



# The Institution of Engineering Designers

## Accreditation of Product Design Educational Programmes (APDEP)



This document is one of two closely-related documents published by the IED:

1. Standard for Registration: Product Design and CAD
2. Accreditation of Product Design Education Programmes (APDEP)

It is also closely linked with standards produced by the Engineering Council and the Society for the Environment. The IED is licenced by the Engineering Council and the Society for the Environment to assess individuals for their registration grades and to assess Higher Education courses in suitable Engineering disciplines.

See Engineering Council documents:

<https://www.engc.org.uk/media/3417/uk-spec-fourth-edition.pdf>;

<https://www.engc.org.uk/media/3464/ahep-fourth-edition.pdf>;

<https://www.engc.org.uk/media/3422/defining-characteristics-and-learning-outcomes-aaqa-and-ahep.pdf>

See Society for the Environment documents:

[https://socenv.org.uk/resource/resmgr/practice\\_direction/CEnv\\_Competerences\\_06.10.20.pdf](https://socenv.org.uk/resource/resmgr/practice_direction/CEnv_Competerences_06.10.20.pdf) ;

[https://cdn.ymaws.com/socenv.org.uk/resource/resmgr/practice\\_direction/renvtech\\_competences\\_25.11.2.pdf](https://cdn.ymaws.com/socenv.org.uk/resource/resmgr/practice_direction/renvtech_competences_25.11.2.pdf)



## The Institution of Engineering Designers

The IED is governed by Royal Charter and is also a registered charity. The Royal Charter is an instrument of incorporation granted by the UK monarch. It confers independent legal personality on the Institution of Engineering Designers and defines its objectives, constitution and powers to govern its own affairs.

The By-laws are the rules by which the Institution of Engineering Designers regulates itself.

## Standard for Registration: Product Design and Computer-Aided Design (CAD)

This is the prescribed Standard that sets out the competence and commitment required for Product Design and Computer-Aided Design (CAD) professional registration: as Chartered Technological Product Designer (CTPD), Registered Product Designer (RProdDes), Registered Computer-Aided Design Manager (RCADMan) and Registered Computer-Aided Design Practitioner (RCP).

## Accreditation of Product Design Educational Programmes (APDEP)

This document sets out the prescribed Standard for the policy, context, rules and procedures for recognising learning and development programmes that help develop the competence and commitment set out in the Standard for Registration: Product Design and Computer-Aided Design (CAD).

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## Foreword

Product designers respond to the needs of both society and business, solving complex challenges. Product designers work in the art and practice of changing our world, enhancing welfare, health and safety while paying due regard to the environment.

Society places great faith in the product design profession, trusting its members to regulate themselves. By achieving and demonstrating professional competence and commitment for the purpose of registration, product designers demonstrate that they are worthy of that trust.

This document, Accreditation of Product Design Educational Programmes (APDEP), forms part of the standard used by the IED to assess the competence and commitment of individual product designers. It was developed in consultation with product designers representing the breadth of the profession: from industry and academia.

The Standard was first published by the IED in 2015 and since then has been widely used by Higher Education Institutions (HEIs) and individual academics. It has enabled the development of diverse provision, without losing sight of the required skills, knowledge and understanding that tomorrow's product designers will need.

# The purpose of Accreditation of Product Design Educational Programmes (APDEP)

This document sets out the requirements for the Accreditation of Product Design Educational Programmes.

Its primary purpose is to set out the required overall standard to be achieved by product design educational programmes if they are to be accredited by the IED. This document also:

- Explains the benefits of accreditation of educational programmes.
- Identifies what indicators are considered when judging whether a programme should be accredited.
- Sets out the learning outcomes that programmes must meet to become accredited.
- Outlines how to apply for accreditation.

A glossary of terms can be found at the end of the document, starting on page 28.

When reviewing an education programme, the IED assesses whether that programme provides some, or all, of the knowledge and understanding that underpin eventual registration in the following registration categories:

- **Registered Product Designer (RProdDes)**
- **Chartered Technological Product Designer (CTPD)**

The IED is able to offer registration for CAD professionals, either as Registered CAD Practitioners (RCP) or as Registered CAD Managers (RCADMan). The educational requirements for these two registration categories are not formally accredited by the IED.

The IED is also licenced to accredit courses under the Engineering Council's accreditation requirements for Incorporated Engineers (IEng) and Chartered Engineers (CEng), and to assess individuals for these registration grades and Engineering Technician (EngTech), and it is also licenced by the Society for the Environment to assess individuals for their Registration grades of Chartered Environmentalist (CEnv) and Registered Environmental Practitioner (REnvP).

For a full and current list of courses accredited by the IED, please see: [www.institution-engineering-designers.org.uk/Courses](http://www.institution-engineering-designers.org.uk/Courses)

## Who is this document for?

Many different groups will find this document useful. In particular:

- Higher Education Institutions (HEIs) seeking accreditation for one or more of their programmes.
- Students seeking to make informed choices about the courses they might wish to study and the direction their careers might take.
- Industrial collaborators and employers wishing to have an idea of what students and graduates from accredited courses might be capable of.

## Introduction

All product design students deserve a world-class education that develops industry-relevant skills.

Accreditation of degree programmes helps to:

- Ensure that UK product design education provides those industry relevant skills.
- Draw students towards a career in the product design profession.
- Demonstrate a consistently high standard of UK product design education.
- Provide a basis for educational institutions to review their programmes and develop excellence in delivery and content.

The criteria and process of accreditation are regularly reviewed. The levels of degree programmes that may be accredited have been referenced to ISCED (International Standard Classification of Education).

Product Designers have a crucial role to play in helping to solve the world's problems, ensuring the benefits of innovation and progress are shared equitably and do not compromise the natural environment or deplete natural resources to the detriment of future generations.

Product Design graduates need a range of skills in order to create, develop or apply new technologies within functional and usable products. This document defines these attributes through learning outcomes for each type of degree that can be accredited.

