



## **Introduction**

Welcome to the Innovation Design Engineering (IDE) course.

IDE was started 30 years ago by the RCA's Sir Misha Black and Imperial College's Hugh Ford when they asked themselves "Can you teach design to engineers?" At that time the question was not controversial, in fact it was revolutionary. The course at first took a handful of graduate engineers and introduced them into the world of design but now IDE has expanded both in its student numbers and also in approach and type of applicant. From the start of the academic year 2010-11 the department will host over 70 students, from 15 different countries with backgrounds from mechanical engineering, through design to fine art and commerce. The now double masters course has come a long way from being an educational experiment to an international leading innovation experience – in 2009 Business Week ranked IDE in the Top 40 design programmes globally. The course remains ambitious and energetic and is looking to refine the current programme and explore new unfulfilled or innovative territories in innovation education.

IDE is both exhilarating and exhausting. It has possibly the most intensive taught element of any RCA course, and run between two institutions, IDE is also necessarily complex. We have compiled this handbook for you and hope you will find it useful. It includes information you will need at different stages of the course and should be used in conjunction with the module notes and guidelines that are published throughout the year. If you are registered for a Research degree, MPhil or PhD, you will additionally receive the Research Handbook. It covers all the information particular to research degrees, but should be used in conjunction with this handbook which covers the practical information you will need to know about the running of the department.

The IDE programme is intensive and fast paced. The goal is for you to learn and that means asking questions! So please don't hesitate to ask for any further information you may need.

Professor Miles Pennington  
Head of Department  
Innovation Design Engineering  
September 2009

## **The IDE Course**

### **Joint Course / Double Masters**

The Innovation Design Engineering course (IDE) is run jointly by the Royal College of Art and Imperial College London. Successful completion of the course leads to a double Masters Degree in Innovation Design Engineering, an MA (RCA) and an MSc (Imperial College London) as well as a Diploma of Imperial College (DIC).

### **Context**

The IDE course was established in 1980 as the first of its kind in the world. The course looks for a diverse intake of applicants from engineering, technology, science as well as designers, creatives or people with a business background. Applicants must all have an excellent aptitude for innovation and team working and have a fundamental belief that design can make a direct contribution to the quality of life. The Department is motivated by the benefits to society of innovative design: both in terms of wealth creation and quality of life. IDE encourages a breadth of vision and the generation and development of innovative ideas. It aspires to foster an awareness of the excitement and rewards of creativity within the constraints of commercial and technological practicality – and environmental responsibility.

The course fosters a collaborative approach involving multidisciplinary team working and encourages external commercial involvement. We see IDE as a cutting-edge product design, experimentation and enterprise discipline in which our graduates work at the centre of complex, demanding projects with an emphasis on prototyping and proving propositions. Our graduates typically head into diverse creative design careers as consultants, innovators, entrepreneurs, freelancers, or within corporations. The IDE graduate is a new type designer whose combination of innovation focus; engineering and technology understanding as well as design and creative flair has been proven to be a potent mix. Many of our graduates occupy exciting positions in commercial or academic institutions around the world.

The joint course also offers excellent resources within the RCA and Imperial College, make use of it as much as you can – it is a unique chance to experience a huge amount of creative and technology disciplines. You will be working with a wide range of specialist tutors, with access to staff and short courses in other disciplines. There are extensive workshops on both sites, RCA and Imperial College, and libraries which, in addition to information about leading edge technology, hold much unique archive material on the history of industrial design and engineering.

### **The School of Design for Production**

IDE is one of two Departments in the School of Design for Production, the other being Vehicle Design led by Professor Dale Harrow (also the Head of School). The studios for Vehicle Design are on the 3rd floor of the Darwin Building (same floor as IDE). The School of Design for Production brings together two Departments with common ground in terms of an ambitious vision for global and commercial design collaborations and research.

## **MA / MSc Course Description**

### **Overview of the Course**

The MA / MSc (DIC) double Masters course is of six term's duration spread over 2 years. The course begins in the Autumn term (end of September or beginning of October) and successful students graduate in July of the second year. There is at the moment no part-time mode. Post Experience Programme students (employees from industry) might join for 1-3 consecutive terms. The course is predominantly project based and uses design project modules as the main context for learning the 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 solo tutorials. The first year of the course has a number of short module, workshops or master classes of between 1 and 5 weeks duration. The second year of the course is made up of a group project which runs from the start of the Autumn term to the early part of the Spring term; and an individual (solo) project which runs in the background until the end of the group project then becomes the focus until the end of the year.

### **Course aims**

The course aims to provide a postgraduate learning environment which:

- Enhances the student's ability in design innovation within the context of the total design process.
- 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 research culture where debate on issues of design, technology, business digital media, 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 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 Departments in the RCA and Imperial College) and, outside, 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 world, as design management, marketing and business planning.

## Course objectives

Graduates will have gained those skills, knowledge and attitudes necessary to build mastery in the discipline of Innovation Design Engineering by:

- Equipping students to embark on their chosen creative careers as consultants, innovators, entrepreneurs, freelancers, or corporate staff.
- Acquiring knowledge of, and ability in, the technical skills associated with industrial design, together with an understanding of the relevance of, and opportunities offered by cutting edge technology and digital methods, in addition to proven and established materials and processes.
- Learning appropriate research skills and developing a sophisticated usage of a broad range of concepts of human/object interface.
- Demonstrating robustness of creativity in generating ideas and solutions to design problems, using appropriate methodologies within the context of the full range of other product constraints.
- Developing their ability to articulate and communicate their design thinking both visually and verbally, demonstrating a broad base of critical awareness including an understanding of commercial realities.
- Preparing, organising and completing their work effectively in order successfully to undertake projects of increasing ambition and complexity in both individual and project team situations.
- Gaining an eclectic global perspective: the economics of wealth generation through trade and design; the social responsibilities of designers and commerce in the developed world; opportunities also to benefit the developing world
- Becoming competent and motivated to expand their knowledge and skills base, receiving and working with both new concepts and existing ideas from other areas of knowledge, analysing them sensitively and rigorously, and developing them by means of experimentation, user evaluation and other appropriate testing at all stages of the design process.
- Experiencing a broad diversity of activities by participating, collaborating and observing in the challenging postgraduate and research environments of both the RCA and Imperial College.
- Producing tangible evidence of having understood the professional demands and requirements associated with the practice of industrial design, demonstrating integrity and responsibility in their attitudes to personal and group work, as well as their broader responsibilities to society.
- Gaining a sensitivity to environmental and sustainable issues in design

## MA / MSc (DIC) Curriculum and Structure

### Curriculum

The first year (IDE1) is made up of a number (approx. 10) modules, workshops or master classes. In addition, there is a vitally important Critical and Historical Studies strand run by the RCA's Critical and Historical Studies Department, which includes lectures and reading leading to a dissertation that is completed over the Summer break. The second year (IDE2) is made up of a Group project and a Solo project. See below for further details. The course learning structure is linked together by the ongoing profiling of students' ability, their work and design skills that is used as a tutorial agenda by the tutors to monitor the student's progress.

### Learning Strands

At the end of the Autumn term in the first year students elect into one of three learning strands:

Experimental Design	EXP
Design for Manufacture	DFM
Design Enterprise	DE

The learning strands are to allow students to excel at a particular approach to design or to expand their abilities through exploring a way of working unfamiliar to them. The strands are lightly embedded into the programme, especially in the first year and there is plenty of collaboration between these strands over two years. They are not distinct and separate programmes.

**What is Design For Manufacture?** DFM is about new product ideas that have a well identified market, are manufacturable, offer innovation and are desirable. DFM does not exclude the use of an experimental approach to the project nor does it exclude commercial development or planning but the focus of the project is on a well developed, market focused, product based idea that has a high standard of industrial design and involved use of technology or engineering.

**What is Experimental Design?** EXP is about design innovation at a fundamental level which may incorporate the exploration of new technologies, new product categories or new contexts and could form the basis of advanced research at a later date. It is not expected to produce a market ready proposition but it is expected to produce results that have future industrial application or commercialisation possibilities. Rigour in research methodology and an intelligent formation of a hypothesis are important features as well as innovative and explorative experiments and results.

**What is Design Enterprise (DE):** is about embracing the systemic elements around a design – so leading to the effective design and launch proposal of a new business venture, based around a product, system or service. Design Enterprise does not exclude the design of objects, but rather broadens the scope of design to consider all components of an enterprise from concept to market. Objects therefore become the tools to improve its business performance.

There is further information on the strands in the course document 'Strand Guidelines' (please ask your tutor for a copy). During the Autumn term there is a module which allows all students to experience all of the strands to help understand the different approaches that they offer and to assist with the decision making on strand.

## **Lecture and Workshop Series**

On most Wednesday's during the first year and approximately half those on the second year there are lectures and workshops held at Imperial covering a range of subjects and skills. These afternoon sessions provide a break from the intense creative demands of the course modules and projects. Where there is room, IDE2 students are welcome to attend IDE1 lectures and workshops if they wish to brush up on aspects of their skills base or attend an interesting lecture. The Wednesday afternoon programme elements are listed below:

### **Sustainability**

This is a core criteria to design and to IDE. This lecture and workshop series explores the different and wide ranging facets of the issues involved in building environmental, social and financial responsibility and sustainability.

