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| Image result for nit meghalaya logo | | | | **National Institute of Technology Meghalaya**  An Institute of National Importance | | | | | | | | | | | | | | | | | | | | | | | **CURRICULUM** | | | | | | |
| Programme | | | | **Bachelor of Technology in Civil Engineering** | | | | | | | | | | | | | Year of Regulation | | | | | | | | | | **2019** | | | | | | |
| Department | | | | **Civil Engineering** | | | | | | | | | | | | | Semester | | | | | | | | | | **VII** | | | | | | |
| Course  Code | | Course Name | | | | | | | | **Pre requisite** | | | | Credit Structure | | | | | | | | Marks Distribution | | | | | | | | | | | |
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| **CE411** | | **Transportation Engineering II** | | | | | | | | **Nil** | | | | **3** | | **0** | | | **0** | **3** | | **50** | | | **50** | | | **100** | | | | **200** | |
| Course  Objectives | | **To gain knowledge about fundamental traffic parameters and their relationship.** | | | | | | | | | | Course Outcomes | | | | CO1 | | | **Demonstrate the clear understanding of the factors influencing road vehicle performance** | | | | | | | | | | | | | | |
| **Obtain a basic Knowledge of the fundamental issues in traffic engineering** | | | | | | | | | | CO2 | | | **Learn critical procedures for highway capacity and level of service analysis.** | | | | | | | | | | | | | | |
| **To study about various traffic management system.** | | | | | | | | | | CO3 | | | **Correlate the traffic signal theory and elements of traffic signal Operations.** | | | | | | | | | | | | | | |
| **To develop understanding of airport planning process, plan and design basic airport facilities such as runways, taxiways, etc.** | | | | | | | | | | CO4 | | | **Understand basic of airport planning** | | | | | | | | | | | | | | |
| **To develop understanding of harbour layout** | | | | | | | | | | CO5 | | | **Basic understanding of harbour engineering** | | | | | | | | | | | | | | |
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| No. | COs | | Mapping with Program Outcomes (POs) | | | | | | | | | | | | | | | | | | | | | | | Mapping with PSOs | | | | | | | |
| PO1 | | PO2 | PO3 | PO4 | PO5 | PO6 | | PO7 | | PO8 | | PO9 | | | PO10 | | | PO11 | | PO12 | | | PSO1 | | | PSO2 | | | | PSO3 |
| 1 | CO1 | | **3** | | **2** | **1** | **1** | **-** | **-** | | **-** | | **-** | | **-** | | | **-** | | | **-** | | **1** | | | **1** | | | **3** | | | | **1** |
| 2 | CO2 | | **3** | | **1** | **-** | **-** | **-** | **-** | | **-** | | **-** | | **-** | | | **-** | | | **-** | | **1** | | | **1** | | | **3** | | | | **1** |
| 3 | CO3 | | **2** | | **2** | **1** | **1** | **-** | **2** | | **-** | | **-** | | **-** | | | **-** | | | **-** | | **1** | | | **2** | | | **-** | | | | **1** |
| 4 | CO4 | | **2** | | **2** | **1** | **-** | **-** | **-** | | **-** | | **-** | | **-** | | | **-** | | | **-** | | **1** | | | **3** | | | **2** | | | | **1** |
| 5 | CO5 | | **-** | | **-** | **-** | **-** | **-** | **1** | | **-** | | **-** | | **-** | | | **-** | | | **-** | | **1** | | | **1** | | | **1** | | | | **1** |
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| SYLLABUS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. | Content | | | | | | | | | | | | | | | | | | | | | | | Hours | | | | | | | COs | | |
| I | Scope of Traffic Engineering & Study of its elements: Introduction, Road User andVehicle Characteristics and their effect on Road Traffic; Traffic Volume Studies, Speed Studies: Spot Speed , Speed and Delay Study, Origin-Destination studies. | | | | | | | | | | | | | | | | | | | | | | | **09** | | | | | | | **CO1** | | |
| **C02** | | |
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| II | Traffic Engineering Design: Principles of Road Junction design, Design of Roundabouts, Type of traffic signal, type of traffic signal system, Design of traffic signals, Parking studies and Characteristics. | | | | | | | | | | | | | | | | | | | | | | | **09** | | | | | | | **CO1** | | |
| **C03** | | |
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| III | **Airport Engineering:** Requirements of airport and airport Planning, Airport Classifications, Factors in Airport Site Selection,, Planning of Terminal Area, and different Layouts, Location of Gates, Types of Runway patterns, Runway Layout, Runway Length, Geometric Design of Runways, Layout of Taxiways, Exit or Turnaround Taxiways, Apron and Hangers. | | | | | | | | | | | | | | | | | | | | | | | **09** | | | | | | | **CO1** | | |
| **CO4** | | |
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| IV | **Harbour Engineering:** Harbour related terminology, Type of harbours, Site selection, accessibility, size and shape of harbour , Navigational aids: Fixed and Floating Signals, lighthouse, Beacons, Buoys, Fog Signals | | | | | | | | | | | | | | | | | | | | | | | **09** | | | | | | | **C01** | | |
| **CO5** | | |
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| Total Hours | | | | | | | | | | | | | | | | | | | | | | | | **36** | | | | | |  | | | |
| **Essential Readings** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Chakraborty, P and Das , D “Principles of Transportation Engineering” | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. S.C. Saxena and S.P Arora “ A Text Book of Railways Engineering”, DhanpatRaipublicaiton | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Rangwala, “Airport Engineering”, Charotar Publications | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. R. Srinivasan, “ Harbour, Dock, and Tunnel Engineering”, 28th edition, Charotar publication | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Supplementary Readings** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. McShane, W.R and Roess, R.P, “Traffic Engineering”, Prentice-Hall, Inc..Newjersey 1990 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Satish Chandra, M.M. Agarawal, “Railway Engineering” Oxford University Press 2013 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. SK Khanna, SS Jain, MG Arora, “ Airport Planning and Design”, Nem Chand and Bros 2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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