Validation Document		
1	Title of Programme	Pearson BTEC Level 4 Higher National Certificate in Mechanical Engineering Pearson BTEC Level 4 Higher National Certificate in Electrical and Electronic Engineering Pearson BTEC Level 5 Higher National Diploma in General Engineering Pearson BTEC Level 5 Higher National Diploma in Electrical and Electronic Engineering
2	Award (e.g. FdA, FdSc)	HNC HND
3	Contained Award	N/A
4	UCAS code (if applicable)	H301 - Pearson BTEC Level 4 Higher National Certificate in Mechanical Engineering 006H - Pearson BTEC Level 4 Higher National Certificate in Electrical and Electronic Engineering H100 - Pearson BTEC Level 5 Higher National Diploma in General Engineering 106H - Pearson BTEC Level 5 Higher National Diploma in Electrical and Electronic Engineering
5	HECOS codes	100190 - Pearson BTEC Level 4 Higher National Certificate in Mechanical Engineering 100163 - Pearson BTEC Level 4 Higher National Certificate in Electrical and Electronic Engineering 100184 - Pearson BTEC Level 5 Higher National Diploma in General Engineering 100163 - Pearson BTEC Level 5 Higher National Diploma in Electrical and Electronic Engineering
6	Mode of Study (full and/or part-time)	Full time and part time for all programmes

7	Duration (total number of years)	L4 HNC Full time 1 year L4 HNC Part time 2 years L5 HND Full time 1 year L5 HND Part time 1 or 2 years depending on prior units achieved.
8	Number of weeks per academic year	34
9	Accrediting Professional / Statutory Body (if applicable)	N/A
10	Location of delivery	Grimsby Institute
11	Faculty	Advanced Technology
12	Entry requirements	

Standard offer
HNC - Applicants will normally hold a BTEC Level 3 Diploma or Extended Diploma (or equivalent) in a relevant Engineering discipline. Applicants are also required to hold English and Maths GCSE (or equivalent) at grade C/4.
HND - Applicants will normally hold a Pearson BTEC Higher National Certificate in an Engineering discipline.

Non-standard offer
The Institute will also encourage applications from non-traditional learners who lack formal academic qualifications. All such non-traditional applicants will be interviewed, set an appropriate piece of work (a maths assessment) and a judgement made taking into account their academic potential and relevant experience.

Students who have life experience and recent work experience within the sector will be considered on an individual basis. Students will take part in an entry test in relation to the topic that they will cover within this programme, along with an interview that will identify their reason for choosing this course.

Accreditation of prior learning
Applicants may be admitted with credit for prior certificated learning (APcL) or work/life experience or other uncertificated learning (APeL) – refer to the Higher Education Quality Handbook.

Students who have successfully completed another relevant programme of study at least at the equivalent level may be eligible to apply for APcL. Claim forms must be supported by the official transcript or certificate of the awarding body of the original qualification and any guidance explaining the allocation of credit and grading scheme used to enable module comparison.

International admissions
The Institute recognises a wide range of entry qualifications as being equivalent to A' level standard; if students hold a qualification not listed above please contact the Institute's admissions team on +44 (0) 1472 311222 ext 434.

International students must evidence they possess a satisfactory command of English language in terms of reading, writing, listening and are expected to have achieved Level B2 on the Common European Framework of Reference for Language (CEFR), as defined by UK Visas and Immigration.

13	Minimum number of students required for the programme to run	5
14	Degree classification weighting	

The final award is classified in line with Pearson's regulations for the award of Pass/Merit/Distinction.

15	Aims of the programme and distinctive features/fit with existing provision

The Level 4 Higher National Certificate in Engineering offers students a broad introduction to the subject area via a mandatory core of learning, while allowing for the acquisition of some sector-specific skills and experience through the specialist units in each pathway, with the opportunity to pursue a particular interest through the appropriate selection of optional units. This effectively builds underpinning core skills while preparing the student for more intense subject specialisation at Level 5. Students will gain a wide range of sector knowledge tied to practical skills gained in research, self-study, directed study and workplace activities.

The Level 5 Higher National Diploma in Engineering offers students five pathways, designed to support progression into relevant occupational areas or onto degree level study. These pathways are linked to Professional Body standards (where appropriate) and can provide progression towards professional status or entry to the later stages of an appropriate degree.

Holders of the Level 5 Higher National Diploma will have developed a sound understanding of the principles in their field of study, and will have learned to apply those principles more widely. Through this they will have learned to evaluate the appropriateness of different approaches to solving problems. They will be able to perform effectively in their chosen field, and will have the qualities necessary for employment in situations requiring the exercise of personal responsibility and decision-making.