Bachelors (Honours) degrees may be accredited as fully meeting the academic requirement for RProdDes registration. The high academic standing of the Integrated Masters degrees (usually MDes, but may be MEng) is set out through higher-level learning outcomes. These may be accredited as fully meeting the academic requirements for CTPD registration.

The learning outcomes in this document may be a useful reference when assessing the knowledge and understanding of an individual who does not hold an accredited product design degree.

# Accreditation

## What is accreditation?

Accreditation of education programmes, by recognised professional and statutory bodies, is a mark of assurance that the programmes meet the standards set by the relevant profession. The accreditation process is essentially one of peer review; it is applied to individual programmes of learning, not to the department or educational institution overall. The IED sets and maintains the standard for the product design profession and sets the overall requirements for accreditation. Once a programme is accredited it usually retains accreditation for up to five years.

## The benefits of accreditation

### Benefits for individuals

#### International recognition

Accreditation is an accepted and rigorous process that commands respect.

#### Degree selection

Accreditation helps students, as well as their parents and advisers, to choose degree programmes of the standard recognised by the product design profession.

#### Employment market advantage

Accreditation confers advantage to graduates when they are seeking employment; some employers require graduation from an accredited programme as a minimum qualification.

#### Professional registration

An accredited degree will be an advantage when applying for professional registration as RProdDes or CTPD. As accreditation confirms that a degree develops underpinning knowledge and understanding, it can also be beneficial if graduates seek interim registration while they develop the competence required for a professional registration title.

### Benefits for HEIs

#### Programme assessment

Accreditation is a developmental process which gives HEIs a structured mechanism to assess, evaluate and improve the quality of their programmes. It offers the opportunity for a continuing dialogue between Licensees and HEIs, rather than placing all the emphasis on the periodic accreditation exercise.

#### QAA standard in product design

There is no specific QAA benchmark statement for product design. However, the generic benchmark statement for art and design seeks to cover topics that are covered within this accreditation document in a general fashion.



## Benefits for employers

### International recognition

Accredited qualifications may be helpful or necessary for employees to work in some jurisdictions.

### Assurance of knowledge and understanding

Accredited qualifications develop underpinning knowledge and understanding in line with requirements set by industry.

### Competitive advantage

Employing staff who hold accredited qualifications and/or registration titles can be advantageous in demonstrating to clients and regulators that employees are suitably qualified to undertake work.

## Benefits for society

### Product designers with professional levels of knowledge and understanding

Designers who hold accredited qualifications will have demonstrated the underpinning knowledge and understanding required to work to a professional standard, including awareness of ethical, environmental and societal considerations.

### Degree quality

Accreditation ensures that degree programmes meet the standard set by the product design profession.

## Programme innovation

Educational institutions are encouraged to develop innovative degree programmes in response to industry needs. The IED does not favour any particular approach to teaching, learning or assessment.

The accreditation process supports innovation in both the delivery and content of product design degrees. All education institutions are encouraged to contact the IED for advice on meeting accreditation requirements at an early stage when developing a programme. This applies to all programmes, but is particularly important when planning something new and innovative.

Innovative programmes may include a range of providers, the involvement of several departments, or a specific approach to industrial engagement, curriculum delivery or assessment practice.

## Encouraging dialogue

Educational institutions are encouraged to talk to the IED early, including to seek guidance when proposing a new programme, and to maintain dialogue up to and beyond accreditation.

The IED can advise on whether the programme is appropriate for accreditation.

## Characteristics of an accredited programme

The standard that must be met for a product design educational programme to be accredited are set out on pages 21 - 27 and are rooted in IED's Standard for Registration: Product Design and CAD.

### Learning outcomes

To achieve accreditation a programme must deliver the specified learning outcomes.

Each type of accredited degree provides a solid foundation in the principles of product design. Course topics have been integrated within the five generic product design-specific areas of learning. These are:

Design principles	About laws, rules; things that should be known
Design analysis	About design judgement and evaluation
Creativity and innovation	About novelty
Design practice	About doing design
The designer and society	About what's going on around design

The level at which the learning outcomes will be delivered is that expected from the relevant qualifications as they are described in The Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies<sup>1</sup>, published by QAA.

Accredited product design courses are either at the Bachelor with Honours level or the Masters level. The former are deemed to form the underlying qualifications for the RProdDes registration and the latter for CTPD registration.

A Foundation degree or non-honours Bachelors degree will need to be combined with further study to achieve the underlying qualification for RProdDes.

A Bachelors degree with Honours will need to be combined with further study to Masters level for CTPD registration. Doctoral degrees will normally be treated as individual qualifications when an individual applies for CTPD registration.

### Learning outcomes and competence and commitment

Accredited product design programmes develop underpinning knowledge and understanding requirements for professional registration. Therefore, the learning outcomes should be read in the context of the generic statements of competence and commitment for RProdDes and CTPD in the IED's Standard for Registration: Product Design and CAD document.

### How many learning outcomes must a graduate meet?

To be recognised as having an accredited degree, a graduate must achieve all the prescribed learning outcomes for the programme.

<sup>1</sup> <https://www.qaa.ac.uk/docs/qaa/quality-code/qualifications-frameworks.pdf>

Each type of accredited programme provides either:

- The required underpinning knowledge and understanding for specific registration titles, or;
- A defined subset of the required underpinning knowledge and understanding, with the programme accredited as being further learning towards CTPD.

A programme that is accredited for RProdDes is also automatically accredited as requiring further learning towards CTPD. While all learning outcomes in a programme must be delivered and assessed in order to achieve accreditation, the weighting of learning outcomes may be different in each programme.

### Holistic delivery

The listing of different learning outcomes within a programme does not imply a compartmentalised or linear approach to learning and teaching. Throughout each programme, different learning outcomes are likely to be delivered concurrently through, for example, project work. The process of accreditation will include an assessment of whether graduates are achieving these outcomes.

### Links to professional practice

Accredited degree programmes shall feature student engagement with relevant scholarship, research, and/or professional practice. An accreditation panel will expect to see evidence of ongoing industry involvement in programme design and delivery.