### **Creative Business**

The purpose of this lecture series is to introduce our students to the commercial world and new business opportunities for designers. Getting going as a creative entrepreneur or setting up your own business is daunting both in complexity and the potential costs. This series introduces people with first-hand experience in a number of areas that can help smooth this process. Knowing about creative business is just as important in today's climate if you are working in a large organisation as it is if you are setting up a company in your parents' garage. As well as a chance to meet creative entrepreneurs, we will bring to the College practitioners and experts covering branding and marketing, venture capital, IT and funding. Looking at branding, consumers and desire, developing an intuitive understanding of marketing, consumer feedback and case studies. Surgeries are also run for students to get advice and guidance on these aspects with their current projects.

### **Engineering & Technology**

The engineering and technology series invites guest lecturers to talk about the technical aspects of great projects: materials, structures, manufacturing processes as well as basic engineering process and issues. Materials and structural methods are introduced at an entry level for designers who need quick results, and more in depth studies are provided for engineers. Peer learning and teaching workshops are also part of this.

### **Digital Methods**

The use of digital methods is increasing in the design world and students are encourage to learn new skills. Covering the use of CAD skills in the design process two workshops are conducted over a number of session. The currently focus of software skills is Solidworks and Rhino.

## Drawing

Drawing for design is a critical part of the design process. There are two needs: (i) being able to draw as part of the design process to allow your creativity to flourish, and (ii) drawing to communicate your work and process to others. If you can't draw, you will be partially disabled as a designer, struggle on the course and your job options will be reduced on graduation. Even with no prior experience, everybody joining the course will achieve competence if they work hard to draw throughout their time at the RCA. People with good drawing talent already will enhance their skills and become exceptional visual communicators. This is not a fine art class, though: to learn about Picasso you will need to go to an art gallery! Computer- enhanced drawing methods are taught as well as hand techniques.

## What Do I do?

Inspirational design graduates from IDE and other successful places come and visit to tell their personal stories of success and challenges that they have overcome. The goal is not only to inform the students what they do but also to help the students think once they leave what should they do.

## FIRST YEAR

In the first year the course consists sequential modules or workshops. Some of the modules are strand specific; some are shared strand; some are for the entire year. Each of these focuses on a particular aspect of IDE and involves practising designing skills, as well as research activities both within product development itself, and in exploring user and broader social issues. In each module you will undertake a design project to a brief sometimes set and sometimes of your own devising to embed the contextual work.

The work periods become progressively longer as they deal with more complex problems, and you practice the transferability of the core skills in different design settings.

Students joining the course have a diverse range of existing skills, and the tutor input ensures that the modules allow students to be challenged and learn whatever their backgrounds.

Initially, the course has short modules and workshop skills periods. As students find their feet as designers, the intensity of taught skills is reduced and by the third term students are only working on longer project modules.

Emphasis is placed on generating imaginative ideas, and on testing work-in-progress through three-dimensional modelling and feedback from potential users, design and other experts. Students are also encouraged to take drawing classes in the Drawing Studio at the RCA.

## TERM 1

Introduction and intensive exposure to design thinking and practice skills, DFM, EXP and DE strands in short modules and workshops. Developed through a mix of solo and group projects usually concluding in a large solo design and build project.

## **Guerrilla London**

Familiar or not with the city, this first module will act as a magic camera obscura which will help you "illustrate" London. The aim of the project is to reveal hidden sides of the city through explorative journeys and turning them into films. You will also make your own mark to your journeys by introducing an intervention related to your findings and this should also be the focal theme of your film. This could be in the best fine art tradition of the Viennese Actionists, the Dada movement and Neo-Dadaists or more recently the Stuckists or Banksy. Alternatively you could find a design problem and propose an 'on the spot' solution filming the reaction to your design. You could also report on an interesting location, creative person or environment in a design reportage. The stage is open for you to express yourselves in any way you find.

### **Learning Outcomes Summary:**

- Students will develop film making, editing and narrative which will form part of the core research and presentation skills used on the course.
- Introduction to the city of London, its transportation, cultural diversity, research opportunities and inspiration.
- Development of the creative process by sourcing location and developing briefs for the projects.
- Working in a team and delegating work between the team members.

### **Stranded Modules**

The aim of the Stranded module is to give you a flavour of each learning strand from experts in the field to help inform your decision about which route to take for the rest of the course. Its important to point out that the strands are inclusive. In other words you will carry on working together in groups for all your projects, sometimes in mixed strand groups, other times in single strand groups. The specialisms of the strand are not exclusive so we would expect to see for example experimental thinking in design enterprise or design for manufacture.

You will have three, one week workshops in Design Enterprise (DE), Design for Manufacture (DFM) and Experimental Design (EXP). After the three workshops you will then pick your favourite strand and work for another two weeks to continue developing your project. You will probably be in a new group combination so you can select or mash your ideas together to take them forward. This is not the final choice of your strand so you can be experimental about your selection. During the workshops you will be working in groups of 3-4 students.

IDE has three learning strands which first year students elect into at the end of the Autumn first term. The strands are specialisms within the broad IDE activity and are based on emerging areas of student interest and exit profiles of graduates. Once you make your choice this will be fixed for the duration of the course so that you can benefit from the activities taking place. In the second year you will have more focussed strand tutoring activities, seminars and separate exam criteria.

### **DE**

Over this week-long introductory workshop, we will explain what we mean by Design Enterprise, and what will be expected of students who take up this exciting new

design discipline. Some recent graduates and people from the Design London Incubator programme will be coming in to tell their stories and talk about the business and design challenges they have faced, and a number of experts will be on hand to share their tools, perspective and to offer advice. Students will choose a theme to develop into a business outline proposal during the course of the week. The Workshop aims for successful design-led innovation depends on blending customer insight and technical inventiveness to create value – value for customers and users as well as commercial value for innovative firms and their investors.

### **Learning Outcomes Summary:**

- Think strategically when faced with the challenges of introducing new products or services to market and develop the value networks necessary for commercialisation
- Perform in an inter-disciplinary team under time pressure
- Adopt a structured approach to market management and industry analysis
- Translate technical inventiveness into user and business value
- Evaluate the commercial potential of an idea as well as its social and environmental impact
- Exploit the power of design and Innovation Technologies to transform ideas into a new product or service
- Prepare a start-up
- Report, present and defend a business proposition to an inter-disciplinary panel

### **DFM**

Design for Manufacture (DFM) is core IDE territory and is about delivering innovative products to the market that work. On this workshop you will learn two important approaches that will allow you to understand and generate innovate new design solutions. The workshop is split into 2 stages with a Dyson Foundation workshop in between. Reverse engineering is the process of taking something (a device, an electrical component, a software program, etc.) apart and analysing its workings in detail, usually with the intention to construct a new device or program that does the same thing without actually copying anything from the original. What we want you to do is spend 2 days dismantling, analysing, and summarising a product. Tell us what it does, how well it does it, how it has been made, what it is made from and why. Do this visually, with drawings, real parts display and other creative presentation. We will give you the product.

### **Learning Outcomes Summary:**

- How to analyse objectively the performance of a product (SWOT analysis, human factors, etc.)
- Discover the complexity of modern assembled manufactured products.
- Materials used in everyday products.
- Manufacturing processes.
- Assembly method and time estimate for assembling.
- Cost estimates of materials, labour, assembly, packaging
- Tolerances and detail issues.
- The impact of Industrial design and brand image.
- Idea generation techniques.

- Sketch modelling and presentation skills.
- Communication skills in an interdisciplinary team under pressure.
- How to develop confidence in taking a significant step away from the status quo of design solutions.
- How to engage your audience and present new and original ideas.

## **EXP**

Matter as Computation is a one week collaborative workshop between the architectural association design research laboratory and innovation design engineering master students and will engage spatial experimentation through material processes that privilege an understanding of form as a continuous process of formation. Rather than a conception of inert spatial form, architecture elements will be understood through the design of spatial components that are capable of negotiating and dynamically correlating complex organizational patterns through the interaction of systemic We will explore the generative potential of material computation through the use of catenary structures, fabric tailor patterning, and flexible formwork casting and patterning technology. The workshop aims to introduce students to design methodologies and techniques that harness the computational potential inherent within material systems and form finding processes.

We will investigate analogue computation through the development of three working processes; the development of structure, surface and ornamentation. Each of these three elements will be the subject of a rigorous investigation into material formation. During the workshop we will seek to combine these three elements into integrative models - whereby all three criteria negotiate to compute material organisation. In this sense, all three categories will become intrinsic to the formation of the working models. For example: ornamentation and structure become inseparable, operating together to form a working negotiated material outcome.

### **Learning outcomes summary:**

- Understanding and exploring matter as computation techniques for form generation.
- Interdisciplinary skill development between ID and architecture
- Experimental design thinking

### **Superform**

The aim of the Superform module is to take you through different ways of handling and conceiving of form while designing a chair which is also.....

- made of new materials or constructions ?
- letting you sit in a new place or in a new way ?
- making it easier to perform a task while seated ?
- allowing you to do new things while seated ?
- a kite, a bed, a light, a workspace, a massage system, a form of transport etc ?