The aims of these Higher National programmes are:

- Provide opportunities for students to enter, or progress in, employment or self-employment within the engineering sector, or progress to higher education qualifications such as Foundation Degrees and honours degree in engineering or a closely related area, by balancing employability skills with academic attainment.
- Provide opportunities for students to make progress towards achieving internationally recognised registration with a Professional Body regulated by the Engineering Council.

Upon successful completion of this qualification graduates will be equipped with the knowledge and skills to pursue a new career, or advance an existing one in the Engineering sector. Engineering careers can begin with work opportunities with small to medium enterprise organisations (those with less than 250 employees) or with national and multi-national organisations. Many also go onto self-employment which is usually not possible until a graduate has several years' experience. Other graduates will go on to work for large organisations which may comprise roles in engineering management; engineering maintenance and servicing, project management, design engineering, planning or working on large infrastructure projects linked to the engineering and construction industries.

HNC Mechanical Engineering
The programme evaluates the underpinning areas of engineering, design, processes, systems and technology, including various branches of science and mathematics.

It is designed to provide students who are seeking to further their career in a range of manufacturing, processing and service industries. The HNC provides students who have completed a BTEC Level 3 Diploma or Extended Diploma (or equivalent) in an engineering discipline with a thorough understanding of eight further engineering subjects.

On completion of the HNC in Mechanical Engineering, students can progress to the HND in General Engineering subject to grade achieved overall at HNC.

For the Mechanical Engineering pathway, students take the four mandatory core units, two specialist units and an additional two optional units.

HNC Electrical & Electronic Engineering
The programme evaluates the underpinning areas of engineering, design, processes, systems and technology, including various branches of science and mathematics.

It is designed to provide students who are seeking to further their career in a range of careers such as electronic circuit design/implementation, digital principles, engineering design and many more engineering career pathways. The HNC provides students who have completed a BTEC Level 3 Diploma or Extended Diploma (or equivalent) in an engineering discipline with a thorough understanding of eight further engineering subjects.

For the Electrical and Electronic Engineering pathway, students take the four mandatory core units, one specialist unit and three additional optional units.

HND General Engineering
The programme evaluates the basic areas of engineering, design, processes, systems and technology, including further mathematics. This qualification has a strong bias towards mechanical subjects.
It is designed to provide students who are seeking to further their career in a range of manufacturing, processing and service industries. The HND provides students who have completed a HNC in an engineering discipline with a thorough understanding of six to eight further engineering subjects (depending upon entry qualifications).

HND Electrical & Electronic Engineering
The programme evaluates the underpinning areas of engineering, design, processes, systems and technology, including various branches of science and mathematics.

It is designed to provide students who are seeking to further their career in a range of careers such as electronic circuit design/implementation, electrical power (power generation and distribution) and many more engineering career pathways. The HNC provides students who have completed a BTEC Level 3 Diploma or Extended Diploma (or equivalent) in an engineering discipline with a thorough understanding of eight further engineering subjects.

16	Programme Learning Outcomes *Upon successful completion of this programme a student will be able to...*	
	Programme Learning Outcome	Subject Benchmark Reference
1	Demonstrate knowledge, skills and techniques that all engineers require, irrespective of future specialism, to achieve high performance in the engineering profession.	

2	Understand specialist knowledge, skills and techniques in order to be successful in a range of careers in engineering at the Associate Engineer or Operational Engineer level.	
3	Develop the skills necessary to fault find and problem solve in a timely, professional manner, reflecting on their work and contributing to the development of the process and environment they operate within.	
4	Analyse and evaluate the responsibilities of the engineer within society, working with integrity, regard for cost, sustainability and the rapid rate of change experienced in world class engineering.	
17	Teaching and Learning Strategy	

Methods of learning and teaching are designed to support students in becoming active members of a learning community. Students will be expected to work together in an informal environment as well as in formal classes where a culture of dignity, courtesy and mutual respect with staff and their peers is essential. A variety of methods will be used such as lectures, workshops, student led seminars and practical sessions. There may be opportunities to integrate a work-based or placement opportunity. Students will be visited in the workplace by a member of Institute staff to ensure a positive partnership between the employer / mentor and to monitor that learning in the workplace is effective. Workplace learning is designed to support the development of an employable graduate equipped with the attributes, skills and knowledge to progress within a global market.

Lectures and seminars
Face to face. These are the most common techniques used by tutors. They offer an opportunity to engage with a large number of students, where the focus is on sharing knowledge through the use of presentations. Guest speakers and lecturers will be sourced from the local and national area, including shared expertise with the Grimsby Group.

