Bournemouth University

KEY PROGRAMME INFORMATION

Originating institution(s) Bournemouth University	**Faculty responsible for the programme** Faculty of Science and Technology
Final award(s), title(s) and credits BSc (Hons) Product Design – 120 (60 ECTS) Level 4 / 120 (60 ECTS) Level 5 / 120 (60 ECTS) Level 6 credits	
Intermediate award(s), title(s) and credits Dip HE Product Design – 120 (60 ECTS) Level 4 / 120 (60 ECTS) Level 5 credits Cert HE Design – 120 (60 ECTS) Level 4 credits	
UCAS Programme Code(s) (where applicable and if known) H101	**HECoS (Higher Education Classification of Subjects) Code and balanced or major/minor load** 100050 (100%)
External reference points UK Quality Code for Higher Education; Part A: Part A: Setting and Maintaining Academic Standards; Chapter A1: UK and European reference points for academic standards (October 2013) - incorporates the Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies (Qualification Frameworks), Foundation Degree qualification benchmark, Master's Degree Characteristics and Subject Benchmark Statements; Subject benchmark statements – Art and Design (2016); Subject benchmark statements - Engineering (2015); Subject benchmark statements - Business and Management (2015); Product Design Specific Learning Outcomes for Accredited Degree Programmes from the Institution of Engineering Designers.	
Professional, Statutory and Regulatory Body (PSRB) links Accreditation by the Institution of Engineering Designers to fully meet the requirements for Registered Product Designer (RProdDes) registration will be sought in 2019.	
Places of delivery Bournemouth University, Talbot Campus	
Mode(s) of delivery Full-time/Full-time sandwich	**Language of delivery** English
Typical duration Programme duration: 3 years full-time / 4 years full-time sandwich Level 4: 1 year Level 5: 1 year Optional sandwich placement: 1 year Level 6: 1 year	
Date of first intake September 2019	**Expected start dates** September
Maximum student numbers Not applicable	**Placements** Optional sandwich placement in industry between level 5 and 6 (30 weeks minimum). Students are expected to search for suitable placement opportunities, with the support of the Faculty placements team.
Partner(s) Not applicable	**Partnership model** Not applicable
Date of this Programme Specification March 2022	
Version number Version 1.3-0923	

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PROGRAMME STRUCTURE

| Programme Award and Title: BSc (Hons) Product Design | | | | | | | |

Year 1/Level 4
Students are required to complete all 6 core units

Unit Name	Core/ Option	No of credits	Assessment Element Weightings			Expected contact hours per unit	Unit version no.	HECoS Code (plus balanced or major/minor load)
			Exam 1	Cwk 1	Cwk 2			
Team Project	Core	20		100		50	v1.2	100050
Design Communication	Core	20		100		50	v1.2	100048 (major) 100632 (minor)
Materials and Technology A	Core	20	80	20		50	v1.3	100203 (balanced) 100184 (balanced)
Materials and Technology B	Core	20	80	20		50	v1.3	100203 (balanced) 100184 (balanced)
Design Projects 1	Core	20		Pass/ Fail	100	50	v1.2	100058
Design Studies 1	Core	20		50	50	40	v1.2	100048
Progression requirements: Requires 120 credits at Level 4 **Exit qualification:** Cert HE Design (requires 120 credits at Level 4)								

Year 2/Level 5
Students are required to complete all 6 core units

Unit Name	Core/ Option	No of credits	Assessment Element Weightings			Expected contact hours per unit	Unit version no.	HECoS Code (plus balanced or major/minor load)
			Exam 1	Cwk 1	Cwk 2			
Manufacturing and Technology	Core	20	50	50		40	v1.2	100184 (balanced) 100209 (balanced)
Product Design Tools	Core	20		50	50	40	v1.2	100048
Product Design Projects 2A	Core	20		Pass/ Fail	100	50	v1.2	100050
Product Design Projects 2B	Core	20		100		50	v1.2	100050
Management and Commercialisation	Core	20		100		40	v1.2	101221
Design Studies 2	Core	20		50	50	40	v1.2	100048

Progression requirements: Requires 120 credits at Level 5
Exit qualification: Dip HE Product Design (requires 120 credits at Level 4 and 120 credits at Level 5)

Year 3/Level P - Optional placement year in industry/business
The optional sandwich placement is taken between levels 5 and 6.

