

## Nottingham Trent University Course Specification

### Basic Course Information

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| 1. | Awarding Institution:                         | Nottingham Trent University                    |
| 2. | School/Campus:                                | Architecture, Design and the Built Environment |
| 3. | Final Award, Course Title and Modes of Study: | BSc (Hons) Product Design<br>SW/FT             |
| 4. | Normal Duration:                              | SW 4 Years / FT 3 Years                        |
| 5. | UCAS Code:                                    |  |

### 6. Overview and general educational aims of the course

#### BSc (Hons) Product Design

The BSc (Hons) Product Design course is operated to provide you with an integrated academic and vocational approach to all aspects of technologically functional yet aesthetic product design. The key aim of this course is to provide you with the principles and techniques necessary for developing product design and technological solutions to a range of practical problems. The course encourages a broad and diverse range of approaches to design practice which include materials science, manufacturing processes, electronics and emerging technology, project management, inclusive design, and sustainability. The course provides opportunities to develop professional design and technology skills, and to acquire a critical understanding of the roles of manufacturing technologies in product development using tools and techniques within a modern manufacturing environment. In addition to providing a broader, analytical and integrated study of technologies and strategies, the course emphasizes the importance of independent learning, collaborative team working, creative problem solving and self-organisation skills. The course meets the significant demand amongst industrial and commercial companies and consultancies for designers with knowledge and understanding of commerce and industry's expectations, the applications of advanced technology, specialised design tools and methodologies. It stresses the importance of innovation and creation through the integration of art and science [technology].

The course aims to develop students who are interested in the relationships between technology, art and design and their integrated use for product design, provide you with the necessary design methodologies and philosophies to take up a range of responsible positions within the design and related creative industries, provide transferable skills that will support your career development and your life-long learning aspirations and stress the integrating, collaborative role of the designer in a multi-disciplinary global environment. The course will help prepare you to understand and use advanced mechatronic techniques, materials and manufacturing technologies within design,

understanding the applications of their associated techniques such as alternative energy systems, smart technology applications, robotic design and use.

You will develop the ability to appreciate and create products based on sound design principles and methods, and to have developed an awareness of the ergonomic and anthropometric factors impacting upon product design as well as appreciating the wider needs of the consumer. You will also be expected to develop detailed knowledge of production technologies for manufacturing, taking into account environmental concerns, particularly material selection and the choice of sustainable resources.

The course is designed to provide you with a professional and creative approach to all aspects of Product Design. The course meets the demand in industry for creative, practical graduates. The course will give you the knowledge, skills and experience in the principles of design and allow you to develop your personal design direction and self-management abilities.

The course passes on skills and knowledge from experienced technical and academic staff and builds these into a series of varied projects which will help to develop your design and communication skills. Some of these projects will be set by outside companies which may lead to prizes, placements or sponsorship. Students have regularly received prizes in international design competitions. Our graduates have an exemplary level of employment in the design and manufacturing industry including, as sole traders, within design consultancies and within a host of household name manufacturing companies.

An exceptional aspect of the course is the placement year – an internship of a minimum of 36 weeks that takes place between the second and third years. This can be spent in various companies learning a wide variety of skills and experiencing life at the cutting edge of the design industry. There is a wide variety of placement experience available, some paid, some of voluntary in smaller but often quite prestigious companies. Several students every year find placements abroad in places such as the USA, Australia, Holland, Germany and Italy.

You will find that flexibility is built into the course through its close relationship with the product design portfolio of courses, exposing you to a diverse spectrum of specialist designers. The entire academic team work closely with you during term 1, level 4, themed 'design fundamentals', this allows you the option, after staff counselling and consultation, of transfer between the courses during the first term and it is possible transfer can take place throughout level one if it is deemed appropriate.

