

Bachelor of Engineering Technology (Highways)
Brief Course Overview For 3rd Year Courses

Code	Course	Course Outline
BEH6.391	Research Methods	<ul style="list-style-type: none"> ▪ Information Retrieval Systems ▪ Statistical Methodologies and techniques ▪ Research Methodologies ▪ Research Proposal
BEH6.300	Pavement Engineering I	<ul style="list-style-type: none"> ▪ Wearing Surfaces: Types, properties, selection, materials. ▪ Surfacing Design & Construction: Chipseals, AC, Emulsions. Safety. ▪ Pavement Materials, Construction & Quality control. ▪ Sub grade: Preparation, Quality control, Improvement.
BEH7.310	Transportation Engineering II	<ul style="list-style-type: none"> ▪ Land Transport Administration, Programmes & Strategies. ▪ Revenue Sources, Funding, Allocation procedures, Legislation. ▪ Project Evaluation: Specific, Simplified, Full Procedures, Accident Analysis, Risk Analysis, Project Feasibility Report, Scheme Assessments. ▪ Quality Management: Concepts, Systems, Quality Plans. ▪ Asset and Maintenance Management: Lifecycle Asset Management, Contract types, Asset & Maintenance Management systems, Optimised Decision Making, Risk assessment, Maintenance Management.
BEH7.320	Project Management	<ul style="list-style-type: none"> ▪ Project Management: Principles & Functions. ▪ Cost, Time & Risk Management. ▪ Contract Management: Conditions of Contract, Costing, Tendering, Pricing Procedures, Variations, Time Extensions, Disputes.
BEH7.330	Engineering Management	<ul style="list-style-type: none"> ▪ Leadership; Operations Management; Planning & Control; Decision-making; Marketing; Employment Relations; Human Resource Management; Change Management; Establishing a Business; Office Functions.
BEH7.340	Geometric Design	<ul style="list-style-type: none"> ▪ Geometric Design Criteria; Horizontal & Vertical Alignment Design; Aesthetics; Safety; Roadside features; CAD applications.
BEH7.350	Drainage Design	<ul style="list-style-type: none"> ▪ Road Drainage Components & Hydraulics; Surface Drainage; Urban Storm-water Drainage Systems; Subsurface Drainage Systems; Culvert Design; External Loadings on Pipes; Environmental Impact Assessment & Management.
BEH7.360	Pavement Engineering II	<ul style="list-style-type: none"> ▪ Pavement Design: Fundamentals; Material Properties & Characterisation; Design Traffic Determination; Mechanistic Analysis; Rigid Pavements; Pavement Rehabilitation Design; Computer Applications.
BEH7.370	Traffic Engineering	<ul style="list-style-type: none"> ▪ Traffic Surveys; Traffic Flow Theory; Capacity Analysis; Intersection Design; Parking; Traffic & Transportation Planning; Road Crash Investigations.
BEH7.380	Engineering Economics	<ul style="list-style-type: none"> ▪ Accounting: Principles; Financial Statements; Costing & Budgeting. ▪ Economics: Concepts; Principles; Resources; Supply & Demand; GDP.
BEH7.390	Engineering Project	<ul style="list-style-type: none"> ▪ Project that requires the application of cumulative technical knowledge and skills from taught courses and principles underpinning highway engineering. The project will reflect an ability to: <ul style="list-style-type: none"> ▪ Identify and analyse a highway engineering issue/problem. ▪ Apply research methodology, data collection & analysis and problem-solving skills. ▪ Draw valid conclusions and formulate recommendations, and ▪ Report findings in an appropriate format. ▪ <i>BEH6.391 Research Methods is a pre-requisite for this course.</i>
BEH7.399	Engineering Project A	<ul style="list-style-type: none"> ▪ This course aims to integrate and synthesise previously acquired knowledge and skills in a typical project in which the student is required to investigate an engineering problem or project or situation; propose and develop a suitable solution, design or response; and communicate the execution and results using appropriate means. Research Methods is not a pre-requisite since the emphasis is on practical application of acquired knowledge rather than on fundamental research.