### Diversity and inclusion

Departments delivering accredited degrees are expected to promote equality, diversity and inclusion in line with applicable national regulatory frameworks, as well as embedding inclusive design within the curriculum where relevant.

### Sustainability

Sustainability of design practice is an issue of concern for the profession and HEIs are encouraged to refer to, promote and use the 17 United Nations Sustainable Development Goals in programme design and delivery<sup>2</sup>

## Qualifications that meet the underpinning knowledge and understanding requirements

The types of qualification that can meet the knowledge and understanding requirements for registration are shown in Table 1, overleaf. The learning outcomes expected from the six types of degree are shown on Table 2, on page 12. The characteristics that define accredited product design degree programmes are set out on pages 21 - 27.

Any of these programmes may be accredited for delivery in a variety of modes, including for delivery within a degree apprenticeship. Each new mode of study (including degree apprenticeships) will need to be accredited separately, in line with the regulations set out in this Standard.

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<sup>2</sup> <https://sdgs.un.org/goals>

Table 1: Qualifications that meet the knowledge and understanding requirements for Registered Product Designer and Chartered Technological Product Designer

Registered Product Designer - RProdDes	Chartered Technical Product Designer - CTPD
An accredited Bachelors or Bachelor with Honours degree in a product design subject	An accredited Integrated Masters degree in a product design subject
A Higher National Diploma or an accredited Foundation Degree in product design <b>plus</b> appropriate further learning to degree level, for example a top-up degree	An accredited Bachelors degree with Honours in product design <b>plus</b> either: <ul style="list-style-type: none"> <li>• An appropriate accredited Masters degree or Doctorate, or</li> <li>• Appropriate further learning to Masters level</li> </ul>
Qualification deemed to be equivalent by the IED	Qualification deemed to be equivalent by the IED

Table 2: The five types of degree

Qualification	ISCED Level
Foundation degrees and equivalent qualifications	5
Bachelors and Bachelors (Hons) degrees accredited as <b>fully meeting</b> the underpinning knowledge and understanding requirement for RProdDes registration	6
Integrated Masters degrees accredited as <b>fully meeting</b> the underpinning knowledge and understanding requirement for CTPD registration	7
Other Masters degrees accredited as <b>meeting</b> the <b>further learning</b> requirement for the underpinning knowledge and understanding requirement for CTPD registration	7
Doctoral programmes	8

# Application Process

## Making the application

Educational institutions seeking accreditation for their courses should first contact the IED to discuss the application and they can be guided through the whole process, including paperwork and what details and supporting documentation are needed. More than one course may be accredited by the IED at the same time, and courses may be accredited for multiple registration categories if that is appropriate.

## General procedure

The IED will make an overview of the formal application form and supporting documentation, and once it is satisfied that the programme is likely to meet the requirements for accreditation a panel will be appointed including academic and industrial members trained in, and familiar with, the principles and requirements of accreditation. There may also be a visit secretariat and there may be observers (eg trainee accreditors). The panel will scrutinise the information provided. Arrangements are made for an accreditation visit, usually held over two consecutive days, and which will normally be held at the Higher Education Institution. Other documents may be made available to the panel during this visit if they are required.

The panel will expect to meet staff and students. Where practical, the panel will wish to meet industry representatives involved in programme design and delivery, who may be members of an Industrial Advisory Board (IAB) or equivalent. Meetings may be face-to-face or use a suitable telecommunication technology or platform.

During the visit, the panel will expect to see laboratories, workshops and other teaching spaces and be provided with examples of the full range of marked student work including any major projects, along with marking schemes, assessment criteria and written feedback to students. The operation of internal quality assurance systems will also be reviewed, including external examiner reports.

Following the accreditation event, the panel will produce a report and ask the course team to produce an action plan for achieving any requirements and recommendations. The report and proposed outcome will then be confirmed by the IED's Education and Training Committee at one of their regular meetings.

## Information reviewed during accreditation

In considering applications for accreditation, the IED shall:

- Accredit only programmes which provide awards granted on the basis of clearly-defined learning outcomes.
- Ensure that the programme is at the appropriate level in the applicable UK qualifications framework or at an equivalent level within an appropriate international framework.
- Monitor the accuracy of the awarding institution's published information about the programme's approved or accredited status and registration.
- Visit the awarding institution as part of the assessment if necessary, and;
- Ensure that where recognition will attest to acquisition of competence, the programme covers the relevant competence standards in the IED's Standard for Registration: Product Design and CAD.

In making a judgment, the IED shall consider evidence from a range of indicators. These shall include:

- The learning outcomes of the programme(s).
- The teaching and learning processes.
- The assessment strategies employed.
- The human, physical and material resources involved.
- The HEI's internal regulations regarding progression and the award of degrees.
- Quality assurance arrangements.
- Feedback from meetings with students.
- How any previous accreditation recommendations and requirements have been dealt with.
- Entry to the programme and how cohort entry extremes will be supported.
- The awarding institution's regulations regarding progression and the award of degrees.

The IED will normally expect to see the following evidence for each programme presented for accreditation:

- Programme specification or equivalent showing programme aims, learning outcomes and curriculum structure.
- A mapping or explanation showing where and how each required learning outcome is assessed within the programme.
- For each unit or module that contributes to the achievement of required learning outcomes:
  - The unit or module specification.
  - Assessment rubrics with marking schemes/guides.
  - Samples of marked student work covering the full range of student achievement.
- Where programmes include major projects:
  - Student project handbook(s).
  - A representative sample of project outcomes.
  - The completed marking scheme or feedback sheet for each project sampled.
- Information about industry involvement in programme design and delivery.
- Information about student and staffing numbers, outline CVs for all staff who teach on the programme to show their highest academic, professional and teaching qualifications as well as their relevant professional experience in industry and academia.
- Information about specialist practical facilities used by students on the programme.
- Information about library resources (print and digital) available to students on the programme.
- The academic regulations for student progression and award of a degree (to evidence compliance with the IED's policy on Compensation and Condonement).
- Arrangements for student academic and pastoral support.
- Quantitative data showing student progression rates from entry through each level or year of study to graduation.
- Information about the operation of quality assurance processes at programme level, in particular the arrangements for:
  - Programme approval.
  - Annual monitoring.
  - Periodic review.