Course aims and Guiding Principles:

- Concentrating on the technological end of designing of products, focusing on a broad remit of products, technology and manufacturing, which can include digital products, medical products, sports products, transportation, sustainability and design for manufacture.
- Embedding core course philosophy, skills, knowledge and working practices in the first term.
- Promote NTU's Success for All agenda through Enhanced Induction & Support.
- Develop links between Theory & Practice through integrated and holistic teaching practices.
- Use of a 'soft semester' system in year 2 to aid exchange possibilities for European & International students.
- Prepare students for placement through a module of integrated projects and professional practice activity.
- Enhancing global, sustainable and professional contexts for contemporary design practice.
- Promotion of group working and collaboration.
- NTU Personalisation agenda promoted through the use of self-generated and industry driven live projects in the final year.
- Produce creative, practical and professional designers with exemplary communication skills and real-world experience, sensitive to the user/client base and the fluctuations of the mass market.
- Provide you with the necessary research and design tools to operate successfully as a designer in the 21<sup>st</sup> century.
- Provide a wide range of transferable skills that will support your career development.
- Prepare you for employment through regular contact with the design and manufacturing industry.
- Prepare you for postgraduate study and lifelong learning.

As a student on the BSc (Hons) Product Design course, you will benefit from the internationally recognized research activities undertaken by the Product Design subject area, which has been supported by grants from a variety of funding organisations including the European Union, UK Government and UK Research Councils, the Royal Society, the Arts Council, and industry. The Product Design group is regularly involved in international collaborative projects, and works closely with industry on different research and development schemes. The team also organises a number of high quality

refereed international conferences and contribute to well respected research journals across the world, and liaise with policy and membership organisations for design, including the British Design Innovation and the Design Research Society.

## 7. Course outcomes

Course outcomes describe what you should know and be able to do by the end of your course if you take advantage of the opportunities for learning that we provide.

### **Knowledge and understanding**

By the end of the course you should be able to:

- Demonstrate your ability to research from a wide variety of sources, navigate and manage relevant source materials and analyse information and experiences in order to acquire insights and formulate reasoned arguments.
- Reflect on your own practice and the critical judgements of others in order to recognise your own personal strengths and needs and bring about continuous improvement to your practice through structured evaluation in order to support your ongoing professional development.
- Demonstrate an informed awareness of current professional product design practice, understand the significance of the work of other practitioners and the impact that new and emerging technology plays within the discipline.
- Explore and operate within the contexts of product design and demonstrate a holistic view of the design process encompassing understanding and application of marketing, aesthetics, ergonomics, manufacturing, materials, commercial and technical aspects.
- Recognise and adhere to the professional values expected of practicing designers and demonstrate compliance with relevant codes of conduct, management and application of safe systems of working and consideration of sustainable and ethical design methodologies.
- Utilise the potential of ideas and creative thinking in order to innovate new products encompassing the whole of the design process from initial brief to manufacture of production prototypes
- Develop ideas through to outcomes that confirm your ability select the use of appropriate materials, processes, systems and technology.
- Identify intellectual property issues around your own work, and those of others, in order to safeguard the innovation and commercialisation of your own creative endeavour.

### **Skills, qualities and attributes**

By the end of the course you should be able to:

- Use a range of creative and scientific design methods and utilise analytical and creative thought processes to demonstrate your ability to evaluate complex design solutions against conflicting constraints.

- Evidence your ability to generate ideas independently and negotiate the inhibitors of creative thinking in response to design briefs.
- Demonstrate your ability to observe, investigate, enquire and gain insight through the making of connections between intention, process, outcome, context and methods of communication.
- Demonstrate your ability to explore and prove innovative solutions for complex design problems utilising an effective range of simulation tools and prototyping techniques including Computer Aided Design (CAD).
- Evidence your ability to present and discuss product design briefs, specifications and concept design proposals appropriately with relevant audiences; clients, consumers, and other stakeholders in the development process.
- Demonstrate competence in interpersonal, social and negotiation skills required in order to successfully practice within the Product Design, technology and manufacturing industries.
- Demonstrate self-management and team leadership skills in order to meet changing technical and managerial needs in the process of developing medium to high complexity projects while successfully managing workloads, budgets, personnel and their development needs.

## **8. Teaching and Learning Methods**

A learning and teaching framework has evolved within the Product Design courses within the School over a number of years. Via regular summative and formative feedback, review and reflection, best practices have been incorporated into the teaching and learning across all modules. This framework enables collaborative working, consultation and presentations between all students studying at undergraduate level within the subject area.

The learning and teaching strategies are designed to develop independent learning and research skills. Taught modules will be centred on lectures supported by seminars, workshops (following induction) and tutorials. A range of assessment and presentation methods are employed, and where possible or relevant are complimentary to other modules and projects.

