101 | Engineering Physics | 3-0-0 | Theory | 3 |
| 3 | IDC3 | NPHI102 | Engineering Physics Lab | 0-0-2 | Practical | 1 |
| 4 | DSC1 | NCEC101 | Building Materials and Building Construction | 3-0-0 | Theory | 3 |
| 5 | DSC2 | NCEC102 | Material Testing Laboratory | 0-0-2 | Practical | 1 |
| 6 | ESC1 | NMEE101 | Mechanics for Engineers | 3-0-0 | Theory | 3 |
| 7 | AEC1 | NHSA101 | Communication Skills | 1-0-0 | Theory | 1 |
| 8 | AEC2 | NHSA102 | Communication Skills Lab | 0-0-2 | Practical | 1 |
| 9 | SEC1 | NCES101 | Engineering Graphics | 1-0-3 | Theory | 2.5 |
| 10 | VAC1 | NESV101 | Environmental Science | 3-0-0 | Theory | 3 |
| | | | | | | **21.5** |

## B. Tech. 2nd Semester Course Structure

| Sl. | Course Type | Course Code | Course Name | L-T-P | Course Category | Credits |
|---|---|---|---|---|---|---|
| 1 | IDC4 | NMCI102 | Engineering Mathematics - II | 3-0-0 | Theory | 3 |
| 2 | DSC3 | NCEC103 | Surveying | 3-0-0 | Theory | 3 |
| 3 | DSC4 | NCEC104 | Surveying Laboratory | 0-0-2 | Practical | 1 |
| 4 | ESC2 | NESE101 | Basics of Environmental Engineering | 3-0-0 | Theory | 3 |
| 5 | AEC3 | NHSA103 | Understanding Human Behaviour | 2-1-0 | Theory | 3 |
| 6 | SEC2 | NMES101 | Manufacturing Process | 2-0-3 | Theory | 3.5 |
| 7 | VAC2 | NCSV101 | Computer Programming | 3-0-0 | Theory | 3 |
| 8 | VAC3 | NCSV102 | Computer Programming Lab | 0-0-2 | Practical | 1 |
| | | | | | | **20.5** |

## B. Tech. 3rd Semester Course Structure

| Sl. | Course Type | Course Code | Course Name | L-T-P | Course Category | Credits |
|---|---|---|---|---|---|---|
| 1 | DC3 | NCEC201 | Geotechnical Engineering | 3-1-0 | Theory | 4 |
| 2 | DC4 | NCEC202 | Transportation Engineering | 3-1-0 | Theory | 4 |
| 3 | DC5 | NCEC203 | Environmental Engineering | 3-1-0 | Theory | 4 |
| 4 | DP3 | NCEC204 | Geotechnical Engineering Laboratory | 0-0-2 | Practical | 1 |
| 5 | DP4 | NCEC205 | Transportation Engineering Laboratory | 0-0-2 | Practical | 1 |
| 6 | ESC3 | NCEE201 | Mechanics of Solids | 3-0-0 | Theory | 3 |
| 7 | AEC4 | NCEA201 | Computational Methods in Civil Engineering | 3-0-0 | Theory | 3 |
| | | | | | | **20** |

## B. Tech. 4th Semester Course Structure

| Sl. | Course Type | Course Code | Course Name | L-T-P | Course Category | Credits |
|---|---|---|---|---|---|---|
| 1 | DC6 | NCEC206 | Foundation Engineering | 3-1-0 | Theory | 4 |
| 2 | DC7 | NCEC207 | Water Resources Engineering -I | 3-1-0 | Theory | 4 |
| 3 | DC8 | NCEC208 | Structural Analysis -I | 3-1-0 | Theory | 4 |
| 4 | DP5 | NCEC209 | Environmental Engineering Laboratory | 0-0-2 | Practical | 1 |
| 5 | DP6 | NCEC210 | Structural Engineering Laboratory | 0-0-2 | Practical | 1 |
| 6 | ESC4 | NCEE202 | Fluid Mechanics and Machines | 3-0-0 | Theory | 3 |
| 7 | SEC4 | NCES201 | Introduction to Civil Engineering Systems and Design | 3-0-0 | Theory | 3 |
| | | | | | | **20** |