Great chairs always do something extra. It's not just about the art, engineering, ergonomics and function but about the innovative possibilities offered when designing one of the most competitive and high profile of products. The chair has achieved iconic status in the portfolios of designers through its unique qualities of supporting the

human form while providing a testing ground for new manufacturing processes, structures, aesthetics and experiments. The world is full of chairs and yet every year we continue to see new forms and functions. It's this close relationship to our changing lives that continues to drive the possibilities for new innovations in how we sit.

The brief is deliberately open and gives you a known: chair and an unknown : which is also.....Your task is to interpret the brief in a fresh innovative way. We are as much interested in how you get to the proposal as in what it is. This module develops your form handling skills through analogue methods. The final presentation will require you to make a full size chair capable of being tested in a way that proves its innovation.

### **Learning Outcomes Summary:**

- Development of form handling skills in drawing, model making and prototyping
- Using model making and prototyping for concept testing and evaluation
- Ability to produce and communicate a broad range of concepts
- Learning about materials, factories and making
- Design process skills
- Producing innovation through observation and research
- Understanding products that relate to the human form and basic ergonomic factors

### **TERM 2**

Longer more sophisticated modules introducing diverse areas and scales of design innovation. This term often includes design partnerships with other RCA departments (Textiles, Vehicle Design, GSMJ, Design Products and Design Interactions) and commercially sponsored modules. In the past these clients have included Sharp, McLaren F1, Ford, Sony, Nokia, 02, TK Maxx, Classic Opera Company, Proctor & Gamble etc.

### **Gizmo**

Many products rely on the effective design and implementation of mechanisms for their function. This course aims to introduce a range of machine elements commonly found in engineering mechanisms including bearings, shafts, gears, belts, chains, fasteners, clutches, brakes, seals, actuators and motors. Your task, working in groups of three, is to design and produce a functioning prototype, demonstrating principle, for a product or mechanism that effectively uses at least six different types of machine element that performs a useful function. You may choose to concentrate on a gadget or gizmo. Alternatively you may wish to explore the use of mechanisms in a kinetic art form. Either way the brief requirement of the effective use of at least six different types of machine element holds.

### **Learning Outcomes Summary:**

- Demonstrate competency in the selection of an appropriate type of bearing for a given application;
- Specify when to use a boundary lubricated bearing and select an appropriate bearing material to use for given conditions;
- Determine the life of a rolling element bearing using the life equation;

- Select an appropriate rolling element bearing from a manufacturer's catalogue;
- Select a suitable gear type for different applications;
- Determine gear train ratios;
- Determine the bending stress for a spur gear using the Lewis formula;
- Select appropriate gears for a compound gearbox using spur gears;
- Differentiate whether to use a chain, belt or gear drive for a given application;
- Integrate a series of machine elements in a functioning design.

## I'll Take [Carbon] Nine

IDE is not just about prototypes, it's about production. It's crazy to think that we spend all our time in education making one-off prototypes or models when the real world is about units, volume and quantity. This project is going to test you to the limit by asking you to design and make a hand sized product in a production run of **9 units** in 4 weeks! Yup that's 9 units in 4 weeks. You'll need to start by looking around and making friends within the RCA and Imperial workshops to make an assessment of the potential production facilities along with anticipated lead times and the form of data you may need to generate. The project will help you to develop your ability to look, analyse, think and ask questions; in other words enhance your critical skills. As the project requires you to work in teams to initially design and latterly develop, resolve and manufacture a given design there is little room for egos or being precious with your work. We're being generous in allowing you to use rapid prototyping for masters, moulds and tools but not for any of the final componentry or artefacts. Your product must use at least 2 main components but not more than 4. You should give careful consideration to the relationship between the object and the potential materials and manufacturing processes; are they sympathetic, is there a sense of narrative, is it appropriate? You can use any off the shelf fixings; screws rivets, clips etc as required but again they must be sympathetic to the nature of the object and its function.

Don't assume that production processes are fixed. It's just as important to challenge and innovate in designing the manufacturing process and production tooling as it is in the product itself. Many innovations arrive as the result of clever and creative interpretations of production techniques as they do through product centred design. Everything must be manufactured within the RCA and Imperial – no outside production and your production lines should be based in our imperial workshop. I'll take 9 is different every year and this time we are asking you to calculate the embodied energy of your final design with the expertise of Peter Childs. In the final critique you will be asked to present the **carbon** footprint of your products based on a production run of 10,000 units.

### Learning Outcomes Summary:

- Design Process
- Data transfer between groups
- Team working
- Design for manufacture
- Production tooling

## Commercial Project – Vodafone / Future Agenda

*‘Supported by Vodafone Group, the Future Agenda is a unique cross-discipline programme which aims to unite the best minds from around the globe to address the greatest challenges of the next decade. In doing so, it is mapping out the major issues, identifying and debating potential solutions and suggesting the best ways forward. We hope, as a consequence, that it will provide a platform for collective innovation at a higher level than has been previously been achieved. As the world responds to accelerating challenges, organisations are seeking to gain clearer and more informed views of the future so that they can place intelligent bets in terms of business strategy and innovation focus. In order to understand emerging opportunities, we believe organisations should look, beyond their traditional horizons, and use new combinations of insight and foresight methodologies. As all participants are free to use the material as a source for ongoing research and innovation, we invite you to add your views into the mix to build and share a unique view of the future we need to collectively address.’*

This exciting IDE project will offer you an opportunity to engage with big global issues in collaboration with expert thinkers and strategists who will fire your passion and imagination. Here’s the full list of issues:-

Working in groups of 3 with input from other departments and a range of tutors, you will select an area of interest and through the medium of design, generate and develop **ground breaking, innovative ideas to explore the future agenda of your chosen issue**. You will draw directly on the work of acknowledged experts in the chosen field and will therefore be able to act quickly on their insights without lengthy research. You will be expected to bring **high level design thinking** and a new way of seeing. It is likely that you will discover new things about yourselves as designers and thinkers which may trigger interesting projects for your second year and your career beyond.

The final output of the project will be highly visual 3D concepts produced to the level of **visual models** plus clearly articulated **narratives** (films, animations etc). There will be a fast track CAD and Rapid Prototyping resource with a group budget as well as film making, experimental design, design for manufacture and design enterprise inputs. This will be an intensive project which will deliver a high level design outcome and is an opportunity to do really exciting IDE style project which will take pride of place in your portfolio.

### Learning outcomes summary:

- Commercial client exposure
- Interdisciplinary team working
- Innovation in corporate environments
- Futures forecasting
- Strategic innovation

## TERM 3

Deeper projects that are more conceptually and technically challenging. This term often includes the GoGlobal international collaboration. Recent projects have been conducted in Ghana, China, Japan and Thailand.

### **GoGlobal 2010 CHINA: Rural-Urban**

Through its successful economy and rapid development, China is undergoing one of the fastest and largest migrations of humans in history from the countryside to the city, estimated at over 40 million people per year. The theme of our project is to take the country and city migration, communication and society as a meta-theme project. Students will explore the large subject area and choose focussed problem areas to tackle for diverse final outcomes that may include: communication systems, products, services and technologies. Issues could centre around communications between migrant family members, balancing education between countryside and city, movement of goods, retaining cultural connections and living systems in cities.

We plan to have an initial 'action research' phase where students will spend a few days out in the countryside to research, interview and record real experiences before returning to the city for more intensive research, concept generation and design proposals. Originally initiated in 2005, this will be the third postgraduate student collaboration between the RCA Innovation Design Engineering and Industrial Design at Tsinghua University.

Rural Urban is planned as a collaborative project where a total of approximately 60 students will work in cross-cultural interdisciplinary groups. Staff and 36 students from the RCA will travel to Tsinghua University for the duration of the project in April 2010. They will be tutored by teams of IDE-Tsinghua staff with educational visits alongside related lectures and seminars from field experts.

#### **Learning outcomes summary:**

- Develop skills in working in other cultures
- Develop a global perspective on design
- Evolve an understanding of wellbeing and satisfaction through work beyond wealth accumulation
- Develop relationships and networks for global collaborations in design and production
- Evolve social, cultural and political ?with respect to design
- Exploration of personal goals and opportunities in life
- Establish international friendships
- Understanding of skills and knowledge transfer and the limitations of monocultural education
- To encourage curiosity and creativity

#### **Reading week**

Reading week is an opportunity to focus on dissertation related learning and related research skills. Typically a programme of short workshops, presentations and occasional visits organised by RCA critical and historical studies and library staff.

## **Extreme Design (Space Hotel)**

A few years ago the closest that designers would come to space design would be designing props for Hollywood sets. Now with the successful launch of Spaceship one for Scaled Composites and Virgin Galactic, a new context and paradigm for designers has developed. Space travel is now moving quickly into the commercial phase outside of national agencies where its expected that the pace of space design will accelerate quickly. Your module leader is Daniele Bedini, world space architecture expert who has worked for both NASA and ESA and is currently working on projects for the Moon base and Mars missions. Daniele is also a Professor at the International Space University in Strasbourg and has supervised experiments in space with Russian Cosmonauts.