### **The Product Design Community**

The Product Design Subject Area places a great deal of importance on the development of a strong student design community, based around the utilization of studio based learning, one which aids supportive, peer-to-peer learning and helps to set work in a professional context. The design community is further supported through the provision of high quality workshop resources and expert technical support available to all students. Product Design at NTU is open to a wide breadth of creative approaches, this enables you to explore and experiment with new methodologies, styles and techniques

and develop your practice in a nurturing environment. The range of approaches to developing the design community includes:

- Structured Induction Events
- Collaborative Working
- Studio Working
- Established Student Support (Language & Student support services)
- Workshop Mentorship
- Staff student liaison meetings (once per term)
- Group tutorial system

Learning and teaching methods will comprise lectures to introduce and develop concepts and to explore the application of these concepts; studio working, workshops and laboratories to develop skills and appreciate concepts; seminars and tutorials to provide academic support; case study and project work to develop a deeper understanding of concepts and applications; and project presentations by students to develop confidence and identity in professional practice.

Teaching materials will be available to support the learning process utilising new technologies for blended and e-learning where applicable. Such teaching materials will typically comprise written information, recommended reading, tutorial questions, self-assessment tests and computer based learning and teaching instructions. It is a normal practice of the School to invite external professional staff to contribute to learning material and to give lectures or run workshops. The Web and the University's own NOW system will also be used for communication between students and staff.

Modules are designed to expand student's awareness and understanding of Product Design while developing a wider appreciation of design's role within modern society, and the impact of new thinking in business on the design industry. The courses will promote intellectual curiosity and the development of designers as multi-faceted professionals, confident in interdisciplinary practice. The course also focuses on the needs of future professional design practice and work to promote the understanding of both local and international business and support entrepreneurial approaches to developing products and services, and the development of strategic design for business success.

## **9. Assessment Methods**

The course uses a variety of methods of assessment to ensure that you can demonstrate the range of learning outcomes and these are tested through a series of coursework submissions. Assessment will take place at the conclusion of each module or element.

Assessment throughout the courses is based on the submission of coursework. Tasks and briefs, often multiple, are set within modules and structured to enable students to address the course learning outcomes, ensuring that assessment is directed towards the achievement of those outcomes and are discipline specific. Assessment methods are selected such that they are the most effective in enabling students to demonstrate achievement of outcomes. All module learning outcomes are aligned to assessment and grading criteria that describe the level of learning being achieved against each learning outcome. Individual modules create learning opportunities which encourage, reinforce and enhance students' learning processes, developing their ability to think, evaluate, create, make judgements, communicate and act. The courses use a variety of assessment techniques so that a team of academic assessors may evaluate the quality of your output for the modules and elements; evidenced by project development work and outcomes. These assessments are derived from the following forms of evaluation:

- Presentations: Oral, Audio/Visual
- Reports and reflective journals
- Reviews of design development work and models/prototypes (realised in 2D, 3D or 4D formats)
- Exhibitions of work/project outcomes
- Portfolio Reviews
- Project Thesis or Dissertation

All modules on BSc (Hons) Product Design are assessed through 100% course work.

In order that student work is appropriately judged and marked consistently, assessments are panel marked (typically by 2-3 academic staff) for presentations, reviews of design development work and assessment of exhibitions or sample marked and checked ('moderated and verified') by other academic colleagues for the reading of reports, journals and thesis/dissertations.

The ethos of combining theory and practice is strongly reflected in the nature of assessments. All, are coursework based, requiring students to undertake practical work together with research and critical evaluation in order to demonstrate the link between theory and practise.

You will receive regular verbal and written feedback about the progress you are making at each tutorial through discussion with staff and peers and via completion of tutorial record forms. You will also receive feedback from staff and students during presentations, workshops and seminars. At the end of each module you will receive written feedback supported by tutorial contact where you can discuss the outcomes of the assessment in more detail.

## 10. Course structure and curriculum

The course is one of three that make up the Product Design suite of courses, namely;

1. BA (Honours) Furniture and Product Design
2. BA (Honours) Product Design
3. BSc (Honours) Product Design

Although all students study 'Product Design' the courses are distinctly different in their approach to the subject, their aim and their objectives. You will study common modules at Year 1 (level 4) on the Design Fundamentals module (40 Credits), Year 2 (level 5) on the Professional Practice module (60 Credits) and during the Final Year (level 6) on both the Design in Practice (80 Credits) and Design in Context (40 Credits) modules. All other modules at each level are course specific.

