

ACADEMIC POLICY & QUALITY OFFICE

PROGRAMME SPECIFICATION

for the award of

MSc Infrastructure and Sustainable Development

Managed by the Faculty of Technology, Design and Development

delivered by the School of the Built Environment

Date approved:	6 July 2017
Applies to students commencing study in:	September 2018

RECORD OF UPDATES

Date amended*	Nature of amendment**	Reason for amendment**

SECTION 1: GENERAL INFORMATION

Awarding body:	Oxford Brookes University
Teaching institution and location:	Oxford Brookes University, Headington Campus
Language of study:	English
Final award:	Master of Science (MSc)
Programme title:	Infrastructure and Sustainable Development
Interim exit awards and award titles available:	Post Graduate Diploma in Infrastructure and Sustainable Development (PG Diploma) Post Graduate Certificate in Infrastructure and Sustainable Development (PG Cert)
Brookes course code:	MSC-ISD/BE62
UCAS code:	TBC
JACS code:	K421
HECoS code:	100150
Mode of delivery:	Full-time (On-campus) Part-time(Open Learning)
Mode/s and duration of study:	Full-time (1 year) or Open Learning (2 years). Both full-time and part-time can, with approval, extend their study to maximum of 5 years.
QAA subject benchmark statement/s which apply to the programme:	There are no relevant postgraduate subject benchmark statements but the following have been used as a reference point: RTPI – QAA Subject Benchmark Statement Town and Country Planning April 2016 http://www.qaa.ac.uk/en/Publications/Documents/SBS-Town-and-Country-Planning-16.pdf)
Professional accreditation attached to the programme:	(subject to accreditation) RTPI - The Royal Town Planning Institute - http://www.rtpi.org.uk/ - (full accreditation)
University Regulations:	The programme conforms to the University Regulations for the year of entry as published/archived at: http://www.brookes.ac.uk/regulations/

SECTION 2: WHY STUDY THIS PROGRAMME?

This MSc programme is one of the few globally to focus on equipping professionals to lead on the planning of infrastructure to support inclusive and sustainable development in the rapidly growing cities of middle and low income countries. The programme offers a new approach to studying infrastructure planning and delivery and is designed to make the step change needed to meet the sustainability challenges of the 21st century. On this programme you will engage with new and innovative thinking on infrastructure responding to the imperatives of rapidly growing cities to achieve poverty alleviation, ecological sustainability and local economic growth within increasingly complex and uncertain environments.

What makes this course different?

The central identity of the course is informed by the agenda set by the UN [Sustainable Development Goals](#) (SDGs) for cities. This recognises that infrastructure planning must be treated as more than a sectoral field in development if it is to address the conflicting imperatives for cities in the 21st Century. Consequently, this course aims to equip a new group of professionals with the necessary theoretical knowledge and practical skills to move from traditional sectoral approaches towards a strategic and 'systems' approach. Within this context, emphasis is placed on the role of governance in achieving the delivery of sustainable and resilient infrastructure that contributes to poverty alleviation in low and middle income countries. This focus is underpinned by an interdisciplinary approach placing a strong emphasis on the teaching of practical skills as well as theoretical knowledge.

What will be distinctive about the learning experience?

So that you are well prepared to enter the job market and impact the sector with innovative and critical thinking, the teaching team has carefully designed the MSc in Infrastructure and Sustainable Development ('MSc ISD') in collaboration with industry and development practitioners for you to learn about the subject in a way that closely matches the needs of professional practice. To meet the challenging demands of the modern learner and increase accessibility, the MSc ISD, through its use of the Virtual Learning Environment (VLE), provides a highly flexible programme of study. Thus the MSc is available both as a one year full-time programme, and in open-learning mode (distance learning) normally taken over two years (both extendable up to 5 years). The course consists of four core modules, plus research methods and a final dissertation. The modules are entirely self-contained so that participants may enter the program either in September or January.

This flexible programme is purposely designed to deliver an authentic, contemporary learning experience that provides you with opportunities to engage with real-life challenges within a stimulating theoretically informed environment. This is achieved in the following ways:

- We adopt a collaborative approach to learning and teaching working closely with practitioners both in the private and public sectors, and other academics and professionals in the field. The contribution of our own multi-disciplinary teaching team is interspersed with input from a variety of guest speakers in practice with direct personal experience of planning and delivering infrastructure programmes in development contexts.
- The programme makes use of Problem Based Learning ('PBL') to support students in developing skills in problem solving and decision making in complex situations. This is achieved through guided

working on a variety of real-life case studies drawn from around the world on which students are encouraged to share their own experiences.