Progression requirements: Satisfactory completion of a minimum 30-week placement in industry/business. Students who do not choose to undertake the optional sandwich placement may progress directly from Level 5 to Level 6.

Year 3 or 4/Level 6
Students are required to complete all 4 core units

Unit Name	Core/ Option	No of credits	Assessment Element Weightings			Expected contact hours per unit	Unit version no.	HECoS Code (plus balanced or major/minor load)
			Exam 1	Cwk 1	Cwk 2			
Technological Studies	Core	20	100			40	v2.2	100184 (balanced) 100163 (balanced)
Business Development	Core	20		100		36	v2.1	101221
Product Design Projects 3	Core	60		100		60	v2.2	100050
Product Design Prototypes	Core	20		100		150	v2.2	100050
Exit qualification: BSc (Hons) Product Design **Sandwich UG award:** Requires 120 credits at Level 4, 120 credits at Level 5, 120 credits at Level 6 and successful completion of a placement year. **Full-time UG award:** Requires 120 credits at Level 4, 120 credits at Level 5 and 120 credits at Level 6.								

AIMS OF THE DOCUMENT

The aims of this document are to:

- define the structure of the programme;
- specify the programme award titles;
- identify programme and level learning outcomes;
- articulate the regulations governing the awards defined within the document.

AIMS OF THE PROGRAMME

This programme aims to develop creative, innovative and resourceful graduates, who:

- have a balanced educational experience that encompasses the appropriate integration of design processes, technology, materials, production techniques, aesthetics, ergonomics, design methods, computer tools, professional practice and prototype manufacture in the industrial aspects of product design.

- have creativity, analytical ability, knowledge, understanding, and the broad based skills necessary to practice design of industrially manufactured products.

- can evaluate solutions to design problems against conflicting constraints and challenge conventional solutions

- can demonstrate complex visual literacy and have an ability to synthesise a broad range of design aspects.

Products are sophisticated solutions to complex and diverse problems, not just a novel idea or elaborate solution. The designer must arrive at a product that is a considered compromise between many different and varied fields of study that at times results in conflicting constraints. The ability to think both laterally and logically, in both artistic and scientific domains is crucial in order to satisfy aesthetic, ergonomic, technological, manufacturing, standards and economic criteria.

Design is the result of a considerable amount of unseen concurrent effort by multi-disciplinary design teams. Product designers are the product champions and design team leaders directing the product development process. Product Design is a difficult process which requires dedication, commitment and attention to both "the big picture" and details.

In addition to the need for a broad basic knowledge and the ability to communicate in a wide range of disciplines, is the recognition that designers must be able to think both creatively and analytically. For example, arriving at a detailed technical answer is the result of a clear and uncluttered analytical approach. However, generating an appropriate visual image requires a creative approach. This programme will develop both analytical and creative abilities.

The designer has to be realistic. To develop a sense of design realism means designing the whole product to answer the essential problem. For many students, the production of a working prototype is an essential part of the educational process required to produce realistic designers. The course therefore develops the practical skills of designers who learn real lessons about design by producing working prototype of their solutions.

Well-developed hand/eye/mind co-ordination, spatial awareness and manual sketching techniques are essential in design practice. Designers need to be able to develop and communicate their ideas rapidly and effectively. Discussion and debate are crucial elements of the product development process so written and oral presentation are also important.

Whilst they cannot replace manual techniques, it is important that a Product Designer gains experience in using CAD systems ranging from 2D drafting, to 3D solid modelling, to sophisticated analysis tools. It is an intention to educate designers who are able to utilise CAD technology appropriately and effectively to assist in the design of a product.

The key academic elements of research, understanding, analysis, assimilation, creativity, development and presentation are implicit within the process of product design making this course a highly suitable area of study for a first degree.

Essentially, this programme covers a very broad area of study preparing students for careers and continuing personal development in the field of Product Design.

