

B.ENG. (HONS) IN AUTOMOTIVE ENGINEERING

OFFERED BY UNIVERSITY OF
PLYMOUTH, UNITED KINGDOM

DURATION - 3 YEARS (FULL-TIME)
+ 6 MONTHS INTERNSHIP

The B.Eng. (Hons) in Automotive Engineering is an industry-aligned degree that prepares students to design, develop, and manufacture the next generation of vehicles. The curriculum is structured to transform students from engineering novices into specialized professionals capable of handling the complexities of modern mobility.

- ▶ **Year 1 (Foundations):** Focuses on the "building blocks" of engineering, ensuring a strong grasp of mathematics, physics, and design thinking.
- ▶ **Year 2 (Core Specialization):** Shifts into the heart of the automotive world, covering the physical dynamics of chassis systems and the transition from traditional internal combustion to electronic control.
- ▶ **Year 3 (Future-Proofing):** Dedicated to high-tech domains like AI-driven autonomous driving, FEA/CFD simulation, and Smart Mobility, culminating in an original research project.

KEY FEATURES

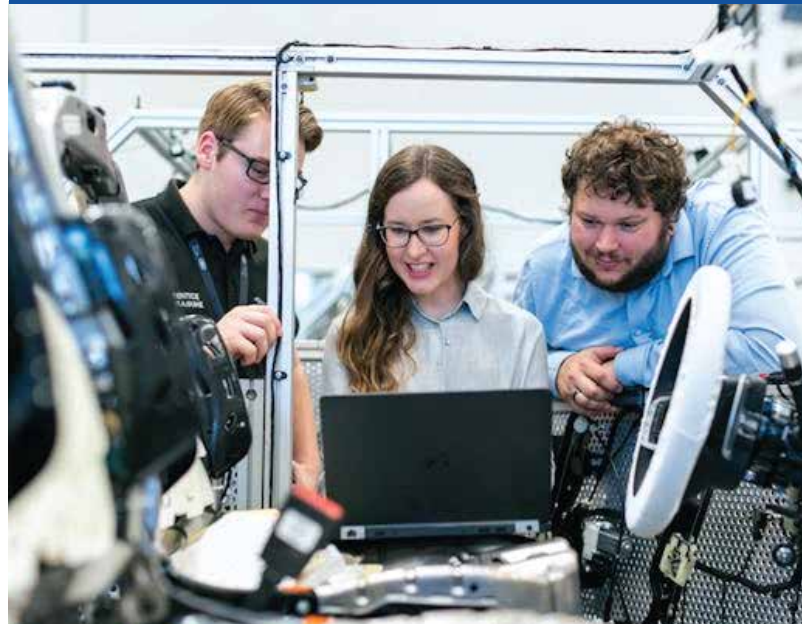
Hybrid Learning Model: This program balances traditional Internal Combustion Engine (ICE) knowledge with a heavy focus on Electric and Hybrid Vehicle Technology, making graduates versatile for the current market.

- ▶ **Advanced Simulation & CAE:** Students gain hands-on experience with industry-standard tools for Finite Element Analysis (FEA) and Computational Fluid Dynamics (CFD), allowing them to test vehicle aerodynamics and structural integrity digitally.
- ▶ **Autonomous & Intelligent Systems:** Unlike general mechanical degrees, this program includes ADAS (Advanced Driver Assistance Systems) and Intelligent Transportation, preparing students for the era of self-driving cars.
- ▶ **Material Science Innovation:** A dedicated focus on Lightweight Structures and sustainable materials addresses the industry's urgent need for vehicle efficiency and carbon footprint reduction.
- ▶ **Professional Practice:** Modules like Engineering Quality Management and Experimental Techniques ensure that students understand the "business" of engineering, including safety standards and lean manufacturing.



AIMS OF THE PROGRAMME

- ▶ To provide a strong engineering foundation for automotive applications
- ▶ To develop analytical, design, and problem-solving skills in vehicle engineering
- ▶ To equip students with knowledge in sustainable mobility and electrification technologies
- ▶ To enhance employability through industry exposure and practical training
- ▶ To support lifelong learning and professional development in the automotive sector
- ▶ To produce graduates capable of contributing to next-generation transportation systems



ENTRY QUALIFICATIONS

Three Passes in Physical Science, Biological Science or Technology streams in a single sitting, at one of the following examinations or equivalent foreign qualifications is the minimum entry requirement.

- ▶ *G.C.E. Advanced Level examination conducted by the Department of Examinations, Sri Lanka.*
 - ▶ *G.C.E. Advanced Level examination conducted by Pearson Edexcel, UK (London A/L).*
 - ▶ *International Advanced Level examination conducted by Pearson Edexcel, UK.*
 - ▶ *G.S.E. Advanced Level examination conducted by Cambridge International Examination, UK*
- OR**
- ▶ *Completion of NSBM Foundation programme. (Should have a minimum credit pass for Mathematics and Science in G.C.E. Ordinary level exam)*



GLOBAL JOB OPPORTUNITIES

Graduates are equipped for diverse roles across the global automotive supply chain, from high-performance racing teams to mass-market EV manufacturers.

PRIMARY AUTOMOTIVE ROLES

- **Vehicle Dynamics Engineer:** Optimizing suspension, steering, and braking systems for ride comfort and handling.
- **EV Powertrain Engineer:** Designing battery management systems (BMS) and electric motor configurations.
- **ADAS/Autonomous Systems Engineer:** Developing the software and sensor arrays (Lidar/Radar) that allow vehicles to "see" and react.
- **CAE Analyst:** Using simulation tools to perform crash tests and aerodynamic optimization before a physical prototype is built.

MANUFACTURING & QUALITY ROLES

- **Production Engineer:** Managing the assembly lines and robotic systems used in modern automotive plants.
- **Quality Management Specialist:** Ensuring every component meets rigorous international safety and durability standards.
- **Materials Engineer:** Researching carbon fiber composites and high-strength alloys for "light-weighting" vehicles.

EMERGING TECH & MOBILITY ROLES

- **Smart Mobility Consultant:** Working with city planners on Intelligent Transportation Systems (ITS) to reduce urban congestion.
- **Embedded Systems Developer:** Writing the code for Engine Control Units (ECUs) and vehicle infotainment systems.
- **Calibration Engineer:** Testing vehicles in extreme climates to fine-tune engine and motor performance.

PROGRAMME CONTENTS

YEAR 01 (COMMON ENGINEERING FOUNDATION)

- Basic Mathematics
- Basic Physics
- Engineering Design
- Engineering Practice and Experimental Techniques
- Engineering Science
- Engineering Mathematics
- Engineering Mechanics & Structures
- Engineering Materials

YEAR 02 (AUTOMOTIVE CORE)

- Vehicle Dynamics and Chassis Systems
- Internal Combustion Engines & Alternative Fuels
- Automotive Electrical & Electronic Systems
- Engineering Mathematics & Control
- Manufacturing Processes for Automotive Engineering
- Automotive Materials & Lightweight Structures
- Engineering Quality Management

YEAR 03 (ADVANCED & FUTURE AUTOMOTIVE TECHNOLOGIES)

- Automotive Engineering Honours Project (with Research Methods)
- Electric and Hybrid Vehicle Technology
- Autonomous Vehicle Systems & ADAS
- Computer Aided Engineering (FEA/CFD) for Automotive Applications
- Embedded Systems and Automotive Control
- Intelligent Transportation Systems & Smart Mobility
- Automotive Design and Product Development



CONTACT US FOR REGISTRATIONS
AND MORE INFORMATION

011-544 5000