A space hotel needs careful consideration of both physical and psychological conditions in order to be a successful experience for a space tourist. Working in interdisciplinary groups you will select an aspect of a space hotel which can range from structural elements through to communications, furniture, leisure and hygiene etc as the subject of your space design (more details will be given during the briefing).

This new inspirational field for design creativity is the most extreme! Students will be challenged to develop a new experience to cope with the different environmental conditions, limitations in HAB module size, forced dependability on a closed life support system, psychological and sociological risks, etc. You will have to take into account the necessity to minimize weight, volume and energy consumption of all functional elements inside the Module.

This aspect will give students the ability to transfer ideas, technologies, life-styles, materials from the advanced research fields to commercial product designs making them more original and advanced. Terrestrial data cannot be expected to remain the same when applied to the space environment. Ergonomic and psychological aspects increase in value affecting all design aspects, Life Support System' items have to be re-thought in order to improve their performances, clothes have to be designed in a special way, etc.

### **Learning outcomes summary:**

- Producing innovation through observation and research in an advanced and extreme field: Space
- Ability to work in an interdisciplinary team
- Development of form handling skills in drawing, model making and prototyping
- Using model making and prototyping for concept testing and evaluation
- Ability to produce and communicate a broad range of concepts
- Learning about materials, factories and making
- Design process skills
- Understanding products that relate to the human form and basic ergonomic factors
- Understand commercial spin-off of advanced research

## **SEED (*Social Environmental Enterprise + Design*)**

The purpose of this module is to give students a good grounding in the current economic, environmental and social context into which you will graduate, and to begin to understand how you might address them by applying your design skills to developing ideas for social enterprises. At the end of the module you will have a better understanding of how design can be used in an enterprise context, as well as the meaning and scope of design enterprise. You will work initially in teams to develop a concept either for a new social enterprise or to boost the fortunes of an existing enterprise (such as Green Works – see below), to then develop areas of your projects individually.

The Module lasts two weeks. Through the wisdom and perspective of four visiting lecturers on day one and two, you will learn about design's (hitherto) role as a cog in the 'hedonic treadmill', and how this could evolve. You will also hear how one corporate business is trying to address issues of sustainability beyond Corporate Social Responsibility (CSR) and how various social enterprises are creating opportunities out of some of the paradoxical and wasteful realities of our times. You will hear from an inspiring London-based social enterprise that does not currently use strategic design thinking (Green Works), and will be asked to brainstorm together what benefits design intervention might bring to that particular enterprise. I will explain the logic and proposed methodology necessary for the creation of social enterprise, and show an example of how my own organisation is currently trialling this methodology. On the afternoon of day five you will present your early concepts, after which your groups of 3 will split up to work individually on different aspects of the project.

### **Learning Outcomes Summary:**

- Introduction to social enterprise
- Group working skills
- Solo finishing skills
- Business development

### **Critical and Historical Studies**

The RCA provides a unique environment for postgraduate art and design students to reflect upon their own practice, and to engage with students from their own and other disciplines. The role of Critical and Historical Studies (CHS) is to support the studio courses 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 College-wide seminars and lectures. The Autumn Term series will relate to your particular discipline (though it is possible to elect to join a series being offered to other Departments) whereas the Spring term 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 at the start of the second

year. The dissertation should be between 6,000 – 10,000 words in length – this is a major piece of work and you will not be able to submit for the Final Examination until you have passed this assessment.

More information about the CHS programme is provided in the College-wide Handbook and information about the lecture series will also be distributed to you in a comprehensive brochure at the beginning of the Autumn term.

## **Summer Vacation**

At the end of the three terms of the first year there is a break of approximately three months (July to September). Students are encouraged to seek employment that will extend their design experience during this summer vacation (placements may not take place during term time). Help is given in the course with the preparation of portfolios, and in coordinating applications. The Department's assistance is in conjunction with the student's own initiative, especially for requirements or locations where IDE does not have contacts. In the last few years students have been placed in consultancies and manufacturing organisations such as:

Apple Inc., Cupertino, U.S.A.  
PDD, London, U.K.  
Studio X (Ross Lovegrove), London, U.K.  
Art Lebedev, Moscow, Russia  
Cogisen Motorsport, Rome, Italy  
DNA Research, Perth, Australia  
3 Mobile, London, U.K.  
Unilever, Port Sunlight, U.K.  
FutureBrand, London, U.K.  
Inflate, London, U.K.  
UNESCO, Bhutan  
Troika, London, U.K.  
Tangerine, London, U.K.  
Daan Roosegaarde, Gouda, Netherlands  
Sagentia, Cambridge, U.K.  
Designersblock, London, U.K.  
Webb Scarlett deVlam, London, U.K.  
Ford Motor Co. Advance Product Group, London, U.K.  
Lift (Design London incubator), London, UK  
Panasonic, Osaka, Japan  
Lunar Design, San Francisco, U.S.A  
Gillette, Reading, U.K.

At the start of the Autumn term the new IDE1 students are presented to by the returning IDE2 students in a seminar called "I Know What You Did Last Summer". This is a short talk on how they spent their summer (internship, travel, study, etc.).

## **SECOND YEAR**

### **Introduction**

The programme of work in the second year (IDE2) consists of two projects:

- Group project, which is a team based activity
- Solo project, which is conducted on an individual basis.

Students choose the theme of these project themselves. 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 examined early in the Spring term at the Work in Progress show and the Solo project is examined at the end of the year in the Degree Show. The Solo project also forms the subject of a Solo project report involving a full description of the project development and results – this is completed and handed in to be examined towards the end of the Summer term.

### **Group Project**

The teams for the Group projects are formed at the end of the Summer term in the first year. Then as teams, over the Summer break students will set up a dialogue together and investigate areas of interest to assist in identifying a project theme. Students will do this via email, blogs, meeting up or however suites them best. Second year Group projects need a lot of research investigation to formulate a project theme and students should be accessing sources that include the internet, libraries, organisations, experts, magazines and newspapers. Students should be become immersed as a group in their areas of interest. They should be knowledgeable, aware of problems that need addressing or exploration possibilities and innovation opportunities. The projects that are eventually chosen need to be challenging and we encourage collaboration with other departments or from outside the RCA.

Group projects must comprise at least two students, but no more than four students, from IDE – there may also be others from the RCA or external people. The teams may be formed of students from a mix of strands or from all one kind of strand. Its important that the team works together to develop and deliver a project that answers the examination criteria for the strands in their team.

There have been many very successful Group projects that have developed into products or enterprises after the completion of the course. As part of the Group project work is the creation of a 5-10minute DVD of the project work and as a result the department has an archive of previous Group projects that can viewed by students preparing for the second year.

### **Solo Project**

The Solo project is carried out on an individual basis and runs all year. The solo project will be in the students chosen strand (DFM, DE, or EXP). As per the group project the solo projects need to be challenging and we encourage collaboration with other departments or from outside the RCA. Take a look at the Solo project reports in the back catalogue of work on the IDE website to understand the breadth and depth that a solo project can take you. Talk to tutors, other students or alumni about your

potential ideas. Projects that were started in your first year are very often not appropriate (if in doubt check with me or other senior staff ASAP) - these are better continued as minor projects if you want to take them forward.

## **Minor Projects**

In the past students have completed extra Minor projects: many students polish up IDE1 projects, competition entries and a few people do new ones. Whilst these are often good pieces of work it is important that students watch their workload and do not take on too many projects. Whilst Minor projects have no official value to the examination they might be taken into account if other work was borderline. However students should bear in mind that borderline work probably would not have occurred if more time and effort was spent on the main projects (and less on minor ones). Additionally minor projects are not guaranteed a place in either of the exhibitions.

## **IDE2 Programme**

The IDE2 Programme is split across the three terms of the second year. All the terms programmes are constructed from a series of project development stages with Gateway presentations at the end of each one. The scheduling of these Gateway presentations help to keep the momentum of the projects going and give feedback on development. Guidelines as to what needs to be presented in each Gateway and what the judging criteria consist of are available before the Gateway.

Full and detailed briefing notes for the term activities are released for students information and the IDE2 calendar is utilised for timetabling. The summary detail of each term is:

### **IDE2 Autumn Term**

The main work for the Autumn term is the Group project, but the Solo projects also starts in this term and continues in the background. During the first week of the term there are only light duties whilst the students concentrate on completing their dissertations. Then in the second week the Groups focus on shaping up their project themes for the first Gateway presentation, The Big Pitch which is held in the third week. Following that for the Group projects there are regular work review tutorials and two other Gateways during the term. For the Solo projects students need to hand in a simple proposal for their project in the early part of term and the first Gateway presentation takes place mid-term. This is an interview style Gateway with several reviewers including the Head of Department, Strand Leaders and IDE2 Programme Leader. There is a strand seminar later in the term and a final Gateway in the last week of term. It is essential that students use the Autumn term to shape up a really strong project that can be continued for the remainder of the year. Changing project after the Autumn term can only be carried out with the approval of the Head of Department and there is the risk that there is not enough time to complete a project to the standard required.