- Information about student involvement in quality assurance and enhancement processes.
- External examiner reports and responses from the department for the three most recent years.
- Evidence that the programme is at an appropriate level commensurate with the Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies and ISCED.

The IED is committed to minimising the administrative burden of accreditation, for example by using data collected by the educational institution for other purposes.

**Note:** All samples of student work should be suitably anonymised wherever possible.

## Assessment

Assessment should be designed to minimise opportunities for students to commit academic misconduct, including plagiarism, self-plagiarism and contract cheating. Wherever possible, a suitable variety of assessment methods should be used to minimise opportunities for students to incorporate plagiarised work, either within the level of study or across levels. Policies and procedures relevant to academic integrity should be clear, accessible, and actively promoted rather than simply made available.

## Costs

The IED will charge for the accreditation process. There will inevitably be some costs to the educational institution seeking accreditation. Mainly, but not wholly, this cost will be in staff time.

Further information is available from the IED.

## Location of delivery

The IED will expect to visit all campuses involved in the delivery of programmes they are invited to accredit, or only accredit for delivery in campuses visited. A visit is usually required to enable the IED to consider evidence from a range of indicators. If a programme is delivered on multiple campuses (including through franchise or partnership<sup>3</sup> arrangements) students will only be considered to have completed an accredited programme if they have completed the programme at a campus<sup>4</sup> for which accreditation is confirmed.

If a degree is delivered at multiple campuses the educational institution must either:

- Agree a means of clearly presenting the campus of study/ accreditation status of each degree awarded with the accrediting Licensee(s) (this might be on degree certificates, transcripts or certificates of accreditation issued by the educational institution), or;
- Ensure that the degree is accredited for delivery at every campus for the same intake dates.

Any such agreement must be recorded on the IED database.

Educational institutions must inform the IED if they have:

- Franchised degree programmes and/or;
- Degrees delivered through collaborative partnership(s) and/or;
- Degrees delivered at different campuses.

HEIs must either:

- Secure accreditation of product design provision that is delivered through franchise or partnership arrangements and at all campuses, or;
- Make it absolutely clear in any material referring to programmes, that such programmes have not been accredited.

The IED may refuse to accredit programmes or withdraw accreditation if it believes that the educational institution is not being sufficiently clear about the non-accredited status of related programmes.

Whilst it is normally expected that an accrediting panel will visit each campus where relevant teaching is delivered, the IED may, on occasion, agree to alternative arrangements, which may include the possibility of a completely remote accreditation.

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<sup>3</sup> Partnership in this context refers specifically to partnership arrangements pertaining to the delivery of an accredited degree.

<sup>4</sup> Completed at a campus means that the student registered at that campus and, with the exception of distance or work-based learning students, they completed the majority of their studies including final assessments at that campus.



## Alternatives to campus-based provision

Programmes that are not campus-based may also be accredited. Examples of such programmes include distance learning programmes, degree apprenticeships and other work-based degrees. The same accreditation aims and standards apply as for any other types of degree programme. Assessment of assignments must be at the same standard as any equivalent programme being delivered by the educational institution. The general provisions regarding such accreditation are set out on this page, followed by specific provisions.

The IED will notify the educational institution as early as possible about any additional or different requirements for information, evidence or visiting arrangements compared to campus-based provision.

The IED will ensure that their accreditors are properly trained to carry out accreditation of the type of programme under review. It should be stressed that the primary aim is the achievement of the learning outcomes.

Programmes must be underpinned by sound delivery platforms which may include virtual learning environments. There must be evidence that the communications systems in place enable interaction between students and their tutors as well as their peers, so that students are not disadvantaged by comparison with campus-based students.

The awarding educational institution is responsible for the academic standards of its awards and the quality of provision leading to them. The arrangements for assuring quality and standards should be as rigorous, secure and open to scrutiny as those for programmes provided wholly within the responsibility of a single educational institution and through conventional class-based modes of teaching. Particular attention should be paid to the awarding educational institution's procedures for approving and reviewing any delivery partner and its agents.

Any quality systems which are purpose built for the programme type must be assessed for effectiveness.

The accreditors must meet with students during the accreditation visit. This may be a face-to-face meeting, or it may use a suitable telecommunications service or application.

Accreditors will assure themselves that robust systems are in place to ensure the authenticity of students, especially where any examinations are taken off campus or outside the UK.

Educational institutions should specify in their accreditation submission document the maximum length of time permitted for completion of their programme(s). The IED may specify that students must graduate within a prescribed period. This may be the same or less than that prescribed by the educational institution.

## Compensation and condonement<sup>5</sup>

Many UK educational institution examination board's rules include some allowance for compensation or condonement of limited failure in one or more modules, where this is compensated by strong performance across the whole programme.

The IED will consider the educational institution's regulations regarding progression. They may impose constraints on an accreditation decision as a result of this.

### The IED defines compensation as:

"The practice of allowing marginal failure (ie not more than 10% below the nominal pass mark) of one or more modules and awarding credit for them, often on the basis of good overall academic performance."

### The IED defines condonement as:

"The practice of allowing students to fail and not receive credit for one or more modules within a degree programme, yet still qualify for the award of the degree."

In the consideration of the accreditation of undergraduate and postgraduate product design degree programmes:

- Evidence that all the IED's learning outcomes are met by all variants of each programme must be provided before accreditation can be granted.
- No condonement of modules delivering IED learning outcomes is allowed.
- A maximum of 30 credits in a Bachelors or integrated Masters degree programme can be compensated, and a maximum of 20 credits in a Masters degree other than the Integrated Masters degree.
- Major individual and group-based project modules must not be compensated.
- The minimum module mark for which compensation is allowed is no more than 10% below the nominal module pass mark (or equivalent if a grade-based marking scheme is used).