ALIGNMENT WITH THE UNIVERSITY'S STRATEGIC PLAN

The BSc (Hons) Product Design programme is informed by and aligned with Bournemouth University's 2012-18 strategic plan and the fusion of excellent teaching, world-class research and professional practice that is at the heart of the institution's visions and values. Students are supported by academics with a wealth of industry experience, many of whom are actively engaged with national professional institutions. Academics delivering the programme are actively engaged in cutting edge research and consultancy projects, while students are encouraged to participate in a range of co-creation and co-publication projects. The programme's innovative pedagogic approach offers students the opportunity to learn by engaging in a series of practical, industry focused projects. These projects are aimed at equipping students with the full range of skills necessary to succeed in an innovative design environment, and are informed by the academic team's own industrial experience as well as by a network of industry contacts, who may also contribute directly to the programme by delivering guest lectures and providing opportunities for industrial visits.

LEARNING HOURS AND ASSESSMENT

Bournemouth University taught programmes are composed of units of study, which are assigned a credit value indicating the amount of learning undertaken. The minimum credit value of a unit is normally 20 credits, above which credit values normally increase at 20-point intervals. 20 credits is the equivalent of 200 study hours required of the student, including lectures, seminars, assessment and independent study. 20 University credits are equivalent to 10 European Credit Transfer System (ECTS) credits.

The assessment workload for a unit should consider the total time devoted to study, including the assessment workload (i.e. formative and summative assessment) and the taught elements and independent study workload (i.e. lectures, seminars, preparatory work, practical activities, reading, critical reflection).

Assessment per 20 credit unit should normally consist of 3,000 words or equivalent. Dissertations and Level 6 and 7 Final Projects are distinct from other assessment types. The word count for these assignments is 5,000 words per 20 credits, recognising that undertaking an in-depth piece of original research as the capstone to a degree is pedagogically sound.

STAFF DELIVERING THE PROGRAMME

Students will usually be taught by a combination of senior academic staff with others who have relevant expertise including – where appropriate according to the content of the unit – academic staff, qualified professional practitioners, demonstrators/technicians and research students.

INTENDED LEARNING OUTCOMES – AND HOW THE PROGRAMME ENABLES STUDENTS TO ACHIEVE AND DEMONSTRATE THE INTENDED LEARNING OUTCOMES

PROGRAMME INTENDED OUTCOMES

A: Knowledge and understanding This programme provides opportunities for students to develop and demonstrate knowledge and understanding of*:*	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:
A1 the design process at a professional level; **A2** basic science, mathematics and technology and a well-developed ability to apply them appropriately to Product Design; **A3** selecting, testing and making appropriate use of materials, processes and manufacturing techniques; **A4** industry-standard solid modelling software package and an awareness of other appropriate software tools; **A5** basic Visual, Psychology, Ergonomic Design Issues and an ability to apply them appropriately to Product Design; **A6** the skills required to be prepared for continuing personal & professional development;	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • independent research (for project) (A1, A3, A5-A8); • lectures (A1-A8); • seminars (A1–A8); • practical tutorials (A2-A4); • directed reading (A1, A8); • use of the VLE (A1-A8).
A7 the broad education necessary to understand the impact of Design solutions in a global and societal context, and an awareness of relevant contemporary issues; **A8** business situations with respect to strengths and weaknesses, opportunities and threats and develop ways and means to counteract or exploit such aspects.	Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (A1-A8); • examinations and in-class tests (A2, A7, A1); • coursework (A1–A8).
B: Intellectual skills This programme provides opportunities for students to:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:
B1 be creative and innovative in solving problems; **B2** generate ideas, concepts, proposals, solutions or arguments; **B3** analyse problems logically to arrive at suitable solutions; **B4** work independently and/or collaboratively in response to set briefs and/or as self-initiated activity; **B5** take a holistic approach, applying professional judgments, balancing costs, benefits, safety, quality, reliability, appearance and environmental impact;	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • independent research (for project) (B1- B8); • group exercises (B1-B8); • practical tutorials (B1-B8); • use of the VLE (B1-B8).