## **IDE2 Spring Term**

The second term sees the completion of the project work for the group project, which ends with the WIP show and then the emphasis turns to the Solo project. The Group project work is focused on delivery of the exhibition pieces, production of the DVD and preparation for the Final Examination Part One. This examination takes place during the WIP show and forms 40% of the degree (see examination for further information). After the completion of the WIP show the Solo project restarts with a series of seminars to get students into thinking again about their individual projects. There are strand seminars during the term and then a Gateway at the end of the term. It is crucial that students complete the term with very strong and well resolved developments of their Solo projects.

## **IDE2 Summer Term**

Students continue working on their Solo projects and attending the lecture series during the summer and final term. This is often a fast and furious term where projects are completed and delivered for one of the most prestigious students degree show in the world. There are strand seminars in early part of the term and a final Gateway approximately four weeks from the exam. The Solo project report Part 2 is completed and handed in roughly two weeks prior to the exam (see examination section for further details). The Summer Show then opens in the last two weeks of term (see the Exhibiting Your Work section for further details)

## **Convocation**

The graduation ceremony of the RCA is called convocation and takes place right at the end of the summer term, usually in the Royal Albert Hall. All graduating students are invited to attend with friends and family. The Degree Show is closed to the public that day and open only to those attending convocation.

## **Monitoring student progress**

The course learning structure of mainly project work is linked together by the ongoing profiling of students' ability, their work and design skills that is used as an agenda by the tutors to monitor the student's progress. The progress support activities that are used are different in IDE1 and IDE2:

## **IDE1 Progress Support**

### **Project Tutorials**

During module, workshops and master classes there are a number of tutors, both staff and visitors who are available to discuss the project work and the students development. The dates and times these tutorials will occur are on the IDE1 calendar. Students are encouraged to see a range of people, its key that a diverse set of opinions is gathered and ideas and directions are challenged – projects and student's development will be stronger because of it.

**Critiques.** At the end of each project the students will present their work to the others in the year group plus selected reviewers. Verbal feedback is given during the presentations and written reviewers forms are available to view after the event. The Autumn term projects are not marked, but those following the Christmas holiday are.

**Review Tutorials.** In the Spring term there are review tutorials held to discuss the student's development with the IDE1 Programme Leader and the Head of Department. Written feedback notes are provided as guidance and preparation for the Interim Examination.

### **IDE2 Progress Support**

In the second year of the course, in addition to your personal tutorials, there are 4 main teaching inputs that are programmed in to help you develop your projects. They are:

**Tutorials.** There are a number of tutors, both staff and visitors who drop in to the studio, some in regular slots, some occasional. These are listed on the IDE2 calendar and there is a sign up system that works on first come first served. Students are encouraged to see a range of people, its key that a diverse set of opinions is gathered and ideas and directions are challenged – projects will be stronger because of it. All of the strand leaders will be available for these tutorial sessions plus other strand support tutors. For the group projects it is essential students meet regularly with strand specific tutors regularly. Students can have tutorials for either the Solo or the Group project, although at times during the Autumn and Spring terms the Group projects are given priority, especially towards the WIP show. No written record is kept by staff normally of these type of tutorials.

**Work Review Tutorials (WRT's).** IDE2 students also have Work Review Tutorials timetabled into the programme. This is a key source of tutor support and is compulsory. They are normally conducted by two tutors and are work reviews so it is expected that student will attend with the work they have carried out in the recent days prior to the tutorials (so that could be research results, sketches, models, etc.) Presentation material is not required but turning up with a notebook and verbalising is not acceptable. Peer review is encouraged during these WRT's. Written notes are taken of discussions and agreed actions.

**Strand Seminars.** For the Solo projects strand seminars are also held. These are informal 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, show excellence, anything. Written feedback is not given for seminars except for those close to the Degree Show.

**Gateways.** At various points in the term students will give gateway presentations (either in their groups or individually). During these Gateways the students will make a presentation to the full year group plus reviewers of work to date. At these points students are expected to have reached and show key milestones in the project. The expected level of development of the project will be explained in guidelines prior to the Gateway. Should a group or individual student fail to meet the expectations set in the Gateway guidelines they will fail the Gateway and may be expected to under take remedial work before continuing the project. Reviewers make notes and mark the presentations according to the Gateway criteria, these are available to view after the Gateway. Further written feedback may be given for critical Gateways.

**Personal Tutors.** Each student is assigned a Personal Tutor. The following are key aspects of the role and responsibilities of the Personal Tutor:

- (a) to maintain an overview of the student's academic progress – monitoring and recording progress throughout the course;
- (b) to meet with the student on a regular basis (a minimum of once a term) to:
  - provide advice and guidance on academic issues, referring the student to other colleagues, if necessary;
  - to provide pastoral support, referring the student to other areas of the College or external agencies for help, if necessary;
- (c) to provide regular documented reports on progress – students should have access to these reports and, ideally, should agree them in discussion with the Personal Tutor. Students are encouraged to write their own notes subsequent to tutorial discussions which should be copied to the Tutor for final checking, and then filed.
- (d) to represent the student's interests in staff discussions and at the Interim Examination Board and Final Examination Board.

Students are allocated their Personal Tutors during the Autumn Term of the first year of the course.

## **Assessment and Examination**

Assessment on the IDE course fulfils two aims – to encourage learning (formative assessment), and to maintain standards (summative assessment). In order to be most effective the procedures are kept distinct, though information may be common to both.

### **Formative Assessment**

During the different periods of work, discussions with tutors involving advice imply evaluation of the work-in-hand. Visiting and department staff work in the studio, either on an informal basis or by timed pre-booked appointments. Individual tutorials may take place away from the studio at the request of tutor or student. You are encouraged to make notes of work-in-progress tutorials for yourselves and for other tutors.

On selected days often Fridays for IDE1 students and Mondays for IDE2 students, at the end of a period of work or stage of project, there will be a presentation. Such presentations are usually held with the whole year present, the tutors running the specific module and some visiting guest tutors. Other students from the course are welcome. Each student presents his or her work and the tutors and students give feedback.

The emphasis of the discussion is on the work processes and product that, to date, measured against the brief. Often these crits also involve visiting designers or other guests who have a particular interest in the broader meanings of objects, for instance the ergonomics tutor.

Students do not get written or graded feedback at presentations until the second term of the first year. After this, tutors at presentations (called reviews or crits interchangeably) complete a Review Form.

On the Review Forms, students are marked by staff and visiting tutors according to a simple set of criteria. The criteria can vary depending on the project stage, but there are typically 3-6 criteria and these are graded: O (outstanding), A (excellent), B (good), C (borderline fail) and X (fail), along with an overall grade. There is space for tutor comments as well. If a student gets an X they are given careful supervision from their tutors.

For key reviews, the reviewers discuss their results and agree to a consensus grade which is used as the definitive grade for the student.

An average B grade is expected in terms of meeting the standards of the course. Grades and comments are made available to students immediately after any reviews.

The first year students have one formal personal review at the end of the Autumn term in a tutorial format. Notes from this are made by the staff and given to the student immediately afterwards.

## **Summative assessment**

The College-wide assessment scheme provides criteria for the evaluation of student achievement which can be applied across all studio-based MA courses. The scheme is intended to ensure consistency in assessment across the College and from year to year. Details of the scheme are provided in the College-wide Handbook. It is very important that students read these so that they understand the basis on which they will be assessed at Interim and Final Examination.

While the assessment criteria used by Examination Boards will be common to all studio-based MA courses, the actual procedures employed for Interim and Final Examinations will vary to an extent from course to course. The sections below outline our assessment procedures in IDE.

## **Interim Examination**

Individual progress tutorials are held at the start of the second term in order to help students with overall progress and development on the course. These tutorials can also highlight early concerns about weaknesses that need to be resolved before the Interim examination. Feedback notes and indicative formative grades are given in writing and students are expected to focus on these before the interim examination.

The Interim exam is held during the Summer term of the first year to determine whether a student can pass onto the second year of the course. The examination criteria are published, and each student is issued with the IDE Course Examination Guidelines at an early stage in the course. The Interim Examination Board consists of the Joint Course Directors, and a Senior Tutor. Each student makes a viva presentation, lasting about 15-20 minutes, on a portfolio of work created since the start of the course. Recommendations from the Board are ratified by the next meeting of the Academic Board of Concession and Disciplines (ABCD).

Normally students will pass or fail outright, but a third alternative is that a student is placed on referral. This means that a special referral project is set that will challenge and practice the student in an area of weakness that would seriously hold back progress in the second year. This project is presented to the Board and the pass/fail result determined about progress into the second year before the end of the Summer term. Failing a referral project means that a student will leave the course.

### **CHS Dissertation: First text**

For Interim Examination you are required to submit a piece of written work of no less than 1,000 words (known as a First Text) together with a dissertation bibliography by a date given to you by the CHS Department. Details of this submission will be given to you in the Autumn Term. You cannot proceed to the second year without completing this submission.

### **Final Examination**

The award of the MA and MSc is based upon the successful results of a Final Examination. For IDE students this is split into 2 parts, the first is called the Final Examination Part 1 and involves:

- Presentation of the Group project (approx. 10 minutes presentation plus 10 minutes questions). This takes place usually during the Work-In-Progress show early in Spring term.
- Production of a DVD of the Group project. This is viewed by the examination board prior to the above presentations.
- Solo project part one report. This is read and marked by the examination board prior to the above presentations.