Workshops and student led learning
These are used to build on knowledge shared via tutors and seminars. Teaching can be more in-depth where knowledge is applied, for example to case studies or real-life examples. Workshops could be student-led, where students present, for example, findings from independent study.

Tutorials
These present an opportunity for focused one-to-one support, where teaching is led by an individual student's requirements. These are timetables and regular for every student.

Virtual Learning Environments (VLEs)
The VLE used is Canvas, already in place and used successfully across the Engineering department.
Use of Skype in the classroom and video conferencing opportunities.

Work-based learning
Any opportunity to integrate work-based learning into a curriculum should be taken. This adds realism and provides students with an opportunity to link theory to practice in a way in

which case studies do not. Many full-time students are involved in some form of employment, either paid or voluntary, which could be used, where appropriate.

Guest speakers
These could be experts from industry or visiting academics in the subject area that is being studied. They could be used to present a lecture/seminar, a workshop or to contribute to assessment. The objective is to make the most effective use of an expert's knowledge and skill by adding value to the teaching and learning experience.

18.1	Programme Structure: HNC Mechanical Engineering			
Module Title	Core/ Option	Credits	Level	Delivery S1/S2
Unit 1: Engineering Design	C	15	4	S1&S2
Unit 2: Engineering Maths	C	15	4	S1&S2
Unit 3: Engineering Science	C	15	4	S1&S2
Unit 4: Managing a Professional Engineering Project	C	15	4	S1&S2
Unit 5: Renewable Energy	O	15	4	S1&S2
Unit 8: Mechanical Principles	Specialist (M)	15	4	S1&S2
Unit 11: Fluid Mechanics	O	15	4	S1&S2
Unit 13: Fundamentals of Thermodynamics and Heat Engines	Specialist (M)	15	4	S1&S2

18.2	Programme Structure: HNC Electrical & Electronic Engineering			
Module Title	Core/ Option	Credits	Level	Delivery S1/S2
Unit 1: Engineering Design	C	15	4	S1&S2
Unit 2: Engineering Maths	C	15	4	S1&S2
Unit 3: Engineering Science	C	15	4	S1&S2
Unit 4: Managing a Professional Engineering Project	C	15	4	S1&S2
Unit 15: Automation, Robotics and PLC's	O	15	4	S1&S2
Unit 19: Electrical and Electronic Principles	Specialist (M)	15	4	S1&S2

Unit 20: Digital Principles	O	15	4	S1&S2
Unit 22: Electronic Circuits and Devices	O	15	4	S1&S2

18.3	Programme Structure: HND General Engineering			
Module Title	Core/ Option	Credits	Level	Delivery T1/T2/T3
Unit 34: Research Project	C	30	5	S1&S2
Unit 35: Professional Engineering Management	C	15	5	S1&S2
Unit 36: Advanced Mechanical Principles	O	15	5	S1&S2
Unit 39: Further Mathematics	Specialist (M)	15	5	S1&S2
Unit 49: Lean Manufacturing	Specialist (M)	15	5	S1&S2
Unit 62: Heating, Ventilation and Air Conditioning*	O	15	5	S1&S2
Unit 64: Thermofluids*	O	15	5	S1&S2
*Part time study option does not include Unit 62 & Unit 64 (it is assumed that two additional level 5 units were completed during completion of HNC)				

18.4	Programme Structure: HND Electrical & Electronic Engineering			
Module Title	Core/ Option	Credits	Level	Delivery T1/T2/T3
Unit 34: Research Project	C	30	5	S1&S2
Unit 35: Professional Engineering Management	C	15	5	S1&S2
Unit 39: Further Mathematics	Specialist (M)	15	5	S1&S2
Unit 44: Industrial Power, Electronics and Storage	Specialist (M)	15	5	S1&S2
Unit 45: Industrial Systems	Specialist (M)	15	5	S1&S2
Unit 52: Further Electrical, Electronic and Digital Principles*	O	15	5	S1&S2
Unit 53: Utilisation of Electrical Power*	O	15	5	S1&S2
*Part time study option does not include Unit 52 & Unit 53 (it is assumed that two additional level 5 units were completed during completion of HNC)				

19	References used in designing the programme

BTEC Specifications for Higher National Certificates and Diplomas
LMI data (2019)
Local Employers
Student Voice

20	Indicators of quality and standards

The programme will follow the QA standards of the Grimsby Institute. The programme has been written with reference to appropriate external reference points.