The key consideration in these rules is to ensure that each graduate of an accredited product design programme has met all the programme learning outcomes specified in this Standard.

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<sup>5</sup> There are no consistent definitions of the terms 'compensation' and 'condonement' across UK educational institutions, and they are often confused. The IED therefore adopts a similar definition to that used by the Engineering Council, the QAA and the Higher Education Academy (HEA), and, for the avoidance of doubt, includes this definition in this statement.

## Application for re-accreditation

Re-accreditation is normally undertaken using the same processes as the original accreditation, unless there have been changes in the IED's regulations or processes in the interim.

### Decision-making and outcomes

If the IED is asked to consider a request to accredit a degree programme in a way that is not explicitly covered by its requirements it will make a specific decision to do so. This may include topics such as process, the level of the programme (ISCED) and the accreditation to be conferred.

Programmes are normally accredited for up to five years. However, accreditation may be awarded for a shorter period, especially in the case of new programmes where it is necessary to monitor outputs.

**Note:** an accreditation panel is only able to recommend that accreditation is backdated to earlier entry years if samples of student work are reviewed for all intakes accredited. Educational institutions should retain suitable samples of work for this purpose for all relevant academic years.

Programmes may be accredited as either:

- **Fully** meeting the underpinning knowledge and understanding for registration as either RProdDes or CTPD, or;
- Meeting the underpinning knowledge and understanding for **further learning** for CTPD.

Qualifying phrases such as 'provisional accreditation' and 'partial accreditation' are not used.

## Once accreditation is awarded

### The IED

The IED is responsible for entering details of accredited programmes into its publicly accessible recognised course database.

### The Educational Institution

Following accreditation, the educational institution must:

- Notify the IED of any major changes during the period of accreditation that would either affect the delivery of the specified programme outcomes or change the title of the degree programme.
- Ensure that they provide students and prospective students with accurate information about the accreditation status of their degree programmes and the relationship to RProdDes or CTPD registration. Educational institutions in the UK should refer to advice on consumer protection law published by the Competition and Markets Authority (CMA).

The educational institution is encouraged to use the relevant logo(s), alongside the name of all degree programmes that are accredited by the IED.

The IED has developed specific wording about accredited product design degrees, for use by educational institutions in print and digital marketing material. For educational institutions in the UK this text can be used when submitting their Key Information Set (KIS) and Unistats statements regarding professional body recognition.

Educational institutions will be provided with a set of statements. These statements are as follows:

#### **Masters other than the Integrated Masters or Doctorate**

Accredited by the IED as meeting the requirements for Further Learning for registration as a Chartered Technical Product Designer. To hold accredited qualifications for CTPD registration, candidates must also hold an RProdDes accredited Bachelors (Hons) undergraduate degree.

#### **Integrated Masters**

Accredited by the IED for the purposes of fully meeting the academic requirement for registration as a Chartered Technological Product Designer.

#### **Bachelors (Hons)**

Accredited by the IED for the purposes of fully meeting the academic requirement for registration as a Registered Product Designer and partially meeting the academic requirement for registration as a Chartered Technological Product Designer.

## Generic learning outcomes and defining characteristics of accredited programmes

Programmes shall only be accredited when they are delivered at the right level and meet all the learning outcomes specified by the IED.

The learning outcomes used during accreditation are derived from the generic learning outcomes for accredited programmes. These are set out on pages 23 - 27, along with the characteristics that define accredited degree programmes.

### Bachelors (Honours) degrees accredited for RProdDes registration (including Top-up degrees) ISCED: Level 6 EQF: Level 6

Bachelors (Honours) degrees accredited for the purpose of RProdDes registration will have an emphasis on the applications of current and developing practice.

Graduates from a Bachelors (Honours) degree must achieve the prescribed learning outcomes and will possess a coherent body of design knowledge and a proven ability to apply that knowledge to produce creative product designs using established principles and techniques. Some of the practice will be informed by current developments.

With an appreciation of professional design practice and ethics, graduates will be commercially aware and able to apply their knowledge and skills to design and deliver products to meet defined needs using established principles and techniques.

Bachelors (Honours) degrees accredited for RProdDes may be designated BSc, BA, BDes or have some other equally valid designation. It is not acceptable to accredit a Masters course for RProdDes.

### Masters degrees other than the Integrated Masters (accredited as further learning to Masters level, partially meeting the educational requirement for CTPD): ISCED: Level 7 EQF: Level 7

Masters degrees, other than the Integrated Masters accredited as further learning to Masters level for the purposes of CTPD registration, vary in nature. Some offer the chance to study, in greater depth, particular aspects of design or broader applications of design than those that the graduate studied during their Honours degree at Bachelors level. Others bring together different design disciplines or subdisciplines, or may be in a specific product design area. These programmes should provide a foundation for leadership and innovative product design practice.

Graduates from a Masters degree other than the Integrated Masters must achieve the prescribed learning outcomes and will possess a coherent body of design knowledge, and a proven ability to apply that knowledge to realise complex and innovative designs. Much of the knowledge and practice will be at the forefront of the particular area of study.

Graduates will be able to select and apply creative and experimental techniques in the absence of complete information, discussing the limitations of the methods employed.

With an appreciation of professional design practice and ethics, graduates will be commercially aware and able to apply their knowledge and skills to design, deliver and evaluate innovative new products or services to meet clearly or vaguely defined needs, using novel processes and practices.

These Masters degrees may be designed MSc, MA, MSci or MDes, or have some other designation that is equally valid and which is approved by the awarding HEI.

### **Integrated Masters degrees accredited for CTPD registration: ISCED: Level 7: EQF: Level 7**

Integrated Masters degrees accredited for the purpose of CTPD registration will have an emphasis on developing novel design solutions and practices, using novel or existing processes, through innovation, creativity and change.

