



## 1. General Information

Award	Programme Title	Duration	Mode of Study
MA (Royal College of Art) MSc (Imperial College London)	Innovation Design Engineering (IDE)	2 Years	Full-time

<b>Awarding Institution</b>	Royal College of Art (MA) & Imperial College London (MSc)
<b>Teaching Institution</b>	Royal College of Art (RCA) & Imperial College London (ICL)
<b>Professional Accreditation</b>	N/A
<b>Associateship</b>	Associateship of the City and Guilds of London Institute (ACGI)
<b>Qualifications Framework Level</b>	FHEQ 7 / EHEA 2 <sup>nd</sup> cycle
<b>Credit Value</b>	360 CATS / 180 ECTS
<b>Language of Study</b>	English
<b>Cohort Entry Point</b>	Annually in September/October
<b>Date of most recent validation</b>	2010
<b>Student cohort(s) covered by specification</b>	2018/19
<b>Programme Specification Date</b>	September 2018

## 2. Philosophy of the Programme

Innovation Design Engineering (IDE) is looking to create a new type designer, one that has innovation focused thinking, refined design skills and engineering or technology mastery. Participants' remit is to fully exploit creativity, to deliver social and economic benefits through design and to achieve commercial success through innovation. Design is no longer a purely object-orientated activity. The research, strategy, experience, system – indeed everything around, before, after and supporting the product-service-system proposition is now within the



designers' influence. Whether it is experimental exploration, market - focused product innovations or projects driven by new business models and commercial planning in IDE, we are looking for people who can innovate masterfully within this broad spectrum, who have a point of view, who will search out what the questions are and who will be the future agents of change.

Participants in IDE take advantage of the skills and cultures of two very different organisations: a predominantly technical university (Imperial College London) and a college of art and design (Royal College of Art). The result is the rigour and precision of science, technology and engineering in combination with the inspirational and creative aspects of design. The course fosters a collaborative approach involving multidisciplinary team working and encourages external commercial involvement. Graduates will head into diverse creative careers as consultants, innovators, entrepreneurs, freelancers or within corporations.

### 3. Educational Aims of the Programme

The programme aims to provide a postgraduate learning environment which:

- enhances the student's ability in innovation, design and engineering within the context of the total delivering social and economic benefit to the world;
- is specifically structured to encourage the full realisation of each student's unique creative and intellectual potential while being appropriate to his or her individual needs;
- supports a culture where debate on issues of design, technology, business and social and environmental sustainability is informed by a design perspective;
- promotes the understanding of the integrated relationships between creative engineering and the dynamics of form, aesthetics and style, informed by the subtlest needs of the user and stakeholders through a design development process from concept generation to production and marketing;
- encourages collaborative, team-based, and multi-disciplinary working methods, brainstorming techniques, and interdisciplinary projects with both academia (other programmes in the RCA and Imperial) and externally, with international institutions and companies;
- introduces the "real world" in terms of design practice and consulting, commercialisation and funding opportunities, licensing and intellectual property, start-ups and the role of the entrepreneur;
- offers insight into activities that play a strategic role within the manufacturing and product roll-out world, such as design management, marketing and business planning.



#### 4. Intended Learning Outcomes of the Programme

Able to:	<b>A. Intellectual Engagement</b>
A1.	Develop innovative ideas that challenge the understanding of their practice and discipline.
A2.	Apply the principles and methods of observation and research in developing innovative products.
A3.	Demonstrate how their work has been informed by a global perspective on the social, cultural and political aspects of design.
A4.	Assess the impact of design decisions on the sustainability of a product.
A5.	Translate an understanding of the human form and ergonomics into user-centred design solutions.
A6.	Document and present their work using a range of visual, audio and textual media.

Able to:	<b>B. Technical Skills</b>
B1.	Apply an in-depth understanding of machine elements in translating concept into functioning design.
B2.	Test and evaluate design ideas through drawing, modelmaking and prototyping.
B3.	Select appropriate materials and processes for manufacture.
B4.	Employ concept mapping in gaining knowledge about the context of and use of a product.
B5.	Integrate the use of enterprise tools in their design of their workflows.