The course is studied on either a sandwich (normal route) or full-time basis. In the case of the sandwich route the first two years of theory and simulated practice are consolidated by a year of industrial experience.

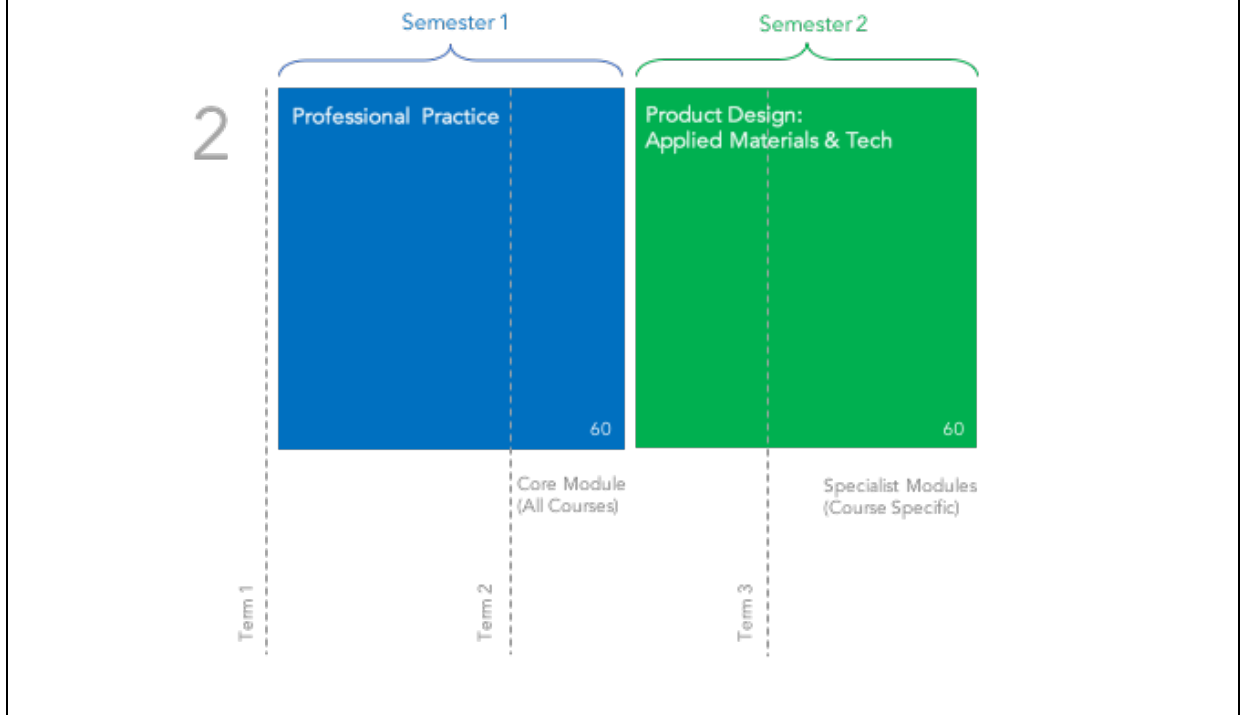
We offer a wide variety of projects during years 1 and 2. These include 'live projects' i.e. those provided by industry, design competitions and short projects.

The year 1 (level 4) modules are designed to give you the knowledge, skills and experience of the principles of the design process. Product Design focuses on consumers, the market, technology and systems. You will study a wide range of design related issues covering all aspects of product design. You will develop knowledge and comprehension of the historic, contemporary and future influences on product design in order to promote imagination and creativity in the solving of problems and the development of designed outcomes. Through a range of diverse and stimulating projects you will explore many aspects of product design from the understanding of user needs through to those of materials and new technologies. You will also be introduced to and develop a range of key communication skills utilising a range of media and methods from drawing and model making through to the creation and manipulation of digital information to support your work.