- You will be taught a combination of both theoretical learning and practical skills including both traditional and innovative infrastructure planning and appraisal methods and approaches to programme design and evaluation. This will enhance your employability and ability to impact the sector with innovative and holistic approaches. To develop these skills, the programme includes a core practice based module where you have the opportunity to experiment with, and test approaches to inclusive infrastructure delivery through the design of your own project.
- During your programme you will also have the opportunity to participate in an optional international field trip. Field trips provide excellent opportunities to apply your theoretical learning to real life problems and contexts. On this field trip you will evaluate the governance processes on an actual infrastructure development project engaging with a wide range of stakeholders and learning about the challenges of working in different social, cultural and regulatory contexts. You are also invited to take part in four three-day on-campus intensive study sessions. Again, these are not compulsory but students find them enjoyable and useful.

Reflecting the multidisciplinary nature of the programme, the teaching team has wide-ranging expertise covering development, planning, governance, urban design, geography, finance and environmental management. This makes use of the expertise and research of staff from the Oxford Institute for Sustainable Development (OISD), one of the UK's largest research institutes dedicated to sustainable development. Follow this link to learn more about our teaching team - <http://be.brookes.ac.uk/staff/>.

This diversity of staff interests, combined with their experience of leading research and consultancy that is nationally and internationally recognised, helps to maintain the topical character of the programme. This is further supported by our collaborative approach to learning and teaching through working closely with practitioners in the field.

What will you learn about?

You will receive an interdisciplinary training in the fields of governance, sustainability, finance and practice.

With a central focus on **governance**, you will learn about the role of different institutions, actors and policies on infrastructure planning and delivery at different levels from the global and regional level down to state, regional and finally neighbourhood level. The programme explores the processes and main actors involved in the formation and management of alternative infrastructure delivery vehicles, (e.g. public private partnerships) and you will develop a firm understanding of central issues relating to landownership and land tenure. In addition, not only do we focus on learning how to resolve conflicts, protect people's rights, engage with communities but also how to bring together different public, private and community stakeholders and resources for both effective planning and equitable delivery.

In the context of **sustainability**, you explore the relationships between infrastructure and sustainable development in cities. You will understand how infrastructure shapes cities and the lives of its residents. We focus on learning how to analyse infrastructure challenges in different urban contexts and their implications for both people and the environment. In particular, you will examine the effects of the infrastructure deficits experienced by low income communities and the challenges of climate change, threats to ecosystems, biodiversity decline, and resource depletion. Using problem based learning (PBL)

you will also develop your capacity to facilitate and negotiate innovative infrastructure strategies that respond to these challenges in complex and uncertain scenarios.

In the field of **finance** you are equipped with a grounded understanding of the theory and practice of financing the development, renewal, repair and maintenance of infrastructure. We examine how infrastructure can be financed, alternative funding models and cost recovery options, and sources of finance. You will explore the roles of key actors and review the approaches, methods and tools for decision making for appraising and financing infrastructure development in a variety of contexts under conditions of uncertainty. Equal importance is attached to understanding mechanisms for achieving cost recovery and options for innovation that offer more equitable solutions.

Across all fields the programme aims to provide an understanding of both the theory and **practice** of infrastructure planning. You will learn about a range of innovative and traditional infrastructure planning and appraisal methods and tools. You are also equipped with a working knowledge of the key frameworks and approaches used to design and implement development programmes. A significant feature of this learning involves you 'learning by doing' designing your own infrastructure project for a community.

The course is targeted at those with, or seeking a career in government, the private sector, NGOs or multilateral and bilateral development agencies working in the field of infrastructure planning and international development. Being a degree which does not require previous study in a particular subject area, it is expected that undergraduate candidates for the MSc ISD will come from a wide range of backgrounds and experience, including undergraduate programmes in social and political sciences, economics, engineering, health, architecture, construction management and other subjects relating to the built environment and development. In addition, the programme is designed to meet the needs of professionals with built environment or development experience who are seeking to enhance their capacity to work in infrastructure planning. The expected career destinations of graduates include engineering and planning consultancies working in middle and low income countries, such as AECOM, ARUP, Mott MacDonald and Atkins; development agencies, e.g. World Bank, UN Habitat, DIFD, USAID; local government planning authorities in low and middle income countries and NGOs including Oxfam, Care International and WaterAid.

SECTION 3: PROGRAMME LEARNING OUTCOMES

On successful completion of the programme, graduates will demonstrate the following Brookes Attributes:

3.1 ACADEMIC LITERACY

LO1	Employ a range of conceptual, analytical and practical techniques to operate in an effective inter-disciplinary way in the context of the planning of urban infrastructure for inclusive and sustainable development.
LO2	Synthesise a breadth of knowledge around critical debates on urbanisation, infrastructure investment, international development, sustainability and governance.
LO3	Critically evaluate underlying political economy and institutional dynamics impacting on urban infrastructure planning and delivery in the Global South
LO4	Critically evaluate approaches to infrastructure planning and delivery in advancing the Sustainable Development Goals (SDGs) in urban contexts.