Able to:	<b>C. Professionalism</b>
C1.	Take responsibility in developing project briefs and managing time and resources effectively.
C2.	Collaborate effectively with peers in assigning roles, delegating tasks and communicating outcomes of group projects.
C3.	Exploit an understanding of consumer psychology and commercial issues in marketing product solutions.
C4.	Define their professional identity through an exploration of their own values, skills and the environments in which they seek to operate.



## 5. Programme Structure and Curriculum

### First Year

In the first year, students embark on a range of units ('modules'), to develop skills and experience. Each of these units focuses on a particular aspect of innovation, design and engineering and involves practising skills, as well as research activities within development of products, services, systems, campaigns and experiences, and in exploring broader societal issues.

In each unit, students undertake a design-led project to a brief - sometimes set and sometimes of their own devising. Emphasis is placed on generating imaginative ideas, development and validation through testing prototypes, simulation and gaining feedback from stakeholders including potential end users, designers, engineers, entrepreneurs and other experts.

### First Year Units

Unit Name	Unit Short Description	Led by	Credits	
			MSc (ECTS / CATS)	MA (ECTS / CATS)
Innovation Design Engineering Methods	This unit introduces 3 modes of enquiry associated with IDE through three distinct sub-modules: 'Evolution (Evo)', 'Revolution (Revo)' and 'Elastic Octopus (EO)'	ICL	10 / 20	-
Gizmo (Physical Computing and Machine Learning)	This unit combines the approaches of Physical Computing and Mechatronics, with particular emphasis on mechanisms, and the possibilities of Machine Learning and Artificial Intelligence for exploring, explaining, and predicting information in design-led innovation.	ICL	10 / 20	0
X Y (Design Visioning)	This unit introduces frameworks and tools from the field of Future Studies (or 'Foresight') to help participating students and researchers embed longer-term thinking in their practices, explore how they might influence alternative developmental pathways in the present, to achieve preferable futures.	ICL	10 / 20	0
Solo Major	This unit enables participants to identify their own individual strengths and weaknesses in innovation, design and engineering and undertake a significant self-directed project.	ICL & RCA	10 / 20	10 / 20
School-wide Platform and Project	In this unit, students from across the RCA School of Design attend a series of lectures and workshops to examine the principles,	RCA	0	10 / 20



	techniques and practice of design, as well as undertake a Grand Challenge - one of the major issues of our time.			
Superform	This unit implements an approach that aims at nurturing an explorative spirit and experimenting methods of developing new forms and new functionalities.	RCA	0	0
GoGlobal	GoGlobal is an international innovation collaboration, in which participants consider how a design agenda fits into the global context and how it can influence and inform international issues.	ICL & RCA	5 / 10	5 / 10
Critical & Historical Studies (CHS)	This unit enables students to propose an intellectual framework within which they begin to establish a coherent relationship between theory and practice. More information about this unit is provided below.	RCA	0	20 / 40



**Critical & Historical Studies**

The RCA provides a unique environment for postgraduate art and design students to reflect upon and develop their own practice, and to engage with students from their own and other disciplines. The role of Critical & Historical Studies (CHS) is to support the studio programmes in enabling these critical engagements to take place. The courses offered by CHS to first year studio-based MA students propose an intellectual framework within which they can begin to establish a coherent relationship between theory and practice.

In the autumn and spring terms there are a series of RCA-wide seminars and lectures. The first series will relate to your particular discipline (though it is possible to elect to join a series being offered to students on other programmes) whereas the second series will be more broad-based and cross-disciplinary in nature.

In the spring and summer terms, a CHS tutor will give you individual tutorials to support the development of a dissertation which is submitted following a dedicated writing period. The dissertation should be between 6,000 – 10,000 words in length – this is a major piece of work and you will be not be able to submit for the Final Examination until you have passed this assessment.

**Second Year**

The second year programme of work sees IDE students independently exploring topics of their own interest, resulting in two innovation projects: one that is team based ('group project'), and one that is performed individually ('solo project'). The thematic areas that students choose to explore are diverse, and are supported by a broad range of expert tutors.