## B. Tech. 5th Semester Course Structure

| Sl. | Course Type | Course Code | Course Name | L-T-P | Course Category | Credits |
|---|---|---|---|---|---|---|
| 1 | DC9 | NCEC301 | Design of Concrete Structures | 3-1-0 | Theory | 4 |
| 2 | DC10 | NCEC302 | Structural Analysis -II | 3-1-0 | Theory | 4 |
| 3 | DE1 | | *To be chosen from the pool.* | 3-0-0 | Theory | 3 |
| 4 | DP7 | NCEC303 | Foundation Engineering Laboratory | 0-0-2 | Practical | 1 |
| 5 | DP8 | NCEC304 | Structural Detailing Laboratory | 0-0-2 | Practical | 1 |
| 6 | HSSE1 | | *To be chosen from the HSS pool. HSS department to contribute courses to the pool below.* | 3-0-0 | Theory | 3 |
| 7 | DC1 (Minor)/ DC1 (Hons) | | | 3-1-0 | Theory | 4 |
| 8 | SDC1 (Minor)/ DP1 (Hons) | | | 0-0-3 | Practical | 1.5 |
| | | | | | | **21.5** |

## B. Tech. 6th Semester Course Structure

| Sl. | Course Type | Course Code | Course Name | L-T-P | Course Category | Credits |
|---|---|---|---|---|---|---|
| 1 | DC11 | NCEC305 | Design of Steel Structures | 3-1-0 | Theory | 4 |
| 2 | DC12 | NCEC306 | Water Resources Engineering -II | 3-1-0 | Theory | 4 |
| 3 | DE2 | | *To be chosen from the pool.* | 3-0-0 | Theory | 3 |
| 4 | DP9 | NCEC307 | Water Resources Engineering Laboratory | 0-0-2 | Practical | 1 |
| 5 | HSSE2 | | *To be chosen from the HSS pool. HSS department to contribute courses to the pool below.* | 3-0-0 | Theory | 3 |
| 6 | DC2 (Minor)/ DC2 (Hons) | | | 3-1-0 | Theory | 4 |
| 7 | SDC2 (Minor)/ DP2 (Hons) | | | 0-0-3 | Practical | 1.5 |
| | | | | | | **20.5** |

## B. Tech. 7th Semester Course Structure

| Sl. | Course Type | Course Code | Course Name | L-T-P | Course Category | Credits |
|---|---|---|---|---|---|---|
| 1 | DE3 | | *To be chosen from the pool.* | 3-0-0 | Theory | 3 |
| 2 | DE4 | | *To be chosen from the pool.* | 3-0-0 | Theory | 3 |
| 3 | DC3 (Minor)/ DC3 (Hons) | | | 3-1-0 | Theory | 4 |
| 4 | SDC3 (Minor)/ DP3 (Hons) | | | 0-0-3 | Practical | 1.5 |
| 5 | Project | NCEC401 | Project - I | 8-0-0 | Project | 8 |
| 6 | Internship | NCES401 | Internship | 0-0-0 | Internship | 4 |
| | | | | | | **23.5** |

## B. Tech. 8th Semester Course Structure

| Sl. | Course Type | Course Code | Course Name | L-T-P | Course Category | Credits |
|---|---|---|---|---|---|---|
| 1 | DC4 (Minor)/ DC4 (Hons) | | | 3-1-0 | Theory | 4 |
| 2 | DC5 (Minor)/ DC5 (Hons) | | | 3-1-0 | Theory | 4 |
| 3 | SDC4 (Minor)/ DP4 (Hons) | | | 0-0-3 | Practical | 1.5 |
| 4 | Project | NCEC402 | Project - II | 8-0-0 | Project | 8 |
| | | | | | | **17.5** |

# POOLS/TABLES

## MINOR TABLE

| Title of Minor | | | Civil Engineering | | | | |
|---|---|---|---|---|---|---|---|
| **Sl.** | **Course Type** | **Course Code** | **Course Name** | **L-T-P** | **Course Category** | **Credits** | **Semester** |
| 1 | DC (Minor) | NCEC201 | Geotechnical Engineering | 3-1-0 | Theory | 4 | 5 |
| 2 | SDC (Minor) | NCEM301 | Basic Geotechnical Engineering Laboratory | 0-0-3 | Practical | 1.5 | 5 |
| 3 | DC (Minor) | NCEC208 | Structural Analysis -I | 3-1-0 | Theory | 4 | 6 |
| 4 | SDC (Minor) | NCEM302 | Basic Structural Engineering Laboratory | 0-0-3 | Practical | 1.5 | 6 |
| 5 | DC (Minor) | NCEC202 | Transportation Engineering | 3-1-0 | Theory | 4 | 7 |
| 6 | SDC (Minor) | NCEM401 | Basic Transportation Engineering Laboratory | 0-0-3 | Practical | 1.5 | 7 |
| 7 | DC (Minor) | NCEC305 | Design of Steel Structures | 3-1-0 | Theory | 4 | 8 |
| 8 | DC (Minor) | NCEC207 | Water Resources Engineering -I | 3-1-0 | Theory | 4 | 8 |
| 9 | SDC (Minor) | NCEM402 | Basic Water Resources Engineering Laboratory | 0-0-3 | Practical | 1.5 | 8 |
| | | | | | | **26 - Minor** | |

