Access to HE Diploma Specification & Assessment Framework

Diploma Title:

Engineering

Learning Aim:	40015695
Approved:	16 May 2024
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Date of next review:	September 2028

Purpose and aim of the Access to HE Diploma

The Access to HE Diploma is intended to prepare people without traditional entry qualifications for degree level study at university. It may also be used by people wishing to make a career change or who have been out of formal education for a significant time to gain the knowledge, skills and confidence required for direct progression to employment or further study. The Access to HE Diploma is regulated by QAA and widely recognised as a progression route by universities across the UK.

Target Group

The Access Diploma is open to all learners but is designed to be accessible for individuals who, because of their socio-economic or personal circumstances, may not have been able to consider progression to degree level study. The Access Diploma therefore provides a second chance for individuals who, for whatever reason, were not able to take full advantage of their formal secondary education.

About the qualification

The Diploma Specification for Engineering enables centres to choose from a variety of units in engineering and maths with additional options from physics or chemistry making the combination appropriate for their learners.

The progression routes[1] from this Diploma could include, but are not limited to, degrees in engineering, physics, chemical engineering, civil engineering, mechanical engineering, electrical engineering, electronics, mathematical sciences, etc.

Specification Rules

All LASER Diplomas are made up of 45 graded credits (sections A, B, C below) and 15 ungraded credits (section D). The policy for the LASER Access to HE Diploma Specification & Assessment Framework is available at Validated_Diploma_Specifications or by contacting the Access Office.

Section	Minimum Credits	Graded/Ungraded	Modules	Notes
A	30	Graded	Engineering Mathematics	
B	9 or 15	Graded	Additional units from group A or selected chemistry, physics	Number of credits dependent on choice of graded or ungraded IAS
C	6	Graded or Ungraded	Engineering Project	MANDATORY UNIT
D	9 or 15	Ungraded	Study Skills units or selected ungraded options from sections A and/or B	Study Skills units can be at level 2 or 3 Number of credits dependent on choice of graded or ungraded project

[1] Suggested progression routes have been taken from provider feedback and HE consultation, they may be subject to change and further review and do not indicate any guarantee of progression in these fields. LASER would always recommend students ensure the diploma they wish to enrol on is appropriate for their future progression.

Unit Choices: SUBJECT GROUP A

30 graded credits to be selected from the modules listed below, these units are chosen as specific to the subject of the named Diploma and are all at level 3.

Please note: QAA regulations state - *the maximum number of credits that can be made up from 6 or 9-credit units is 30 credits. Graded and ungraded 6 and 9-credit units will count towards the maximum.* As the Engineering Project is a mandatory graded or ungraded unit of 6 credits (Unit Group C), this means that **no more than four other 6-credit units (24 credits)** can be registered across Unit Groups A, B and D.

Engineering

Credits	Title
3	Applications and Operation of Programmable Logic Controllers (PLCs)
3	Computer Aided Drawing (CAD) for Engineers
6	Design and Manufacture of Printed Circuit Boards (PCBs)
6	Electrical Science for Engineers
6	Electronics
3	Engineering Design
3	Engineering Materials
3	Hydraulic and Pneumatic Systems
3	Introduction to Robotics
3	Manufacturing Processes
6	Mechanical Science for Engineers
3	Microprocessor Systems and Applications in Engineering
3	Operations and Applications of Industrial Robotics
3	Professional Engineering

Maths

Credits	Title
6	Mathematics for Engineers
6	Further Mathematics for Engineers
3	Algebra
3	Arithmetic
3	Calculus
3	Collecting, Presenting and Using Statistics
3	General Mathematics
3	Introduction to Mathematics for Scientists
3	Introduction to Mathematical Modelling Software
3	Statistics
3	The Nature and Applications of Statistics
3	Trigonometry

Unit Choices: SUBJECT GROUP B

9 or 15 graded credits (depending on choice of graded or ungraded IAS unit from Group C) to be selected from either the modules listed in Group A and/or from the additional modules offered below, these units are related to the subject of the named Diploma or will complement learning. These units are all at level 3.

Chemistry

Credits	Title
3	Equilibria Acids and Buffers
3	Fundamentals of Chemistry
3	Organic Chemistry
3	Organic Reaction Mechanisms
3	Periodic Table, Ionisation Energies and Redox
3	Reaction Kinetics and Energetics
3	Separation and Analysis
3	Structure and Bonding

Physics

Credits	Title
3	Electricity
3	Electromagnetism
3	Fields
3	Mechanics and Kinematics
3	Nuclear and Particle Physics
3	Optics and Waves
3	Physical Properties of Materials
3	Thermal Properties of Matter
3	Units, Energy and Motion

General Science

Credits	Title
3	Introduction to Science and the Scientific Method

Independent Academic Study: GROUP C

6 credits are achieved from independent academic study in each Diploma title, for Engineering, this is achieved through the Engineering Project. This unit is at level 3 and can be offered as graded or ungraded (but not both) within a centre's Rules of Combination.