The Solo project runs throughout the year and the Group project runs during the Autumn term and a brief period of the Spring term. The Group project is assessed at the end of Autumn term, followed by exhibition at the RCA Work in Progress Show. The Solo project is assessed at the end of the academic year as part of the Final Examination, with work shown in the RCA Final Show and Imperial Design Engineering Show. The Solo project also forms the subject of a written report involving a full description of the project development and results – this is completed and handed in to be assessed towards the end of the Summer term.

**Second Year Units**

Unit Name	Unit Short Description	Led by	Credits	
			MSc (ECTS / CATS)	MA (ECTS / CATS)
Group project	The group project emphasises an interdisciplinary collaboration and team-based project work. Students independently form teams of 3 or 4 people to conduct an innovative project, for which the outputs are validated, contextualised and deliver real value to the users.	ICL & RCA	15 / 30	15 / 30



Solo Project, Phase 1 & 2	Students work individually on one, self-directed project. In the first two phases of the project, students integrate their values, beliefs, passions and research to define a project proposal, and conduct initial experimentation and testing.	ICL & RCA	15 / 30	15 / 30
Solo Project, Phase 3 & 4	Students work individually on their self-directed project, refining their thinking through experimentation and advanced tests that validate their hypotheses developed in the previous term, in real contexts, and with real users.	ICL & RCA	15 / 30	15 / 30



## 6. Learning and Teaching Methods

<b>Introduction</b>
<p>The MA/MSc double Masters programme is of six term's duration spread over two years. The programme is predominantly project based and uses design project modules as the main context for learning the process, skills and knowledge required. These projects are supported by a variety of other activities which include lecture series, skills-based workshops, seminars as well as staff and visiting tutors for group and individual tutorials.</p>
<b>Personal Tutorials</b>
<p>Students are allocated a Personal Tutor from among the staff team at the start of the first year. The personal tutor is available to discuss any academic and pastoral concerns that students might have. The student and the personal tutor make a record of the meetings.</p>
<b>Group and Joint Tutorials</b>
<p>Students review their work in progress with a variety of staff and Visiting Tutors in tutorials, typically consisting of 1 to 1 or 4 to 1 interactions. Students are encouraged to make notes of tutorials for themselves and reflect on the discussions.</p> <p>Students in IDE2 also have Progress Review Tutorials (PRTs). These sessions are work reviews so it is expected that students attend with their work, which may include research results, sketches, prototypes, simulations, etc. Presentation material is not required but turning up with a notebook and verbalising is unacceptable. Notes about the discussions and agreed actions are made by tutors. Students should consider the written feedback as well as the verbal feedback carefully and enact as appropriate.</p>
<b>Lectures</b>
<p>There are lectures covering a range of subjects and skills. These sessions provide a break from the intense creative demands of the project based units. .</p>
<b>Formal Reviews</b>
<p>At the end of each unit, students present their work to others in the year group plus selected staff and Visiting Tutors. Verbal feedback is given during the reviews and written and graded feedback are made available after the event.</p>



### Seminars

For the Solo projects and on occasion for the Group projects seminars are also held. These are structured presentation and discussion events held with the strand members (although others are welcome). It is based on peer review with tutor guidance and is an excellent chance to see where your work lies in relation to your classmates. It is a safe and relaxed place to test new ideas, admit mistakes, demonstrate excellence, and share anything relevant as well as take advantage of the serendipitous nature of innovation. Written feedback is not typically given for seminars.

## 7. Assessment

### General

Regulations for assessment and progression can be found in the RCA Regulations <https://www.rca.ac.uk/more/about-rca/official-information/governance/RCA-regulations/>

The progress of an IDE student is reviewed on a continuous basis through verbal and written formative feedback. There are two summative examinations, an Interim and Final.

