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|  | | | **National Institute of Technology Meghalaya**  An Institute of National Importance | | | | | | | | | | **CURRICULUM** | | |
| Programme | | | **Master of Technology** | | | | | Year of Regulation | | | | | **2018-19** | | |
| Department | | | **Civil Engineering** | | | | | Semester | | | | | **I** | | |
| Course Code | | Course Name | | Pre-requisite | | Credit Structure | | | | Marks Distribution | | | | | |
| L | T | P | C | INT | | MID | END | | Total |
| **CE 587** | | **Traffic Safety** | | **NIL** | | **3** | **0** | **0** | **3** | **50** | | **50** | **100** | | **200** |
| Course Objectives | | 1. To understand the fundamental of road traffic safety. 2. To learn the design of various traffic management structures 3. To understand different stages of road safety planning 4. To learn about the road safety audit procedure, 5. To understand post accident analysis methodology | | | Course Outcomes | | CO1 | To implement the fundamentals of traffic safety and planning. | | | | | | | |
| CO2 | To design traffic rotary and signal | | | | | | | |
| CO3 | To plan traffic safety strategies based on traffic condition | | | | | | | |
| CO4 | To learn about different stages and provision of road safety audit. | | | | | | | |
| CO5 | To understand basic methodology of accident analysis | | | | | | | |
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| SYLLABUS | | | | | | | | | | | | | | | |
| No. | Content | | | | | | | | | | Hours | | | COs | |
| I | **Introduction to road safety**  Traffic Safety related issues; Areas of influence for engineers and planners; Vehicle and Human Characteristics; Vehicle related characteristics; human factors; Non-motorist road users-Engineering Components; Road design standards-pavement properties, pavement failures, traffic regulations, mixed traffic regulations, | | | | | | | | | | **6** | | | CO1 | |
| II | **Traffic signs and signal design**  Data collection and its significance:, traffic data, planning data, design data; Feasibility; traffic calming;: introduction; description; significance, Field visit; Feasibility; Evaluation of safety improvement projects: mathematical and statistical techniques; Case studies | | | | | | | | | | **8** | | | CO2 | |
| III | **Traffic Safety Planning**  Traffic safety in planning stage: safety conscious planning, incorporation of traffic safety in planning process, pedestrians and bicyclists’ safety and transportation planning, Recent Trend and innovation in traffic safety | | | | | | | | | | **8** | | | CO3 | |
| IV | **Road Safety Audit**  Traffic sign and signals, Road safety issue, Type of road safety audit, methodology and case studies. Evaluation of safety improvement projects: mathematical and statistical techniques | | | | | | | | | | **8** | | | CO4 | |
| V | **Accident Analysis**  crash data, Crash analysis: temporal and spatial distributions; Problem identification and selection of countermeasures: engineering, enforcement and educational treatments;  Data and its significance: crash data, traffic data, planning data, design data; Crash analysis: temporal and spatial distributions; Problem identification and selection of countermeasures: engineering, enforcement and educational treatments | | | | | | | | | | **6** | | | CO5 | |
| Total Hours | | | | | | | | | | | **36** | | |  | |
| **Essential Readings** | | | | | | | | | | | | | | | |
| 1. Roger P. Roess, William R. McShane & Elena S. Prassas, Traffic Engineering, Prentice-Hall, 1990 | | | | | | | | | | | | | | | |
| 1. P. Chakroborty and A. Das, Principles of Transportation Engineering, Prentice Hall of India Pvt. Ltd., 2003 | | | | | | | | | | | | | | | |
| 1. L. R. Kadiyali, Traffic Engineering, Khanna Publishers, 2000 1990 | | | | | | | | | | | | | | | |
| **Supplementary Readings** | | | | | | | | | | | | | | | |
| 1. C. J. Khisty and B. K. Lall, Transportation Engineering: An Introduction, Prentice- Hall India, 2003. | | | | | | | | | | | | | | | |
| 1. Wohl M. and Martin B. V., Traffic System Analysis, McGraw-Hill Book Company, 1967 | | | | | | | | | | | | | | | |
| 1. Pignataro L. J., Traffic Engineering – Theory and Practice, Prentice Hall, 1973 | | | | | | | | | | | | | | | |