The Integrated Masters will go beyond the outcomes of accredited Bachelors (Honours) degrees to provide a greater range and depth of specialist practice, within an authentic environment, as well as a broader and more general academic base. These programmes should provide a foundation for leadership and innovative design practice.

Graduates from an Integrated Masters degree must achieve the prescribed learning outcomes and will possess a broad and coherent body of knowledge including design principles and techniques, and a proven ability to apply that knowledge to design and develop complex and novel products. Much of the knowledge will be at the forefront of the particular area of study.

Graduates will be able to select and apply creative and experimental techniques in the absence of complete information, discussing the limitations of the methods employed.

With an appreciation of professional design practice and ethics, graduates will be commercially aware and able to apply their knowledge and skills to design, deliver and evaluate innovative new products or services to meet clearly or vaguely defined needs, using novel processes and practices.

Integrated Masters degrees in Product Design may be designated MDes, MSci or MEng, or have some other equally valid designation.

## Learning outcomes

### Preamble

1. **Well-defined design problems** involve several factors, but with few of these exerting conflicting constraints, and standard design techniques can be used to produce solutions.
2. **Broadly-defined design problems** involve a variety of factors which may impose conflicting constraints, but well-proven design techniques can be used to produce solutions.
3. **Complex design problems** have no obvious outcomes and may involve wide-ranging or conflicting issues and/or user needs that can be addressed through creativity and the resourceful and novel application of design techniques.
4. These learning outcomes are threshold standards and shall be interpreted in the context of a particular design area or practice, and the level of study.
5. An individual who has completed an accredited programme must meet all of the identified learning outcomes, however student learning hours are likely to vary between the five key areas of learning set out on page 10.
6. It is recognised that an accredited programme may develop learning outcome(s) beyond the threshold level; however, such additional learning is not prescribed or required for academic accreditation.
7. The learning outcomes in this document may be a useful reference point when assessing the competence of an individual who does not hold an accredited degree (for example those individuals following apprenticeships, in-company training programmes, IPD Schemes, etc.).

Area of learning	Registered Product Designer	Chartered Technological Product Designer	Chartered Technological Product Designer
	Bachelors degrees with honours accredited as fully meeting the academic requirements for RProdDes registration.	Masters degrees other than Integrated Masters and equivalent qualifications accredited as meeting the academic requirements for further learning for CTPD registration.	Integrated Masters degrees and equivalent qualifications accredited as fully meeting the academic requirements for CTPD registration.

Design principles	About knowing and applying laws, rules, and principles	About knowing, applying, evaluating and developing laws, rules, and principles	About knowing, applying, evaluating and developing laws, rules, and principles
<b>1 Methods</b> How to design, PDS, design management and process, user-centred design, inclusive design, design codes of practice, standards	R1 Apply knowledge of Design Methods, Design Management, Product Design Specifications, User-centred and inclusive design, Standards, Design codes of Practice and Processes to broadly-defined problems.	C1 Apply, evaluate and develop knowledge of Design Methods, Design Management, Product Design Specifications, Standards, User-centred and inclusive design, Design codes of Practice and Processes to complex and ill-defined problems.	C1 Apply, evaluate and develop knowledge of Design Methods, Design Management, Product Design Specifications, Standards, User-centred and inclusive design, Design codes of Practice and Processes to complex and ill-defined problems.
<b>2 Design for function</b> Knowledge and application of mathematical, scientific and engineering principles, materials, manufacture, assembly, quality	R2 Apply knowledge of mathematical, scientific, and engineering principles to broadly-defined problems. Have a practical knowledge of materials, manufacturing, assembly and product quality.	C2 Apply and evaluate knowledge of mathematical, scientific, and engineering principles to complex and ill-defined problems. Demonstrate ability to evaluate materials, manufacturing, assembly and product quality.	C2 Apply and evaluate knowledge of mathematical, scientific, and engineering principles to complex and ill-defined problems. Demonstrate ability to evaluate materials, manufacturing, assembly and product quality.
<b>3 Sustainable design</b> Design for the planet and for society; including disassembly, repair, recycling	R3 Apply knowledge of Sustainable Design to broadly-defined problems including disassembly, repair, recycling. Some knowledge will be informed by current developments.	C3 Apply, evaluate and develop knowledge of Sustainable Design to complex problems including disassembly, repair, recycling. Some knowledge will be informed by current developments.	C3 Apply, evaluate and develop knowledge of Sustainable Design to complex problems including disassembly, repair, recycling. Some knowledge will be informed by current developments.



<b>Design analysis</b>	<b>About using design judgement and evaluation</b>	<b>About using and evaluating design judgement and evaluation</b>	<b>About using and evaluating design judgement and evaluation</b>
<b>4 Design judgement</b> Analyse & evaluate creative problems, design ideas, problem solutions & designed products	R4 Analyse and evaluate broadly-defined problems design ideas, problem solutions and designed products reaching substantiated conclusions.	C4 Analyse and evaluate complex and ill-defined problems design ideas, problem solutions and designed products reaching substantiated conclusions.	C4 Analyse and evaluate complex and ill-defined problems design ideas, problem solutions and designed products reaching substantiated conclusions.
<b>5 Design research</b> Intellectual enquiry, manipulating information, user feedback	R5 Carry out intellectual and practical inquiry to address broadly defined problems, including manipulating information and utilising user feedback.	C5 Carry out original intellectual and practical inquiry to address complex and ill-defined problems, including evaluating and manipulating information and developing user feedback processes.	C5 Carry out original intellectual and practical inquiry to address complex and ill-defined problems, including evaluating and manipulating information and developing user feedback processes.
<b>Creativity and innovation</b>	<b>About utilising novelty</b>	<b>About developing and creating novelty</b>	<b>About developing and creating novelty</b>
<b>6 Creative and logical thinking</b> Conceptual and embodiment thinking, creative ideas, problem-solving design tools	R6 Utilise broadly-defined techniques and practices of conceptual and embodiment design in the creation of novel designs. Use broadly defined creative ideation techniques and problem-solving tools.	C6A Develop, evaluate and utilise creative techniques and practices. Utilise novel creative ideation techniques and problem-solving tools.	C6 Develop, evaluate and utilise techniques and practices of conceptual and embodiment design in the creation of novel designs. Utilise novel creative ideation techniques and problem-solving tools.
<b>7 User Experience</b> Aesthetics, emotional design, anthropometry, usability, interface design, ergonomics	R7 Display effective knowledge of aesthetic concepts, anthropometry and usability interface design and ergonomics, using them to create appropriate emotional designs.	C7 Display comprehensive knowledge of aesthetic concepts, anthropometry and usability interface design and ergonomics, using them to create designs that are emotionally satisfying.	C7 Display comprehensive knowledge of aesthetic concepts, anthropometry and usability interface design and ergonomics, using them to create designs that are emotionally satisfying.