### Interim Examination

The Interim Examination is a formal examination of each student's work which must normally have taken place by the end of May each year other than the final year. Following completion of this examination, the Head of Programme drafts a brief report on the development of each students' work, attendance record, and application to their subject including any other relevant observations. This report goes to the RCA Academic Board for Concessions & Discipline, with the recommendation that a student does or does not proceed to their second year. If at Interim Examination, a student is considered to be a borderline fail, a programme of work may be set for further examination to enable progression into the second year.

The Interim Examination examines progress mid-way through a student's studies and evaluates their progress. Each student will be asked to show work completed to date and will be invited to discuss it. The quality of the work and approach to studying are considered.

For more information, please see the RCA Regulations.



## Final Examination

The Final Examination consists of a viva-voce, which takes place in the final term of the programme. If a student's Personal Tutor is not present, their reports contribute to the overall assessment.

Each student's work is assessed by academics, and a sample of the cohort's work is reviewed by External Examiners. An RCA School of Design Examination Board, chaired by the Dean of School, will be held to recommend results to the Academic Board for Concessions & Discipline for ratification.

*Note: The IDE Final Examination Board differs from the RCA normal exam board in that it is normally is made up of equal number members of staff from both RCA and Imperial.*

For more information, please see the RCA Regulations.

<https://www.rca.ac.uk/more/about-rca/official-information/governance/RCA-regulations/>



## **Re-sit/Referral Policy**

### **Interim Examination**

Normally, students who do not pass will be placed on referral; this means that a special referral project is set by the Interim Examination Panel that will challenge the student in their area(s) of weakness that would otherwise impede progress in the second year. Feedback on the reasons for referral are given immediately after the Examination Board has finished its decision making and has completed its work. The Interim Examination Panel will evaluate this referral project before the end of the summer term. Students who pass the referral project will be allowed to progress into the second year.

For the Imperial award (i.e. the MSc) a student taking a Referral Project will normally only be credited with a bare pass mark if successful. However, where illness has affected a candidate's performance at an examination, or there are other mitigating circumstances, the Joint Board of Examiners has discretion to credit the candidate with the actual marks achieved in their Referral examination.

### **Final Examination**

Students who do not pass their final examination are referred. If referred, students are required to re-submit their work at a stated date in the following academic year (usually this would take place in the Autumn term of the following academic year but may take place in the Summer term of the following academic year). Feedback on the reasons for referral are given immediately after the Examination Board has finished its decision making and has completed its work.

For the Imperial award (i.e. the MSc), a student taking a Referral Project will normally only be credited with a bare pass mark if successful and referral candidates may also not normally be considered for a merit or distinction classification. However, where illness has affected a candidate's performance at an examination, or there are other mitigating circumstances, the Joint Board of Examiners has discretion to credit the candidate with the actual marks achieved in their Referral examination.

### **CHS Dissertation**

A student who fails the CHS dissertation will not be permitted to submit for the final examination. A student may be referred once. Students are required to submit a draft of their CHS dissertation of a minimum of 5000 words, together with a dissertation bibliography for interim examination. No student will be permitted to progress to the second year until this submission requirement has been satisfactorily completed.

All re-sit/resubmission activity will normally take place at the RCA/Imperial in the UK.



### **Mitigating Circumstances**

The procedures described in the RCA Regulations will be employed to deal with students who declare mitigating circumstances either in advance of an Examination or retrospectively.

If the Examination Board (Interim or Final) has had mitigating circumstances brought to its attention then during the private deliberations over the final grade and recommended result these will be taken into account. The Board will consider the severity of the circumstances and the impact on the students learning experience and examination outcome. Based on the discussions a recommendation will be made to the ABCD committee.

In accordance with RCA regulations, If a student is unable, through disability, to be assessed by the normal methods, a Board of Examiners may vary those as appropriate, bearing in mind the objectives of the programme and the need to assess the student on equal terms with other students.