QAA reviews, through the Institute will be published and any weaknesses addressed as appropriate. The Institute also undertakes a number of scheduled internal periodic and thematic reviews throughout each academic year to assure itself of the quality and standards of its provision.

External Examiners reports are received by the HE Quality department and a copy forwarded to the relevant School at the Institute. The Institute requires action plans to be created for any actions recommended as a result of student, tutor, moderator or External Examiner comments. These are reported to the Progression and Standards Committee. The Institute also monitors External Examiner reports and these are reported on through faculty self-evaluation and enhancement documents, the Institute's quality enhancement report and the Institute's External Examiner's institutional analysis report.

Annual course reviews (AMRs) will take place in line with the requirements of the Institute and actions planned to rectify any weaknesses and further develop the quality of the provision. These AMRs are moderated internally by the Curriculum Manager and then submitted to the HE Quality department to ensure key sources such as External Examiner reports are fully reflected upon before being published and also to reduce variability in the quality of information presented.

21	Particular support for learning

The needs of disabled learners are taken into account in the design of all learning programmes.

Students will be screened at induction to identify those with individual learning support needs. The Institute has well-established procedures in place to support all identified students through the application and assessments for the Disabled Students' Allowance to secure any specialist equipment or tuition which is required.

Students will also be invited in for advice and support through the DSA procedure.

Each student is entitled to one tutorial per semester with the programme leader to discuss individual issues relating to both modules and the programme overall.

In addition to study skills embedded in the programme, the Institute employs an Academic Achievement Coach. The Academic Achievement Coach is responsible for working with students to support them in the development of their study skill abilities and includes interventions such as support towards use of ICT, giving presentations, using formal writing and appropriate academic conventions, avoiding plagiarism, analytical and critical writing skills. Students have access to one support and also timetabled study skill workshops.

22	Methods for evaluating and improving the quality of learning

All students will have the opportunity to comment on the quality of the learning experience on each module. Staff will also be expected to complete module evaluations for each module that they deliver. This feedback must be analysed by the module leader and the results fed into the annual monitoring report, faculty self-evaluation document and subsequent year's module handbook. Programme and module leaders must give consideration to modification to improve the delivery of any module and this should be recorded in the annual monitoring report and carried forward for minor or major modifications as appropriate.

The Institute's policy requires that all teaching staff should be observed delivering learning at least annually. Teaching and learning that does not reach the minimum expected standard will result in an action plan agreed between the line manager and the member of staff.

Student satisfaction is measured by student surveys on larger courses, on the smaller courses student opinion may be gathered by other survey means. Student representatives are invited to course team meetings and additionally have the opportunity to raise items with the course leader at individual meetings outside the course team.

Further, The Institute facilitates the UCG Student Senate, which consists of student representatives from each HE department. The Senate meets on a monthly basis and their remit is to:

- Consider matters relating to the student experience within Higher Education.
- Enhance the Student Voice within the Institute's Higher Education strategic and operational agenda.
- Provide feedback on areas of good practice.
- Put forward suggestions of the development of Institutional policy and strategy.
- Enhance the student learning experience by promoting academic and research events and cultural events in UCG.
- Increase student engagement in all aspects of Higher Education quality processes.

23	Identify any ethical issues that relate to this programme's teaching and assessment

Equality and fairness are central to the Institutes policies. We promote equality and diversity and treat everyone with equal dignity and worth, while also raising aspirations and supporting achievement. In addition, students with and without disabilities are offered learning opportunities that are equally accessible to them, by means of inclusive study design.

Our Student Support Team ensure all barriers are identified and addressed in order to have equal access to learning. This could take the form of bursary support, travel and meal vouchers, signposted to medical, welfare and social support and SEND assessments and personal learning plans. Adjustments are made with physical and learning impairments. Recruitment of learners is an open and rigorous process, which ensures fairness and equality.

24	Is the Work Based or Work Related?	N/A

25	How are WBL/WRL opportunities managed, monitored and reviewed, and what particular arrangements are there for student support

Work placements are not a requirement in order to undertake and achieve on a HNC or HND programme in Engineering, however, if a placement can be gained, this would be a useful addition to what is covered on the programme to be able to put what has been learned into practice.

26	Resources Supplied to the Student

Specialised, qualified tutors
Programme and module handbooks where required
Online access to Windows 365 suite
Learning Resource Centre with HE only learning area
PCs / printing always available
1:1 LRC support sessions
An area Success Coach
Engineering workshops
Engineering laboratories

27	Resources needed to pass the programme

Writing materials
Scientific Calculator

Optional – own laptop/tablet

28	Revision History

Version	Details of major modification	Date of approval
1		
2		
3		
4		
5		