The second part is called the Final Examination Part 2 and involves:

- Presentation of the Solo project (approx. 10 minutes presentation plus 10 minutes questions). This takes place usually during the Degree show.
- Solo project part two report. This is read and marked by the examination board prior to the above presentations.

The examination board includes 2 external examiners; one from Imperial and one from the RCA as well as an internal moderator from the RCA and IDE staff tutors. Recommendations from the Board are ratified by the ABCD. Students pass or fail outright or are referred, with the requirement to resubmit their work at a stated date in the academic year following.

NOTE: It is mandatory to receive at least a pass for the Group project (including DVD), Solo project and the Solo project report.

Full details of the submission requirements are in the Examination Guidelines.

## **Research MPhil / PhD Programme**

IDE aims to develop a strong research activity as one of its main strategic future goals. Applications to study for an MPhil / PhD are welcomed from IDE graduates or others with proposals in the broad subject areas published by the department on the college website. Particular areas of interest are design processes centring on user research, new models of design management and development in the professional arena, sustainable development issues, and new materials and manufacturing technologies. Whilst the MPhil is an RCA degree, students have access to Imperial College facilities and course staff through the joint activities of the MA course. We have number of discretionary fee bursaries for UK students entering the MPhil programme.

MPhil/PhD Research students :

- Are encouraged to attend masters course activities including the Imperial lecture series and workshops or other course events that are beneficial to their research.
- Make regular presentations of their work to the department and masters course either through IDE2 gateways or department research seminars.
- Research students may be invited to work in a tutorial capacity in some circumstances.
- Will be supervised by a team of up to three internal and external supervisors. These will be appointed and approached by the course. The student can nominate third external supervisors.
- Students will receive a travel budget each year from the department to aid their studies.

The Ted Power Scholarship is available to IDE students for research work across a broad range of study. IDE also offers funded research projects.

The Research Handbook describes the regulation and awards of MPhil and PhD's in more detail.

## **Helen Hamlyn Research Associates Programme**

The Helen Hamlyn Research Centre runs an Associates Programme which addresses specific user needs and contexts related to social change. New RCA graduates undertake one-year design research and development projects within the RCA studios. Research Associates are funded jointly by external partners, who set briefs and participate in projects, and by the Centre, which manages the programme.

The Programme runs from October to October each year. It is woven into the RCA's studio-based work and into the RCA's academic cycle, with a Spring work-in-progress seminar and a final symposium and exhibition in the RCA galleries in the Autumn.

For RCA design graduates, the scheme offers the chance to develop further an existing idea or project in a 'live' context, or spend a year at the College exploring new areas for practitioner-based design research.

## **RCA Ethics Checklist**

The Royal College of Art aims for the highest possible standards within the disciplines of art and design, and you are expected to demonstrate professional integrity and discipline in all areas of your work. The College has a Code of Practice for Research Ethics that equally applies to the work you will undertake as part of your MA degree.

Should any of the following elements be involved in your work, advice from the RCA Research Ethics Committee must be sought before the work is undertaken:

- Active involvement of other participants
- Passive involvement of other participants
- Colleagues and staff within other higher education institutions
- Members of the public
- Children, young and other vulnerable persons
- Animals
- External bodies.

Potential influencing factors:

- Potential adverse impact on the environment
- Moral obligations
- Legal liabilities
- Insurance
- Health and safety

If any of the above elements are present in your work, you are required to complete the Research Ethics Checklist and Consent Form (RE1) (available on the RCA Intranet: [http://intranet.rca.ac.uk/pages/research/researchrelated\\_forms\\_3325.html](http://intranet.rca.ac.uk/pages/research/researchrelated_forms_3325.html)), providing details. This form should be returned to the Research Office, where it will in turn be submitted to the Research Ethics Committee for consideration.

## **Exhibiting your work**

There are 2 major exhibitions in the annual IDE programme; the Work in Progress and the Degree Show. Both are usually design, built and curated by internal IDE staff team but the IDE1 cohort usually lends a hand with the construction and completion.

### **Work in Progress (WIP) Show**

The IDE Work in Progress show is normally early in the Spring term but is subject to change. The IDE2 Group projects and selected IDE1 module project outputs are shown during this exhibition. All work shown must be approved by the Head of Department.

### **Degree Show**

The Degree Show takes place at the end of the Summer term. Work is shown subject to approval by the Head of Department. The current departmental guidelines are: all graduating students are eligible to exhibit their Solo project (and space allowing Minor project/s) in this show UNLESS the work is incomplete, dangerous, falls apart or in some way contravenes the RCA's regulations (note it is unlikely that such work will pass in the first place if your work falls into ones of the previous categories). Work of referred or failed students will not be included in the Degree Show exhibition. This may mean will mean that work displayed in the exhibition space for the exam is removed.

During the Degree Show there are a number of special events that are worth noting (not all of these are the exhibiting students guaranteed attendance):

- Private View – Friends and family mainly.
- Innovation Night – corporate and commercial visitors invited by InnovationRCA.
- Alumni Night – an evening to meet IDE graduates and people from the design industry.

Press coverage is good and there is often TV coverage too. The show is on occasion filmed and a departmental DVD created.

## **Departmental Monitoring and Student Feedback**

The general management for monitoring the effectiveness of the course and gaining feedback from the students are summarised below:

### **Student representatives**

Two students in each year take on this role and are usually volunteers.

### **Course Forums**

Course Forums are held during the term and are attended by members of the academic and technical staff and all students from the course, including research students, and, for the first forum of the year, a Representative of the College Students' Union.

The main objectives of the Forum are:

- Generally to inform the students on all matters related to the course.
- To provide a free and open opportunity for students to raise questions and to debate critical issues. Minutes are taken and distributed to staff and students. Key aspects identified by those minutes can be discussed further at a School Forum.

#### School Forum

School Forums are attended by two Student Representatives from each course – one from each year – and are chaired by the Head of School. The objective is to identify areas of sufficient importance to be raised at the Senate by the Head of School. Further action may be taken according to the Senate's decision.

#### Course Committee

The Course Committee sits twice a term in each of the Autumn and Spring terms and once at the beginning of the Summer term and comprises the staff team and Student Representatives. Its function is to deal with general issues of concern arising either from the student body or from the College/course. Although this meeting may cover some areas addressed by the Course Forum, the smaller nature of this Course Committee Meeting will allow discussion in greater depth.

#### Department Monitoring Meeting

The Course Monitoring Meeting is held at the end of the Summer term and includes course staff, technical staff representation, the CHS Tutor, and MA and Research Student Representatives. This is the main opportunity in the academic year to review the general effectiveness of the course and to make general decisions on improvements in course delivery, etc. It is preceded by the issue of a questionnaire to each student on the course allowing sufficient time for them to make a carefully considered response before discussing the broader key aspects at a Student Meeting.

#### Student Meeting

Student meetings are arranged independently by the students to discuss issues to be raised at the Course Forum, Course Committee, or Department Monitoring Meetings, or for other matters.

#### Staff Meetings

Minor staff meetings, without the students' presence, are held on a regular basis throughout the academic year. Once a year, the staff and key visiting tutors have a full meeting to review the course progress, consider the future and plan new initiatives.

#### Management Responsibility

For the MA / MSc there are two Joint Course Directors, one from the RCA and one from Imperial College, who are individually responsible to the Rectors of their respective Colleges, through their appropriate Academic Boards – for the delivery of the course and for ensuring that student learning is properly monitored and recorded.

### Annual Departmental Review

These feedback mechanisms form part of the annual Departmental Review process, which is a review of the academic health of the Department and considers the issues and concerns for the forthcoming year. One of the Departmental Monitoring meetings will consider the report that results from this review. The document should also contain a summary of the student feedback with an indication of the actions taken in response. Further details can be found in the College Regulations.

### Validation events

On a periodic basis, at least once every six years, the Department will undergo a validation event. The purpose of the validation process is to ensure that the standards of the College's courses are maintained and enhanced and that the course content is relevant and appropriate. The process is based on critical and analytical peer review by a panel of professors or tutors and practising artists, both internal and external. As part of the process the Panel will meet privately with a cross-section of the student cohort to hear your views on the content, delivery and organisation of the course. Further details can be found in the College Regulations.