B6 focus on a sound theoretical approach in enabling the introduction of new and advancing technology while criticising and justify aesthetic and ergonomic attributes of a designed product; **B7** evaluate designs, processes and products, and suggest improvements; **B8** undertake research and analysis of information from a variety of sources.	Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (B1-B8); • coursework (B1–B8).
C: Practical skills This programme provides opportunities for students to:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:
C1 produce high quality prototypes which, as closely as possible, look like, feel like and work in the same way as a manufactured item; **C2** use a wide range of tools, techniques and equipment, including appropriate software and rapid prototyping techniques; **C3** employ appropriate materials, media, techniques, methods, technologies and tools with skill and imagination whilst observing good working practices;	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (C1-C4); • practical tutorials (C1-C4); • seminars (C1-C4); • use of the VLE (C1-C4).
C4 undertake laboratory works, test rigs, use laboratory and workshop equipment to generate valuable data.	Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (C1-C4); • coursework (C1–C4).
D: Transferable skills This programme provides opportunities for students to:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:
D1 source, navigate, select, retrieve, evaluate, manipulate and manage information from a variety of sources; **D2** select and employ communication and information technologies; **D3** articulate ideas and information comprehensibly in visual, oral and written forms; **D4** present ideas in a range of situations; **D5** interact effectively with others, for example through collaboration, collective endeavour and negotiation; **D6** analyse information and experiences, formulate independent judgments; **D7** articulate reasoned arguments through reflection, review and evaluation;	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (D1-D13); • practical tutorials (D2); • seminars (D1-D12); • group exercises (D1, D2, D3, D4, D5, D6, D9, D11); • use of the VLE (D1 – D13). Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

D8 formulate reasoned responses to the critical judgments of others;	• individual projects (D1-D13);
D9 identify personal strengths and needs;	• coursework (D1–D13).
D10 study independently, set goals, manage their own workloads and meet deadlines;	
D11 develop independence of mind, with intellectual integrity, particularly in respect of ethical issues;	
D12 become enthusiastic, in the application of their knowledge and understanding and skills;	
D13 develop an enquiring mind, eager for new knowledge and understanding.	

LEVEL 5/DipHE INTENDED LEVEL OUTCOMES

A: Knowledge and understanding This level provides opportunities for students to develop and demonstrate knowledge and understanding of:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
A1 the Design Process and Design Methods and their value in the product development process; **A2** less common materials and associated manufacturing processes and an understanding of how to design components and assemblies to suit appropriate production Processes; **A3** prototyping techniques;	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (A1- A7); • seminars (A1 – A7); • use of the VLE (A1-A7).
A4 applying technical principles to design problems and an understanding of how some advanced products function; **A5** appropriate Visual, Psychological, Ergonomic and Social issues and their impact upon Product Design; **A6** how Visualisation techniques may be applied during the process of design; **A7** industry-standard modelling software tools.	Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • examinations and on-line assessments (A2, A4); • coursework (A1 – A7).
B: Intellectual skills This level provides opportunities for students to:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
B1 use creativity, innovation and analysis in solving problems; **B2** generate ideas, concepts, proposals and solutions; **B3** use analytical understanding to assist in generating and judging ideas;	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (B1 – B5); • seminars (B1 – B5); • use of the VLE (B1 – B5).

B4 work effectively using their own initiative and as part of a group; **B5** use a holistic and balanced approach to design tasks.	Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • examinations and on-line tests (B3); • coursework (B1 - B5).
C: Practical skills This level provides opportunities for students to:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
C1 produce prototypes that demonstrate the function, manufacture, visual and ergonomic aspects of their designs; **C2** use a wide and varied range of workshop tools, techniques and equipment;	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • coursework (C1-C5).
C3 employ various materials, media, techniques, methods, technologies and tools whilst observing good working practices; **C4** use practical test rigs to test ideas and prototypes to evaluate their solutions; **C5** use advanced 3D computerised modelling techniques to aid their design process.	Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • coursework (C1-C5); • practical exercises (C1-C4).
D: Transferable skills This level provides opportunities for students to:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
D1 undertake research, evaluate and summarise information from a wide variety of sources; **D2** use appropriate computer software; **D3** select and employ communication and information technologies;	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • seminars (D1- D14); • use of the VLE (D1 – D14);
D4 present visual work in a wide variety of different ways; **D5** communicate ideas in oral and written forms; **D6** present ideas and work in a professional manner effectively to different audiences; **D7** work effectively with others in a group situation; **D8** clearly explain the reasons and judgments that informed their decisions; **D9** be constructive and supportive in criticising the work of others;	Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • coursework (D1 – D14).