## HONORS TABLE

| **Sl.** | **Course Type** | **Course Code** | **Course Name** | **L-T-P** | **Course Category** | **Credits** |
|---|---|---|---|---|---|---|
| 1 | DC (Hons) | NCEH301 | Advanced Geotechnical Engineering | 3-1-0 | Theory | 4 |
| 2 | DP (Hons) | NCEH302 | Advanced Geotechnical Engineering Laboratory | 0-0-3 | Practical | 1.5 |
| 3 | DC (Hons) | NCEH303 | Advanced Transportation Engineering | 3-1-0 | Theory | 4 |
| 4 | DP (Hons) | NCEH304 | Advanced Transportation Engineering Laboratory | 0-0-3 | Practical | 1.5 |
| 5 | DC (Hons) | NCEH401 | Advanced Structural Analysis | 3-1-0 | Theory | 4 |
| 6 | DP (Hons) | NCEH402 | Advanced Structural Analysis Laboratory | 0-0-3 | Practical | 1.5 |
| 7 | DC (Hons) | NCEH403 | Advanced Design of Structures | 3-1-0 | Theory | 4 |
| 8 | DC (Hons) | NCEH404 | Advanced Water Resources Engineering | 3-1-0 | Theory | 4 |
| 9 | DP (Hons) | NCEH405 | Advanced Water Resources Engineering Laboratory | 0-0-3 | Practical | 1.5 |
| | | | | | | **26 - Hons.** |

## POOL of ESC (except MS & HSS)

| **Sl.** | **Course Type** | **Course Code** | **Course Name** | **L-T-P** | **Course Category** | **Credits** | **Semester** |
|---|---|---|---|---|---|---|---|
| 1 | ESC3 | NCEE201 | Mechanics of Solids | 3-0-0 | Theory | 3 | 3 |
| 2 | ESC4 | NCEE202 | Fluid Mechanics and Machines | 3-0-0 | Theory | 3 | 4 |

## POOL of AEC (except HSS)

| **Sl.** | **Course Type** | **Course Code** | **Course Name** | **L-T-P** | **Course Category** | **Credits** |
|---|---|---|---|---|---|---|
| 1 | AEC | NCEA201 | Computational Methods in Civil Engineering | 3-0-0 | Theory | 3 |
| 2 | AEC | | | 3-0-0 | Theory | 3 |

## POOL of SEC (except HSS)

| **Sl.** | **Course Type** | **Course Code** | **Course Name** | **L-T-P** | **Course Category** | **Credits** | **Semester** |
|---|---|---|---|---|---|---|---|
| 1 | SEC | | | 3-0-0 | Theory | 3 | 3 |
| 2 | SEC | NCES201 | Introduction to Civil Engineering Systems and Design | 3-0-0 | Theory | 3 | 4 |

## POOL of UG DE course

| **Sl.** | **Course Type** | **Course Code** | **Course Name** | **L-T-P** | **Course Category** | **Credits** | **Level of Course** |
|---|---|---|---|---|---|---|---|
| 1 | DE | NCED301 | Construction Planning and Management | 3-0-0 | Theory | 3 | **3** |
| 2 | DE | NCED302 | Reliability and Risk Assessment | 3-0-0 | Theory | 3 | **3** |
| 3 | DE | NCED303 | Traffic Engineering and Management | 3-0-0 | Theory | 3 | **3** |
| 4 | DE | NCED304 | Advanced Hydrology | 3-0-0 | Theory | 3 | **3** |
| 5 | DE | NCED305 | Bridge Engineering | 3-0-0 | Theory | 3 | **3** |
| 6 | DE | NCED401 | Ground Improvement | 3-0-0 | Theory | 3 | **4** |
| 7 | DE | NCED402 | Computational  Solid Mechanics | 3-0-0 | Theory | 3 | **4** |
| 8 | DE | NCED403 | Transportation Data Analytics | 3-0-0 | Theory | 3 | **4** |
| 9 | DE | NCED404 | Advanced Hydraulics and Hydraulic Structures | 3-0-0 | Theory | 3 | **4** |
| 10 | DE | NCED405 | Fundamentals of Prestressed Concrete | 3-0-0 | Theory | 3 | **4** |