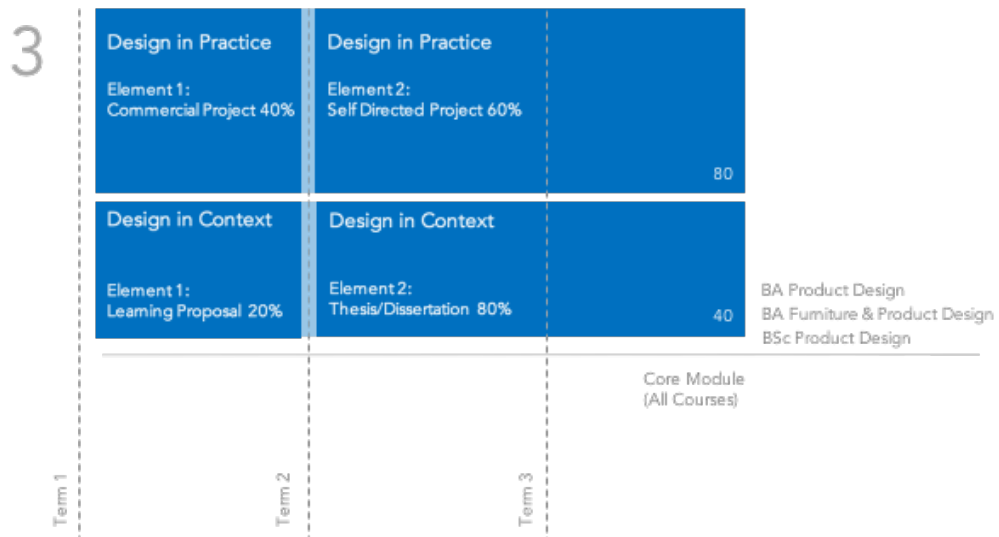




Year 2 (level 5) modules build on the experience of year 1 (level 4) and consist of a series of varied product design-related projects in preparation for professional practice. Projects are often set by the design industry and focus on the changing commercial and cultural demands within the design community. You will also take part in contemporary design competitions which will stretch your creative abilities and further develop your wide range of skills. You will also form a solid grounding in design principles, culture & philosophy. By the end of year 2 (level 5) you will have produced a high quality portfolio of work. This will prove invaluable in securing a placement in industry.



The final year of the course (level 6) marks the culmination of the course, you will develop a detailed learning proposal for the year, negotiated with tutors, which will allow you to investigate, explore and develop projects of a personal and professional interest to you. The final year will mark the synthesis of all information, skills and learned wisdom from previous years and will help you develop your work and personal stance on contemporary design.



**C** = a core module

#### **Year 1 (Level 4)**

Design Fundamentals (40 Credit Points) - C

The Developing Design Technologist (40 Credit Points) – C

Applied Design Technology (40 Credit Points) – C

#### **Year 2 (Level 5)**

Professional Practice (60 Credit Points) - C

Product Design: Applied materials and Technology (60 Credit Points) - C

#### **Year 3 – Industrial Experience Work Placement**

##### **Diploma/Certificate of Professional Practice**

Working in conjunction with the work placement office, you are assisted in identifying appropriate work placement opportunities (in design or design related industries) which are then secured through a process of application and competitive interview. In order to qualify for the Diploma of Professional Practice you will normally have:

- Completed 36 weeks (minimum requirement) of Professional Practice Placement with an approved organisation.
- Received a satisfactory report from the employer.

- Successfully completed the Professional Practice submission requirements.

A Certificate in Professional Practice is available for the successful completion of shorter periods of placement work experience (a minimum of 10 weeks).

*NOTE: A Sandwich award will not be conferred with a Certificate in Professional Practice*

Further information regarding the placement learning framework can be found by visiting the Placement Information area of the NOW Workspace.

### **Year 3 / 4 (Level 6)**

Design in Practice 3 (80 Credit Points) - C

Design in Context (40 Credit Points) – C

## **11. Admission to the course**

### **Entry requirements**

For current information regarding all entry requirements for this course, please see the 'Applying' tab on the course information web page.

## **12. Support for Learning**

The School is committed to assisting you in achieving the best results possible during your studies, providing you with a wide range of academic support and advice.

A comprehensive learner support system is adopted by the course, which also can include input from the University and student union, tailored to meet your needs.

The School is keen that all students, irrespective of background and characteristics such as age and nationality, have equal opportunities to succeed with their studies.

There is a section in NOW for students within the school to access materials to help you with your studies.

Induction courses will run at the beginning of your studies and will ensure that you are made aware of the full range of support facilities in the University as well as giving you specific information about resources, procedures and practices needed to undertake the course. These include Health and Safety, workshop practices, and library induction.

Welcome and induction activities are shared across the subject area undergraduate courses, encouraging a cross disciplinary student community.