## **Other useful information**

### **Staff**

#### **Head of Department**

Professor Miles Pennington

#### **Joint Course Director (Imperial College)**

Professor Peter Childs

#### **Visiting Professors**

Ranulph Glanville (Research)

Nobuoki Ohtani (Industrial Design & International relations)

#### **Deputy Head of Department**

Ashley Hall (also IDE1 Programme & Experimental Design Strand Leader)

#### **Senior Tutors**

Clare Brass (Design London Liaison & Design Enterprise Leader)

Bronac Ferran (Research)

#### **Tutor / Computer Technician**

Panos Delilabros

#### **IDE Workshop Manager**

Gordon Addy

## **IDE Workshop Apprentice Technician**

Ingrid Logan

## **Department Administrator**

Simone Thompson

## **Development Coordinator**

Sally Haworth

## **Visiting Tutors**

Professor Dale Russell

Garrick Jones (Design Enterprise Director)

Neil Barron (IDE2 Programme & Design For Manufacture Leader)

Gareth Jones

James Lamb

Simon Maidment

Avner Sadot

Savina Torrisi

Theo Spiropoulos

Daniele Bedini

## **Tutors (Imperial College)**

Marco Aurisicchio

Harminder Flora

## **Research Co-ordinator**

Derek Freeman

## **Graduate Tutors**

Matt Johnson

Mathew Holloway

Marek Bereza

David Sweeney

Yoon Bahk

## Studio Rules

We, staff and students, all have to work in the studio environment. We need to work together and understand acceptable use of the space to be able to run the course as staff and study as students effectively. Therefore there are a few rules to keep the studio environment and the course running smoothly:

1. You must arrive on time for all IDE activities (lectures, tutorials, seminars, etc.) Demonstrating good time keeping is an important aspect of postgraduate studentship which is an examination criteria and considered in assessment during both years of the course.
2. The studio areas must not be used for any dirty work, wet work, resin moulding, spray painting, prototyping, model making, particularly sanding or dust creating work is banned. However, drawing or paperwork and the use of card or foam board is permitted. When using blades, cutting boards must always be used to avoid damage to desktops.
3. All work must be tidied up at the end of a day. You each have a desk, a filing cabinet and a lockable space in the studio pigeon hole cupboards, so put your work away. Warning: the College cleaners often throw away items left on the floor during term time and sometimes throw away items on desks during the term breaks (be careful). Any time you have big items of junk you can leave them on the landing beside the service lift for removal. Don't leave junk in the studio. When a project is complete it's your responsibility to record your work and remove models, test rigs, prototypes and technology to a safe place away from IDE.
4. In the Summer, we have a total clear out of everything except studio furniture. The contents of lockers and everything else not removed from the studio will be binned. We will give you fair notice of studio clear outs. It's your job to know when these are and check notice boards, etc. when they are posted.
5. All materials, support services from other departments or resins MUST be paid for in advance before ordering or using.
6. Do not ever use RCA accounts for ordering materials or supplies without the permission or assistance of the departmental administrator and having paid for them in advance.
7. Always use the black and white laser printer for everyday printing DO NOT use the colour printer – this is very expensive and we can only afford a certain number of cartridges per year.
8. You must not take plain unused paper from the photocopier or colour laser printer: this paper is only for use in these machines.
9. The Professor's and Tutor's office is not for the use of students at any time. These rooms are for the course tutors to run and manage the course so no student work of any type can be carried out there.

10. The Research Space is exclusively for the use of IDE researchers. Anything dumped by non-research students in this space will be binned without warning.
11. The Rabbit Room (tutoring office) is for staff to use for meetings and tutorials with students. You can book this room for team meetings with the department administrator. No work can be left in here at any time and anything that is will be binned without notice.
12. Music can be played in the studio from 6pm till late, unless it disturbs a student or member of staff.
13. Washing up and the dishwasher: emptying the dishwasher only takes 3 minutes. When you make a drink: if the dishwasher is full please add washing powder and set it off. Anytime that you find the dishwasher has completed its cycle please empty it out. Never take cups and glasses out of the studio. Never leave dirty cups in the sink unless the dishwasher is running a cycle.
14. For hygiene reasons, you must throw out perishable food and drink from the fridge when it has gone off even if it is not yours: don't wait for somebody else to do it.
15. The studio coffee machine makes real coffee automatically. The drip tray and the waste coffee ground container must be emptied when the display indicates so. If you use the machine, make sure you refill the water and beans for the next person if either get low. If you use the milk frother nozzle (not recommended) then clean thoroughly afterwards as it is very hard to get stale milk off when it has burnt on later.
16. Without special permission from the Head of Department, students in IDE must now only use environmentally friendly resins. Information on these is available from Gordon Addy, IDE Technician. Projects are not eligible for assessment on the course unless this has been done.

If these rules are not followed the Department has the option of deducting a fine from individual offending students or if an individual student cannot be identified or several students are to blame, regrettably a fine may have to be deducted from all students. Fines will be used for repairs and cleaning. Fines can be up to £500. Problems may be serious: the last fridge was thrown out because of mould!

## **Attendance**

Course hours are 9.30am – 6pm Monday to Friday. Students are expected to attend the studio every day (Monday – Friday). The working day begins at 9.30am and formal teaching, including lectures and seminars, generally starts at 10.00am.

The studios are open during term times between 8am and midnight with no re-entry to the College after 10pm. At weekends they are open between 10am and 6pm. They are also open on Bank Holidays between 10am and 6pm. They are not open during

college shut down periods (during Christmas and Easter breaks), weekends or on Bank Holidays during the Summer vacation.

Students who are planning to be absent from the course, for any reason, must inform the Head of Department or Tutor. Absence from the course for any reason other than sickness or acute personal problems must be with the verbal or written permission of the Head of Department. Students must also telephone the Department Administrator if they are absent unexpectedly. Further details about the criteria for Leave of Absence are in the College Regulations.

## **Financial Support and Sponsors**

### **Financial Support**

Students on the course are well supported by scholarships including:

- The RCA bursary fund provides financial assistance for tuition fees and maintenance for some U.K. students and assistance for tuition fees for some E.U. students. See the college web site for further details: <http://www.rca.ac.uk>
- The Royal Commission for the Exhibition of 1851 offers Industrial Design Studentships to U.K. students which pay tuition fees plus a generous stipend and material budget (and travel costs on occasion) This is on a competitive basis but with IDE students usually gaining approximately six scholarships per year). See the 1851 web site for further details: <http://www.royalcommission1851.org.uk>

In addition there is:

- One Dyson Centenary Scholarship of approximately £5,000 (awarded to a second year student).
- The Anthea and Thomas Gibson Scholarship awarded to a second year student.
- Six Dyson bursaries awarded on a competitive basis to students from the second year for their solo projects.
- Two scholarships have also been endowed in perpetuity by the Ted Power Trust to support research students.

Not all of these awards are available to all (U.K. E.U or overseas) students. The funding for overseas students is in particular very scarce. Other awards and scholarships also become available during the course of the academic year and are communicated to the students via the department administrator. Further information about College-wide funding opportunities can be found on the college web site <http://www.rca.ac.uk>

## **Sponsors**

The course also benefits from the support of a number of external companies on a regular basis, mostly in the form of information and general resources. Financial support for projects which are part of the course programme will vary from year to year according to the particular planning and direction of that programme. Final year students are encouraged to develop relationships with industry in order to facilitate the progress of their major projects. However it is imperative that any proposed collaboration with an outside organisation must first be discussed with, and approved by, a senior member of staff.

## **Resources**

All students on the IDE MA / MSc programme are fully registered both as RCA and Imperial College London students and have the full rights of both colleges. Research students in the IDE department are only registered at the RCA and have limited access to some of the Imperial College facilities. Those research students who wish to have greater access please contact the Imperial College Course Director.

### **Workshop Facilities**

IDE students have access to 2 workshops for day to day activities; the IDEAS Lab Workshop at Imperial College and the Darwin Workshop at the RCA. At the beginning of the academic year, the incoming first year students are subject to an induction process in the use of both these workshop facilities generally. Access to certain high-risk machinery is limited to specific students only who will need to have specific instruction in the safe operation of such machinery.

#### **IDEAS Lab Workshop**

Is located at Imperial College in the Skempton building on the first floor and is managed by Gordon Addy. It has plenty of bench area, basic wood working machine tools, rapid prototyping machines, CNC mill, CNC router, 3D laser scanner and a resin room. This area is shared by IDE, Imperial College Mechanical Engineering students and Design London incubatees.

#### **Darwin Workshop**

The Darwin Workshop on the second floor of the RCA Darwin Building serves the needs of the five courses in the School of Architecture and Design and the School of Design for Production. There is a good wood and metal workshop as well a limited bench area.

#### **RCA Rapidform**

Is the digital manufacturing and rapid prototyping centre at the RCA. There are a number of rapid prototyping faculties there and they provide a fast and cost effective service to students.

#### **Common Services Workshop**

This workshop is located in the basement of the Darwin Building and provides a general machining service to the College. It also houses a blue foam facility which can be used by students from the School.

Imperial College Student Teaching Workshop

Is a large metal work facility and is available for use by those students who have been inducted in the Skempton building.

Imperial College Mechanical Engineering Testing Laboratories

Available for use by prior appointment.

### **Imperial College Libraries**

Central Libraries. Located at the west end of Queen's Lawn. This facility incorporates:

- Digital Library. Extensive databases, e-journals and e-books including the Engineering Sciences Data Unit (ESDU) series.
- Special Collections. Imperial College London Library holds a number of special collections of historical interest originating from the College's department and medical schools and covering such areas as geology, mining and metallurgy, civil engineering, electrical engineering, natural history and life sciences.
- Science Museum Library. This has an extensive collection of books and journals which cover the history of science and technology.

### **Course Computing Facilities – IDE studio**

All students are expected to be in possession of suitable personal computer equipment to use on the course. The department does have a very limited facility which comprises of a small number of PC and Apple Macintosh workstations with a wide range of software for: email, internet, word processing, DTP, drafting, 3D modelling, visualisation, animation, interaction modelling, sound and moving image post production. Panos Delilabros is the contact point for the IT equipment support for the department. He is responsible for the general maintenance and for providing assistance to individual students for minor software and hardware issues.