## 8. Admissions

### Programme-Specific Requirements

The Innovation Design Engineering MA/MSc programme accepts a multidisciplinary range of applicants – we want diversity of expertise, culture and experience. We are interested in engineers and technologists, we are looking for designers from all aspects of the subject area and we welcome applicants from other diverse fields such as business, social science, and the arts. In fact successful IDE applicants can come from many fields: anyone with outstanding skills in their current activities that has an excellent aptitude for innovation and team working and has a fundamental belief that design can make a direct contribution to the quality of life. Engineers, designers, scientists, technologist, artists, social scientists, business people, if you have intelligence, curiosity, passion and a drive to improve the world then IDE is interested in you.

IDE is a double Master's course run jointly between the RCA and Imperial College London, and consequently applicants need to have a degree at 2:1 level or higher (or the equivalent). In exceptional circumstances applicants without this degree qualification will be considered (for example, excellent professional experience or outstanding creative or technical abilities). Special Cases for Admissions will require (unanimous) approval from the IDE Entrance Examination Board. A recommendation from the IDE Entrance Examination Board will then require approval by the RCA's Academic Board for Concessions and Discipline (ABCD) and Imperial's Programme's Committee.

Entrance requirements are described at:

Royal College of Art:

<http://www.rca.ac.uk/studying-at-the-rca/apply/entrance-requirements/ma-entrance-requirements/>

Imperial:

[www.imperial.ac.uk/study/pg/apply/requirements](http://www.imperial.ac.uk/study/pg/apply/requirements)

Candidates who do not speak English as their first language are required to produce evidence that within the previous two years they have achieved at least an IELTS exam score of 6.5 with 6 in ALL elements (or equivalent from another approved test by another provider).

Upon entry candidates should be able to demonstrate:

- The potential to benefit from and contribute to the programme of study or research for which you are applying.
- Prior knowledge and experience indicating the potential to achieve the independence necessary for postgraduate study in a specialist discipline.
- Enthusiasm and aptitude to confront the issues to be addressed in preparation for a future professional career.
- Candidates should normally be aged over 21 years by 1 September of the proposed year of admission.



### **Portfolio: Entrance Examination Part 1**

All candidates are required to submit a portfolio of work to be assessed by the programme team. Candidates submit online portfolios via the application system. The portfolio should show:

- the excellence of your current expertise, study area or professional activity
- evidence of your interest or ability in the fields of innovation, design and engineering
- samples of your creative abilities or relevant personal interests.

The portfolio could include: projects and exercises from previous degree courses where relevant, examples of professional work; personal sketchbooks or working sketches; self-generated projects; evidence of an ability to make in 3D; as well as examples of creative work in any other areas.

### **Interview: (if invited) Entrance Examination Part 2**

Selected applicants are invited to the programme for an entrance examination which comprises of an interview (15 minutes in duration, with staff and a student representative) and a creative exercise (one hour).

## **9. Quality Assurance**

The IDE programme is subject to the quality assurance procedures of both parties as set out in a Memorandum of Agreement for the programme. Details are available on request.

Refer to the RCA Quality Handbook for more details of the College's quality and standards procedures and Imperial's Quality & Enhancement Framework is available at:

<http://www.imperial.ac.uk/about/governance/academic-governance/>

## **10. Programme Management**

RCA is the lead administrative party for the IDE programme and will be principally responsible for ensuring the smooth running of the IDE Programme.

A joint RCA/Imperial management committee, the Joint Academic Advisory Board (JAAB), has been established to oversee all academic, administrative and operational matters relating to the IDE Programme.



A Joint Board of Examiners oversees the standards and assessments of the awards. The Joint Board of Examiners' meetings and examinations will be conducted in accordance with the RCA's Academic Regulations, in consultation with Imperial. The Joint Board of Examiners' consider for approval the recommendations made by the Final Examination Panel. RCA and Imperial each nominate one or more specialist external examiner(s) for the IDE Programme. All external examiners appointed to the IDE Programme must be reported by both Parties, via normal processes and reported to the JAAB for endorsement. Both Parties' external examiners are members of the Joint Board of Examiners.

The RCA is responsible for the issue of the pass list for the MA award and the issue of MA award certificates. Imperial is responsible for the issue of the pass list for the MSc and the issue of the MSc award certificates. RCA, in consultation with Imperial, is responsible for the issue of the joint transcripts/diploma supplements/HEARS for the MA and MSc.