Independent Academic Study	
Credits	**Title**
6	Engineering Project

Ungraded Units: GROUP D

15 or 9 ungraded credits (depending on choice of graded or ungraded IAS unit from Group C) are selected from the modules listed in Group D. These units are generally at level 3 but some study skills units may be available at level 2.

Applied Study Skills		
Level	**Credits**	**Title**
3	3	Academic Communication Skills
3	3	Critical Thinking
3	3	Data Analysis using IT
3	3	Essential Digital Skills for Students
3	3	Giving a Presentation to an Audience
3	3	Note Taking and Note Making
3	3	Preparing for and Taking Written Exams
2 or 3	3	Skills for Study: Essay Writing
2 or 3	3	Skills for Study: Research
2 or 3	3	Skills for Study: Writing
2 or 3	3	Using ICT for Study
Personal Reflection & Development		
Level	**Credits**	**Title**
3	3	Citizenship: Rights and Responsibilities for UK Professions
3	3	Cultural Diversity and Professional Practice
3	3	Mental Health and Self-Care Whilst Studying
3	3	Personal Organisation and Time Management
3	3	Reviewing and Planning for the Future

General English

Level	Credits	Title
3	3	Communication – Reading and Writing
3	3	Communication – Speaking and Listening
2	3	English Language Skills
3	3	Studying Literature

General Maths

Level	Credits	Title
3	3	Application of Number - Calculation
3	3	Application of Number – Data Interpretation
3	6	Introductory Mathematics for HE
2	3	Understanding Maths

Ungraded Academic Subject Content (all at level 3)

Units cannot be included within a centre's Rules of Combination as both graded and ungraded, but centres can choose to offer some academic subject units as ungraded versions. These must be identified as part of the course approval and will apply to all cohorts on this diploma title within a centre. If a centre wishes to include other units in Groups A or B as ungraded content, this will need to be requested for consideration by the AVA, giving valid reasons for inclusion, as part of course approval.

Credits	Title
Ungraded Engineering	
3	Hydraulic and Pneumatic Systems
3	Introduction to Robotics
3	Microprocessor Systems and Applications in Engineering
Ungraded Maths	
3	Applied Further Mathematics
3	Algebra
3	Arithmetic
3	Collecting, Presenting and Using Statistics
3	General Mathematics
3	Introduction to Mathematics for Scientists
3	Introduction to Mathematical Modelling Software
3	Statistics
3	The Nature and Applications of Statistics
3	Trigonometry
Ungraded Chemistry	
3	Fundamentals of Chemistry
3	Organic Chemistry
3	Organic Reaction Mechanisms
3	Separation and Analysis
Ungraded Physics	
3	Electricity
3	Electromagnetism and Waves
3	Mechanics, Energy and Matter
3	Physical Properties of Materials
3	Units, Energy and Motion

Ungraded General Science	
3	Introduction to Science and the Scientific Method
3	Practical Science Skills

Diploma Assessment Framework

All LASER validated Access to HE programmes must include a **Diploma Assessment Plan** as a part of their validation/revalidation process and the plans will be required to be updated and available for review as part of the yearly External Quality Assurance cycle. In identifying assessment models, practitioners should also give due consideration to the requirements of the LASER Guidance on the Use of AI to ensure the veracity of assessments as measures of student achievement.

The policy for the LASER Access to HE Diploma Specification & Assessment Framework is available via Validated_Diploma_Specifications or by contacting the Access Office.

Required Assessment Models:

Assessment Model[2]	Suggested Weighted Frequency of Use	Comments
Examination	High / Moderate / Low	*Required by LASER Examination Policy and identified as a commonly used assessment model within HE.* The LASER Examination Policy requires all LASER validated Diploma Titles to contain at least **three** opportunities for students to experience appropriate forms of 'summative' examination which contribute to the final assessment and grade of the unit. Unless there is a compelling reason, **no diploma should contain more than six examinations**. The full policy can be viewed here: Access_Policies.
Project	High / Moderate / Low	*This could be evidenced by the submission of the graded independent academic study or could be evidenced via an alternative graded unit of assessment.*
Reflective Log	High / Moderate / Low	
Report	High / Moderate / Low	
Production of an Artefact	High / Moderate / Low	
Production of a Design Specification	High / Moderate / Low	*Examples of evidence could include CAD drawing, materials list and production schedule against a pre-agree specification.*

[2] Definitions of the meanings of given **Assessment Models** are contained within Annex One of the LASER Access to HE Diploma Specification & Assessment Framework.

Recommended Assessment Models:

Recommended Assessment Model	Possible Weighting	Comments
Presentation	Strongly Recommended / Recommended / Suggested	