Design practice	About doing design	About doing, managing and evaluating design	About doing, managing and evaluating design
<b>8 Design Practice</b> Prototyping, testing, validation, production and manufacturing	R8 Carry out prototyping, including testing and validation, displaying ability to incorporate production and manufacturing knowledge.	C8 Carry out and evaluate prototyping, including testing and validation, displaying ability to evaluate production and manufacturing knowledge.	C8 Carry out and evaluate prototyping, including testing and validation, displaying ability to evaluate production and manufacturing knowledge.
<b>9 Project Management</b> Major project responsibility, project planning and management including meeting deadlines	R9 Manage product design work including carrying out a significant, individual, complete product design exercise (from conception to physical realisation), taking responsibility for planning and management including deadlines. Plan and record personal professional development and involvement.	C9A Manage and evaluate design work including carrying out a significant, complex, individual product design or research exercise, taking responsibility for planning and management including deadlines. Plan, record and reflect on personal professional development and involvement.	C9 Manage and evaluate design work including a significant, complex, individual, complete product design exercise (from conception to physical realisation), taking responsibility for planning and management including deadlines. Plan, record and reflect on personal professional development and involvement.
<b>10 Team working</b> Liaison with stakeholders, team dynamics, leadership	R10 Carry out a significant collaborative product design exercise, including liaison with stakeholders and knowledge of team dynamics as a team member.	C10A Carry out, evaluate and manage a complex collaborative creative exercise, including liaison with stakeholders and knowledge of team dynamics as a team member.	C10 Carry out, evaluate and manage a complex collaborative creative product design exercise, including liaison with stakeholders and knowledge of team dynamics as a team member.
<b>11 Design communication</b> Sketching, drawing, modelling, CAD, writing reports	R11 Demonstrate effective abilities at sketching, drawing, modelling (physical and virtual), and use of CAD in the design of products. Write effective reports.	C11 Demonstrate comprehensive abilities at sketching, drawing, modelling (physical and virtual), and use of CAD in the design of products. Write effective reports and design criticisms.	C11 Demonstrate comprehensive abilities at sketching, drawing, modelling (physical and virtual), and use of CAD in the design of products. Write effective reports and design criticisms.

The designer and society	About what's going on around the design	About what's going on around the design	About what's going on around the design
<b>12 Risk and security</b> Health and safety, data management; security, cyber-security	R12 Use risk management processes to identify, evaluate and mitigate safety and other risks associated with projects or activities. Adopt holistic and proportionate approaches to mitigation of security and cyber-security risks.	Learning outcome achieved at previous level of study.	C12 Use risk management processes to identify, evaluate and mitigate safety and other risks associated with projects or activities. Adopt holistic and proportionate approaches to mitigation of security and cyber-security risks.
<b>13 Legal issues</b> including IPR, liability	R13 Demonstrate knowledge of legal matters relevant to product design including intellectual property and liability.	Learning outcome achieved at previous level of study.	C13 Demonstrate knowledge of legal matters relevant to product design including intellectual property and liability.
<b>14 Costs, finance, economics</b>	R14 Apply and evaluate commercial, financial and economic aspects of product design.	Learning outcome achieved at previous level of study.	C14 Apply and evaluate commercial, financial and economic aspects of product design.
<b>15 Human Resource Management</b> issues including equality, discrimination, diversity and inclusion	R15 Demonstrate knowledge of human resource management, recognising the responsibilities, benefits and importance of supporting equality, diversity and inclusion.	Learning outcome achieved at previous level of study.	C15 Demonstrate knowledge of human resource management, recognising the responsibilities, benefits and importance of supporting equality, diversity and inclusion.
<b>16 Ethics</b> Factoring ethical considerations into product design practice	R16 Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct.	Learning outcome achieved at previous level of study.	C16 Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct.

## Glossary

### Accreditation

A process of peer review of a degree **programme** against published **learning outcomes**. This usually involves a visit from a team of professional designers nominated by the IED.

### Chartered Technological Product Designer (CTPD)

One of the professional registration titles available to individual Product Designers who meet the required standard of **competence** and **commitment**. See:

<http://fplreflib.findlay.co.uk/IED/pdf/Chartered-Technological-Product-Designer.pdf>

### Commitment

An engagement and obligation to being dedicated to professional activity. Commitment requires a professional attitude, agreement and obligation. Demonstrating both **competence** and **commitment** is part of the requirement to become professionally registered with the IED

### Compensation

The practice of allowing marginal failure (eg not more than 10% below the nominal pass mark) of one or more modules and awarding credit for them on the basis of good overall academic performance. See page 18.

### Competence

The ability to carry out appropriate tasks to an effective standard. Achieving competence requires the right level of knowledge, understanding and skill. Demonstrating both **competence** and **commitment** is part of the requirement to become professionally registered with the IED

### Competition and Markets Authority (CMA)

The CMA works to promote competition for the benefit of consumers, both within and outside the UK. It is an independent non-ministerial government department.