## 11. Regulations

Except where agreed otherwise under the terms of the IDE Memorandum of Agreement or where the JAAB has given prior approval to alternative arrangements, IDE Students will be required to comply with the Academic Regulations and other Regulations of RCA at all times during the IDE Programme.

When IDE Students are on Imperial premises, they will be required to comply with any Imperial Regulations which relate to their presence on Imperial premises, including, but not limited to Imperial health and safety policies.

A student admitted to the IDE Programme must attend to the satisfaction of both the Dean of the School of Design at the RCA and the Vice Dean (Education) for the Faculty of Engineering at Imperial. Cases will be dealt with in accordance with the RCA's Regulations. IDE Students who are asked to leave the programme due to unsatisfactory academic progress will have a right to appeal under the **Academic Appeals Policy for MA / MSc Global Innovation Design; MA/MSc Innovation Design Engineering (June 2018)**

Appeals against the decision on application for a place to study on the IDE Programme, or complaint against the IDE Programme's selection process or admission procedure will be dealt with in accordance with the RCA's Admission Appeals and Complaints Procedure.

Interruptions of study or requests to defer will be dealt with by RCA in accordance with the RCA Academic Regulations, in consultation with Imperial.



Allegations of non-academic misconduct in breach of RCA/Imperial's Regulations (including issues relating to abusive or unreasonable behaviour, damage to property, use of computing facilities, etc.) shall be dealt with under Imperial's Ordinance E2 – Code of Student Discipline, in consultation with RCA.

Allegations of academic misconduct by an IDE Student (including cheating, plagiarism, conduct affecting the security of examinations or other conduct of a similar character) shall be handled by RCA in consultation with Imperial. Cases will be dealt with in accordance with RCA's Academic Misconduct Procedure. The Inquiry Panel should include an appropriate member of Imperial staff.

Any complaint raised by an IDE Student shall be dealt with by the Party against whom the complaint has been raised, according to the appropriate procedures: the Student Complaints Procedure at RCA and the Procedure for Dealing with Complaints by Students at Imperial. Complaints relating to the overall programme will be dealt with jointly by RCA and Imperial in accordance with RCA's Student Complaints Procedure.

Subject to the clause below, any intellectual property developed by an IDE Student during the IDE Programme will be governed by both institutions' policies on the ownership of Intellectual Property (as amended from time to time) copies of which are available at:

<https://www.rca.ac.uk/more/about-rca/official-information/governance/RCA-regulations/>  
<http://www.imperial.ac.uk/research-and-innovation/research-office/ip/ip-policy/>

A process for assessing ownership and commercialisation of Intellectually Property will be agreed by the Parties.

RCA's Academic and Examination Regulations can be found at:

<https://www.rca.ac.uk/more/about-rca/official-information/governance/RCA-regulations/>

Imperial's Academic and Examination Regulations can be found at:

<http://www.imperial.ac.uk/about/governance/academic-governance/>

## 12. Governance and Regulation

The Royal College of Art: The College received its Royal Charter as an institution of university status in 1967 with the objects 'to advance learning, knowledge and professional competence particularly in the fields of fine arts, in the principles and practice of art and design in their relation to industrial and commercial processes and social developments and other subjects relating thereto, through teaching, research and collaboration with industry and commerce'.

<https://www.rca.ac.uk/more/about-rca/official-information/governance/RCA-regulations/>



Imperial College is an independent corporation whose legal status derives from a Royal Charter granted under Letters Patent in 1907. In 2007 a Supplemental Charter and Statutes was granted by HM Queen Elizabeth II. This Supplemental Charter, which came into force on the date of the College's Centenary, 8th July 2007, established the College as a University with the name and style of "The Imperial College of Science, Technology and Medicine".

<http://www.imperial.ac.uk/admin-services/secretariat/college-governance/charters/>

Both the Royal College of Art and Imperial College London are regulated by the Higher Education Funding Council for England (HEFCE) <http://www.hefce.ac.uk/reg/register/>