D10 listen to, evaluate and respond to criticism of their own work;	
D11 plan their own time effectively, set priorities and meet deadlines;	
D12 develop a committed awareness of the need for academic study;	
D13 enjoy developing and applying their knowledge, understanding and skills;	
D14 develop a clear awareness and personal interest in professional development.	

LEVEL 4/Cert HE INTENDED LEVEL OUTCOMES

A: Knowledge and understanding This level provides opportunities for students to develop and demonstrate knowledge and understanding of:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
A1 the Design Process, some basic Design Methods and their usefulness and importance to the product Designer; **A2** a basic ability in the use of development, communication and presentation tools; **A3** Visual, Ergonomic, Product Psychology and physiology issues and their effect upon design; **A4** some basic mathematical, Technological and Scientific principles and their application to Product Design problems; **A5** the basic structure of materials and how these affect their properties and a broad knowledge and understanding of general Workshop Theory and Practice; **A6** basic materials and production Processes and an understanding of how to design simple components to suit some production processes; **A7** an industry-standard 2D drafting package and a 3D modelling package.	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (A1- A7); • seminars (A1 – A7); • use of the VLE (A1-A7). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • in-class tests (A3-A6); • coursework (A1 – A7).
B: Intellectual skills This level provides opportunities for students to:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
B1 be creative and innovative in solving problems; **B2** generate ideas, proposals and solutions for simple product ideas; **B3** analyse problems logically to arrive at suitable solutions; **B4** work alone or in teams;	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (B1, B7); • seminars (B1 – B7);

B5 use time planning techniques to organise their own time;	• use of the VLE (B1 – B7).
B6 be aware of the need for a holistic and balanced approach to design tasks; **B7** apply basic analytical and creative techniques to design problems.	Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • coursework (B1 – B7).
C: Practical skills This level provides opportunities for students to:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
C1 produce simple prototypes that function reasonably well and portray an appropriate visual image of simple products; **C2** develop and communicate their ideas using manual techniques; **C3** produce clear effective engineering drawings to the appropriate standard;	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (C1 – C4); • coursework (C1 – C6); • group exercises (C1-C6).
C4 use various workshop tools, techniques and equipment; **C5** undertake practical test rigs to test ideas; **C6** use 2D-computer drafting and 3D Computer modelling packages.	Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • coursework (C1-C6).
D: Transferable skills This level provides opportunities for students to:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
D1 research and utilise information from both manual and digital sources; **D2** use basic office software on a PC efficiently and accurately; **D3** present visual work in a variety of different ways; **D4** communicate ideas in oral and written forms; **D5** present ideas and work to an audience;	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (D1, D9); • seminars (D1- D12); • use of the VLE (D1 – D12).
D6 work in a group situation; **D7** justify decisions based upon reasonable analysis, evaluation and consideration; **D8** develop the ability to take and give constructive criticism; **D9** plan their own time and meet deadlines **D10** to develop an awareness of the need for academic study; **D11** enjoy developing their knowledge, understanding and skills;	Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • coursework (D1 – D12).

D12 develop awareness and personal interest in professional development.	

ADMISSION REGULATIONS

The regulations for this programme are the University's Standard Undergraduate Admission Regulations (https://intranetsp.bournemouth.ac.uk/pandptest/3a-undergraduate-admissions-regulations.pdf).

ASSESSMENT REGULATIONS

The regulations for this programme are the University's Standard Undergraduate Assessment Regulations with the following exceptions:

COMPENSATION (Section 7)
Compensation may only be applied for up to 20 credits across all levels of the programme.

PLACEMENT ELEMENT

This programme offers students, under the guidance of the Placement Tutor and the Placement Coordinator, the opportunity to complete a sandwich year with a minimum 30 week placement before level 6.

Successful completion of the 30 week placement is optional. The placement is assessed on a pass/fail basis using a 3000 word reflective report. The 30 week sandwich placement must be completed between levels 5 and 6 and is a requirement for progression to level 6 for the successful completion of the sandwich mode award.