### Computer-aided design (CAD)

The use of computers (or workstations) to aid in the creation, modification, analysis, or optimisation of a design. The term **CADD** (for *computer aided design and drafting*) is also used.

### Condonement

The practice of allowing students to fail and not receive credit for one or more **modules** within a degree **programme**, yet still qualify for the award of the degree. See page 18.

### Delivery

The delivery of a **programme**, encompassing teaching, resources and facilities, methods of learning, development and assessment, support and supervision. Not to be confused with the design of a programme, which encompasses the planning, content or syllabus.

### ECTS European Credit Transfer and Accumulation System.

A tool of the European Higher Education Area (EHEA) for making studies and education programmes more transparent. Based on the programmes' defined learning outcomes and associated workloads.

### **Engineering Council**

The UK regulatory body for the engineering profession. The Engineering Council sets and maintains internationally recognised standards of professional **competence** and ethics and holds the UK registers of professional engineers and technicians. [www.engc.org.uk](http://www.engc.org.uk)

### **EQF European Qualifications Framework**

An 8-level, learning outcomes-based framework for all types of qualifications that serves as a translation tool between different national qualifications frameworks. See <https://europa.eu/europass/en/european-qualifications-framework-eqf>

### **Graduate Attributes**

A set of statements on the expected capability of graduates from an **accredited programme**.

### **HEI Higher Education Institution.**

Any institution that provides **higher education programmes**. Most UK higher education courses are taught by universities, but many are also taught at colleges and other specialist institutions. Some 'private providers' are entering the market, and the term 'higher education provider' is now also used

### **Higher Education**

In the UK this refers to education that is post-school. In England and Northern Ireland this is defined in the Regulated Qualifications Framework (RQF) as being at a level between 4 and 8. In Wales this is defined in the Credit and Qualifications Framework (CQFW) as being at a level between 4 and 8. The Scottish Credit and Qualifications Framework places higher education at a level between 7 and 12. It includes: Certificates of Higher Education, Diplomas of Higher Education, Bachelors degrees, Masters degrees, and Doctoral degrees.

### **Higher Education Statistics Agency (HESA)**

The official body that collects, assures and disseminates data about **Higher Education** in the UK. See <https://www.hesa.ac.uk/>

### **IAB Industrial Advisory Board.**

A group of industrialists who advise an **HEI's** department on matters such as curriculum design and **delivery**, often they also support delivery for example by providing lectures, site visits, projects etc. Some departments use alternative terminology such as Industrial Liaison Committee (ILC).

### **IED**

The **Institution of Engineering Designers** is the UK regulatory body for the technological product design profession. The IED sets and maintains recognised standards of professional **competence** and ethics and holds the registers of professional product designers and CAD professionals. See [www.ied.org.uk](http://www.ied.org.uk)

### **ISCED**

The **UNESCO International Standard for Classification of Education** is designed to serve as a framework to classify educational activities, as defined in **programmes**, and the resulting qualifications into internationally agreed categories.

### **Key Information Sets (KIS)**

Comparable sets of standardised information about undergraduate courses. They are designed to allow prospective undergraduate students (and other interested parties, including the media) to compare data between programmes and institutions.

### **Learning outcomes**

Learning outcomes describe the measurable skills, abilities, knowledge or values that students should be able to demonstrate as a result of completing a **programme** of study. They are student-centred rather than teacher-centred, in that they describe what the students are able to do, not what the instructor teaches.

### **Module**

A self-contained, formally structured learning experience with a coherent and explicit set of **learning outcomes** and assessment criteria - normally with an allocated credit rating and level of study.

### **Office for Students**

An executive non-departmental public body, sponsored by the Department for Education.

### **Professional registration**

The process in which an individual is admitted to the IED's Register as any one of the registered titles. These are: **Registered Product Designer (RProdDes)**, **Chartered Technological Product Designer (CTPD)**, **Registered CAD Practitioner (RCP)**, or **Registered CAD Manager (RCADMan)**. The IED also holds a licence to register appropriate individuals under the Engineering Council registrations of **Engineering Technician, (EngTech)**, **Incorporated Engineer (IEng)**, or **Chartered Engineer (CEng)**. In addition, the IED holds a licence to register individuals under the **Society for the Environment** registrations of **Chartered Environmentalist (CEnv)** and **Registered Environmental Practitioner (REnvP)**. To achieve professional registration the individual must demonstrate, via a peer review process, that they have met the professions' standards of **commitment** and **competence** for the registration title. Individuals who have been awarded a professional registration title may use the relevant post-nominal.

### **Programme**

In the context of APDEP, 'programme' means a programme of study leading to a degree award from a **higher education** awarding body (ie an institution with the legal powers to award degrees).

### **QAA Quality Assurance Agency for Higher Education.**

QAA is an independent body which checks on standards and quality in UK **higher education**, wherever it is delivered around the world. QAA reviews and develops guidance and reference points for providers. See: [www.qaa.ac.uk](http://www.qaa.ac.uk)

### **Registration**

See **Professional registration**.

### **Registered CAD Manager (RCADMan)**

One of the professional registration titles available to individual CAD professionals who meet the required standard of **competence** and **commitment**.

**Registered CAD Practitioner (RCP)**

One of the professional registration titles available to individual CAD professionals who meet the required standard of **competence** and **commitment**.

**Registered Product Designer (RProdDes)**

One of the professional registration titles available to individual Product Designers who meet the required standard of **competence** and **commitment**.

**Society for the Environment**

The UK regulatory body for the environmental professions. The Society for the Environment sets and maintains recognised standards of professional **competence** and ethics and holds the UK registers for environmental professionals. See <https://socenv.org.uk>

**UK Research and Innovation (UKRI)**

The national funding agency investing in science and research in the UK. Operating across the whole of the UK with a combined budget of more than £6 billion, UKRI brings together the 7 Research Councils, Innovate UK and Research England.

**Unistats**

A set of university statistics that is published by HESA (The Higher Education Statistics Agency). It provides a set of comparable figures which students, parents and advisors can use to help make their Higher Education decisions.