There is a black and white laser printer and an A3/A4 colour laser printer. The colour printer must not be used for general printing because it is costly to run. These printers are for course related work only.

### **Course Equipment**

The Department has the following equipment which is available for use by students subject to authorisation by Panos Delilabros or the Department Administrator:

- AV Projectors (x2)
- Slide Projector
- Digital Camcorders (x7)
- Video cassette recorder/player
- Photographic lamps
- Portable Speakers
- Digital Photo Cameras (x2)
- Microphone

- Mini Scanner
- Dual Power Supply
- Oscilloscope
- 32" Flat Screens (x2)

### **Photocopying**

The IDE photocopier is available for IDE students for course-related copying. The ID code for the student account can be obtained from the department administrator.

### **Telephones and fax**

There is a telephone extension in the studio. This accepts incoming calls via the Switchboard. Please ask people to call you on 020 7590 4444 (x 4347). There is a public telephone in the basement near the Jay Mews entrance for personal calls. The Department telephones' with external lines are not for student use.

### **Lockers**

You will have a filing cabinet as well as a small lockable cupboard. There is a deposit that you pay the Administrator for all locker / cupboard keys at the start of the year. This is refunded when keys are returned at the year end. A spare key is usually held by the Department Administrator.

**Please note that the College insurance policy does not cover the loss of personal belongings of students or staff, and therefore care should be taken at all times to make secure any items of value.**

### **Chits**

Any student requiring another Department within the College to carry out some work should collect a 'chit' (usually in return for payment) from the Department Administrator and take this to the Department which will note the cost of the work.

### **Imperial College Sports Facilities**

IC Sports Centre at Prince's Gardens provides a 25m swimming pool, four squash courts, a fitness room, a sauna bath and jacuzzi, a rifle range and a small dance studio. Membership of these facilities is available to all students and staff of the Department without charge. To contribute towards running costs a nominal entrance fee is paid for each visit.

### **Imperial College Health and Welfare Services**

In addition to the services provided by the RCA (detailed in the College-wide Handbook), the facilities of Imperial College offer a complete package of health and welfare services should you need them. The College Health Centre is located within the main halls of residence in campus at Prince's Gardens. It is staffed by doctors and nurses and has well-equipped premises including a sickbay for those needing care but not ill enough to go to hospital. Health Centre staff provide general medical care plus contraception, vaccination and travel advice services. Part-time counsellors / psychotherapists and physiotherapists, as well as a psychiatrist and sports medicine specialist who attend weekly, also provide care. The services of an osteopath, homeopath, masseuse, acupuncturist and Alexander teacher are also available through the centre.

The Dental Surgery is situated in the basement of the Health Centre. It is staffed by qualified and experienced dental surgeons and a dental hygienist. NHS treatment is provided to registered patients for all services, except orthodontics.

Student Counselling Service. Student counsellors are available to any student who would like to talk confidentially about any personal issue, e.g. study difficulties, loneliness, anxiety, depression, relationship issues, bereavement, sexuality. There are both male and female counsellors. Telephone +44 (0)20 7594 9637 or email [counselling@imperial.ac.uk](mailto:counselling@imperial.ac.uk) to arrange an appointment. See the Imperial College Student Counselling website for further information:

<http://www3.imperial.ac.uk/studenthandbook/advice/generalwelfareadvice/>

Information on a very broad range of practical and legal issues including housing, immigration, fundraising, fees, council tax and consumer matters is available from the Union Advisor, on 020 7594 8067 or email [advice@imperial.ac.uk](mailto:advice@imperial.ac.uk)

## **APPENDIX**

### **1. Intellectual Property Rights**

Many aspects of your work are potentially subject to intellectual property rights (IPR). Your 2D work will be automatically protected by copyright, the shape and look of your 3D work may be design registerable, the function of your invention may be patentable. All IPR in your work may be sold or licensed provided you have taken the necessary steps to protect them.

InnovationRCA runs the College's Selected Works programme. Each year, the College calls for applications to the programme from students who have projects which incorporate technical innovations and have promising commercial potential. The College pays the legal fees involved in protecting the intellectual property in the successful projects and works with the students to develop and sell their products to industry, sharing any profits.

While you are a registered student, the rights in your work belong to the College. If your project is not a "Selected Work" you should be aware of the way in which you can protect your work. InnovationRCA's website gives general information about the programme and FuelRCA's intranet site gives general information about intellectual property rights in your work and how to protect them:

<http://www.innovation.rca.ac.uk>

and

[http://intranet.rca.ac.uk/pages/support/copyright\\_2756.html](http://intranet.rca.ac.uk/pages/support/copyright_2756.html)

For further information please contact Pauline Watkins, Administration Manager, InnovationRCA: [pauline.watkins@rca.ac.uk](mailto:pauline.watkins@rca.ac.uk). The office is situated at 22 Jay Mews.

The intellectual property of all work executed by students during any course resides with the Royal College of Art. This is to allow the RCA to act on your behalf in protecting your interests should you wish to negotiate the assignment of your rights and interests. For a full description of rights in students' work see the College Regulations.

InnovationRCA has a standard Confidentiality and Non-Disclosure letter which you can use to protect your work when showing it to outside companies, sponsors or other interested parties.

There are five aspects to current intellectual property rights (IPR) and the protection of design and intellectual material:

#### **Patents**

- A monopoly on the exploitation of an invention, in return for disclosure of the information. (Alternatives: total secrecy or a 'get-in-first' approach). The only form of protection to cover inventions.

- Criteria: novelty; inventive step; capable of industrial application. NB: no prior disclosure.
- Exclusions: scientific theories; aesthetic creations; rules (for playing games; computer programmes); presentation of information, business ideas.
- Application: 3-stage procedure – claim with specification and drawings; preliminary examination and search & publication; substantive examination; grant. Can take up to 3 years. NB: importance of patent agent.
- Term: 20 years (five periods of 4 years, with renewal fees).
- Cost: UK – £2,500; Europe – £7,000; worldwide – £25,000 +.
- Ownership: freelance / self employed; employees (NB compensation rights); assignments and licences.
- International: Patent Co-operation Treaty 1970; European Patent Convention; Community Patent.

### **Registered Designs**

- A monopoly protection for appearance design.
- Criteria: definition of 'design'; newness. NB: no prior disclosure.
- Exclusions: sculptures (other than casts or models for use in industrial process); printed matter; 'must match' articles.
- Procedure: application to Designs Registry with representation of the design and statement setting out features for which newness claimed; search by Registry; grant. Can take from 3 – 12 months.
- Term: 25 years (five periods of 5 years, with renewal fees).
- Cost: £100 per design.
- Ownership: freelance/self employed; employees; commissioners; assignments and licences.
- International: Paris Convention for the Protection of Industrial Property 1883 (provides priority date); EEC.

### **Copyright**

- A property right which protects against direct copying of whole or substantial part of a work (but no monopoly). Applies to literary, musical, dramatic and artistic works; works of architecture; works of artistic craftsmanship. 'Artistic works' include drawings, maps, charts, diagrams, irrespective of artistic quality; also photographs.

- Criteria: originality; sufficient degree of skill and labour.
- Exclusions: ideas / concepts / facts (but protection for form in which expressed); short works (names, titles).
- Procedure: arises automatically with creation of the work; no formalities.
- Term: life of creator + 50 years; if applied industrially, 25 years.
- Cost: none.
- Ownership: normally creator of drawing; employees; assignments and licences. Marking.
- International: Berne Convention 1886 (no formalities); Universal Copyright Convention 1952 (notice of copyright); EEC.
- Link with engineering and industrial design: extension of protection for drawing to 3-D reproduction in industrially-produced articles broken by copyright, Designs and Patent Act 1988 unless resulting article is itself an artistic work (including work of artistic craftsmanship); surface decoration.

### **Design Right**

- A property right which protects against direct copying of whole or substantial part of a work (but no monopoly). Intended to protect industrially-produced articles created after 1 August 1989 (normally replacing copyright).
- Criteria: originality; sufficient degree of skill and labour.
- Exclusions: method or principle of construction; surface decoration; 'must fit' and 'must match' articles; commonplace designs.
- Procedure: arises automatically with the creation of the work; no formalities. No need to rely on drawings.
- Term: 10 years from end of first year of marketing (maximum of 15 years from origin of design), subject to licences of right during last 5 years.
- Cost: none.
- Ownership: freelance / self employed; employees; commissioners; assignments and licences.
- International: EEC designs; reciprocity.

### **Supremacy of Contract**

- Importance of clearly-expressed, written statements of intention in advance of the work; record-keeping; correspondence. Contractual arrangements with

salaried staff, freelance / consultant designers, and manufacturers,  
Confidentiality Agreements.

- The culture regarding idea origination within IDE is one of sharing and cross fertilisation which has consistently been found to be highly beneficial to a student's personal development and, in addition, helps promote the type of team spirit atmosphere increasingly sought by Industry. Students are encouraged to acknowledge their sources wherever possible, but should any conflict arise out of alleged copying of work, such problems are discussed between students and staff in order to try and resolve the difficulties. Substantiated plagiarism of a student's work is unacceptable and is therefore looked on very seriously by the College.

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