Placement draws on some or all of the units studied on the first two levels of the programme. It provides the opportunity for the student to develop their abilities and understanding of product design and related subjects, as well as providing a platform for successful entry into the profession following graduation. It applies and develops understanding and skills acquired in Levels 4 and 5, makes a major contribution to the understanding of the final level units, further develops final projects by utilising the context of the work experience as appropriate and enhances students' prospects of future employment.

http://intranetsp.bournemouth.ac.uk/pandptest/4k-placements-policy-and-procedure.pdf

Programme Skills Matrix

Units		A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6	B7	B8	C1	C2	C3	C4	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13
LEVEL 6	Product Design Prototypes			x						x		x		x		x	x	x	x	x	x	x			x							x	x	x
	Business Development								x					x			x															x	x	x
	Product Design Projects 3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Technological Studies		x									x			x																	x	x	x
LEVEL 5	Manufacturing and Technology		x									x												x							x	x	x	x
	Design Studies 2			x																		x		x							x	x	x	x
	Management and Commercialisation							x			x			x								x		x							x	x	x	x
	Product Design Tools				x																			x							x	x	x	x
	Product Design Projects 2A	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Product Design Projects 2B	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
LEVEL 4	Materials and Technology A		x	x								x										x		x							x	x	x	x
	Materials and Technology B		x	x								x										x		x							x	x	x	x
	Design Communication			x																				x							x	x	x	x
	Design Studies 1				x											x	x					x									x	x	x	x
	Design Project 1	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Team Project	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

A – Subject Knowledge and Understanding
This programme provides opportunities for students to develop and demonstrate knowledge and understanding of:

1. the design process at a professional level;
2. basic science, mathematics and technology and a well-developed ability to apply them appropriately to Product Design;
3. selecting, testing and making appropriate use of materials, processes and manufacturing techniques;
4. industry-standard solid modelling software package and an awareness of other appropriate software tools;
5. basic Visual, Psychology, Ergonomic Design Issues and an ability to apply them appropriately to Product Design;
6. the skills required to be prepared for continuing personal & professional development;
7. the broad education necessary to understand the impact of Design solutions in a global and societal context, and an awareness of relevant contemporary issues;

C – Subject-specific/Practical Skills
This programme provides opportunities for students to:

1. produce high quality prototypes which, as closely as possible, look like, feel like and work in the same way as a manufactured item;
2. use a wide range of tools, techniques and equipment, including appropriate software and rapid prototyping techniques;
3. employ appropriate materials, media, techniques, methods, technologies and tools with skill and imagination whilst observing good working practices;
4. undertake laboratory works, test rigs, use laboratory and workshop equipment to generate valuable data.

B – Intellectual Skills	D – Transferable Skills
8. business situations with respect to strengths and weaknesses, opportunities and threats and develop ways and means to counteract or exploit such aspects.	
B – Intellectual Skills This programme provides opportunities for students to: 1. be creative and innovative in solving problems; 2. generate ideas, concepts, proposals, solutions or arguments; 3. analyse problems logically to arrive at suitable solutions; 4. work independently and/or collaboratively in response to set briefs and/or as self-initiated activity; 5. take a holistic approach, applying professional judgments, balancing costs, benefits, safety, quality, reliability, appearance and environmental impact; 6. focus on a sound theoretical approach in enabling the introduction of new and advancing technology while criticising and justify aesthetic and ergonomic attributes of a designed product; 7. evaluate designs, processes and products, and suggest improvements; 8. undertake research and analysis of information from a variety of sources.	**D – Transferable Skills** This programme provides opportunities for students to: 1. source, navigate, select, retrieve, evaluate, manipulate and manage information from a variety of sources; 2. select and employ communication and information technologies; 3. articulate ideas and information comprehensibly in visual, oral and written forms; 4. present ideas in a range of situations; 5. interact effectively with others, for example through collaboration, collective endeavour and negotiation; 6. analyse information and experiences, formulate independent judgments; 7. articulate reasoned arguments through reflection, review and evaluation; 8. formulate reasoned responses to the critical judgments of others; 9. identify personal strengths and needs; 10. study independently, set goals, manage their own workloads and meet deadlines; 11. develop independence of mind, with intellectual integrity, particularly in respect of ethical issues; 12. become enthusiastic, in the application of their knowledge and understanding and skills; 13. develop an enquiring mind, eager for new knowledge and understanding.