You will receive support throughout your studies from our experienced and committed teaching and technical support staff. Staff members teaching on the course are members of professional institutions and most are active researchers, many undertaking industrial consultancy.

The Course Leader is responsible for the day-to-day operation of the course, with Module Leaders in charge of the separate module learning activities and assessments. Course Managers are responsible for the overview of all teaching (UG and PG) provision within the subject area and work closely with Course Leaders to ensure parity and a high level of student experience across courses. School and University Resources, including dyslexia support, counselling services and language support, are available if required. Subject specialists from careers service, and library and learning resources are also available to support you during your studies.

Project work on this course is well supported by extensive resources including the machining and manufacturing workshop, well-equipped laboratories specialising in a range of specialist areas, modern CAD/CAM facilities and product design studios for individual and group working, seminars and presentations. The HIVE business incubator unit, based at Nottingham Trent University, works closely with this course to help the graduates to facilitate the formation of their own company and complementary product solutions. The staff will help secure any intellectual property rights resulting from the course activities.

In addition to email, social, online media and the University's virtual learning environment (NOW), are used by individual module and course leaders to communicate effectively with students.

If you are an international student and English is not your first language, language support can be provided by the University where appropriate to enhance your learning experience and to improve your presentation skills. If necessary, English language classes are available from the University Language Centre. These classes form a course of English for Academic Purposes and are separate from the degree course. The University Student Support Services offer a range of general, specialist and professional support services for students.

### **13. Graduate destinations / employability**

This course has been developed to meet the needs of industry in the UK and overseas. It is specifically designed to increase the employability of its graduates in a business context by identifying new service, strategy and product opportunities, and conducting projects in collaboration with industrial partners. You will become strategically aware and technically literate, and will communicate concepts and outcomes at a graduate level in an ever-changing global market place. On completion, graduates will have acquired skills and knowledge to set up their own businesses, to work in manufacturing industries, design consultancies, and research and development organisations, or to progress to Masters level study.

The employment record of the course is very good. Many of our graduates are working in the product design industry as practitioners and designers. Other career paths have included graduates working as design engineers, packaging designers, point of sale, retail, exhibition designers, transportation design, medical products, CAD technicians or in the graphic/web design sectors. Other career paths have included teaching (after postgraduate study), marketing, research and forecasting sectors.

The University Employability Service is available to all students, offering individual consultation and support.

#### **14. Course standards and quality**

There are well-established systems for managing the quality of the curriculum within the School. The course is subject to, and fully complies with, the University's requirements in respect of course standards and quality; this involves:

1. The appointment of external examiners to the course. External examiners are appointed to each course and report annually on the appropriateness of the curriculum, the quality of student work and the assessment process.
2. Monitoring of the course and the production of an annual Interim Course Report. At the end of each year the Course Leader writes an evaluative report, informed by staff and student feedback. This is then discussed by the School Academic Standards and Quality Committee and actions are identified.
3. Periodic review of the course; Periodic Course Review is the mechanism by which course teams reflect on the validity, currency, and the academic quality of the provision once every three years. This is a face-to-face discussion with external stakeholders and students, centering on key data sets provided in advance of the meeting to enable appropriate consideration of the current and future quality and standards of the course. The outcome of the review is a three-year Course Development Plan.
4. A Course Committee covering all Undergraduate courses within the department of Product Design are held three times a year, student representatives, elected by their peer group, attend and contribute to discussion.
5. Staff/Student liaison committees are held three times a year where UG student representatives are invited to attend and provide feedback on their educational experience.
6. Formal module evaluation is gathered by anonymous questionnaire at the culmination of each module.

The course is referenced to the QAA Benchmark Statements: Art & Design 2017 and informed by Institution of Engineering Designers (IED) Chartered Technological Product Designer (CTPD) Standard benchmarks

(The competence and commitment standard for Chartered Technological Product Designers)	
<b>15. Assessment regulations</b> This course is subject to the University's Common Assessment Regulations (located in its <a href="#">Quality Handbook</a> ). Any course specific assessment features are described below:	
There are no course specific exceptions from the University regulations	
<b>16. Additional Information</b>	
Collaborative partner(s):	None
Course referenced to national QAA Benchmark Statements:	Course referenced to national QAA Benchmark Statements: Art & Design 2017
Course recognised by:	Institution of Engineering Designers (IED)
Date implemented:	March 2018
Any additional information:	None