3.2 RESEARCH LITERACY

LO5	Evaluate and plan appropriate methods of research, analysis, appraisal and evaluation for a given infrastructure development programme.
LO6	Define, seek out and synthesise data to support decision-making in the context of infrastructure planning and delivery.
LO7	Act autonomously in designing and implementing a major piece of independent research in the field of infrastructure planning and delivery.

3.3 CRITICAL SELF-AWARENESS AND PERSONAL LITERACY

Graduates will be able to effectively:

LO8	Provide leadership in a professional and international context
LO9	Illustrate an innovative, flexible, and informed approach in their professional judgement in a given situation
LO10	Recognise the role, in the process of planning and managing infrastructure, of the skills of negotiation and mediation and the importance of collaboration and teamwork in a multidisciplinary context

3.4 DIGITAL AND INFORMATION LITERACY

LO11	Appraise new approaches as they apply to the planning and delivery of infrastructure
LO12	Present information effectively (oral, written and graphic) to a professional practice standard

3.5 ACTIVE CITIZENSHIP

Graduates will be able to effectively:

LO13	Recognise the importance of stakeholder involvement and public participation in the planning of infrastructure programmes and of engaging and communicating with a diverse range of interests, including local residents and community groups, businesses, commercial developers, politicians and protest groups.
LO14	Implement a reflective, problem-solving approach in multicultural and multidisciplinary teamwork in a global context

SECTION 4: CURRICULUM CONTENT & STRUCTURE

4.1 PROGRAMME STRUCTURE AND REQUIREMENTS:

Code	Module Title	Credits	Level	Status	Coursework: Exam ratio
PMAN7017/ P33512	Sustainable Development	30	7	Compulsory	100% coursework
PMAN7018/ P33513	Infrastructure Finance	30	7	Compulsory	100% coursework
PMAN7019/ P33514	Governance and Political Economy	30	7	Compulsory	100% coursework

PMAN7020/ P33515	Development in Practice	30	7	Compulsory	100% coursework
PMAN7009/ P33523	Applied Research Methods	10	7	Compulsory	100% coursework
PMAN7010/ P33599	Dissertation	50	7	Compulsory	100% coursework

4.2 PROGRESSION AND AWARD REQUIREMENTS

All the modules on the MSc ISD are at level 7 and are compulsory. Students may enter the programme at either the start of Semester 1 (September) or Semester 2 (January). Full time students undertake two 30 credit modules per semester plus Research Methods (10 credits) across semesters 1 and 2. Upon successful completion of the four core 30 credit modules plus the research methods module, students undertake a dissertation (worth 50 credits) either in the summer (for September entry) or in semester 2 (for January entry).

Open learning students undertake one 30 credit module per semester plus Research Methods across semester 1 and 2, for September entry. For January entry, Research Methods is taken over semester 2 and then 1 respectively. As with full-time students, upon successful completion of the four core 30 credit modules plus the Research Methods module, open learning students undertake a dissertation (worth 50 credits) either in the summer (for September entry) or in semester 2 (for January entry).

There are two interim exit awards:

Postgraduate Diploma in Infrastructure and Sustainable Development for which students must complete four 30 credit modules excluding modules PMAN7009/P33523 Applied Research Methods and PMAN7010/P33599 Dissertation.

Postgraduate Certificate in Infrastructure and Sustainable Development for which students must complete , any two of the 30 credit modules excluding modules PMAN7009/P33523 Applied Research Methods and PMAN7010/P33599 Dissertation.

4.3 PROFESSIONAL REQUIREMENTS

The MSc is seeking is seeking full accreditation with the Royal Town Planning Institute (RTPI).

SECTION 5: TEACHING AND ASSESSMENT

Learning and teaching on the MSc includes a variety of activities that enable us to deliver theoretical and practice-based content and support you to develop the knowledge and the skills needed to engage in professional practice. A key feature of the teaching team's approach is the use of Problem Based Learning ('PBL'). PBL is a well-recognised approach to learning in which you learn about a subject through the experience of solving an open-ended problem, often based on a real world case study. This method has been shown to develop lifelong learning skills, transferable skills and subject knowledge which you can readily apply in practice.

Overall, the programme is designed to facilitate your learning through developing the Oxford Brookes' five core Postgraduate Attributes which have informed the Programme Learning Outcomes. You can learn more about these [here](#).

The typical types of learning activities you will be involved in are as follows:

Lectures (mixture of face to face sessions for full-time students; recorded webinars and pre-recorded lectures for both full-time and open learners) introduce key concepts, theories and current issues regarding infrastructure and development in cities. You will be exposed to a range of interdisciplinary perspectives from both academic staff, and, guest lectures by visiting practitioners.

Seminars and online discussion forums provide a stimulating environment for debates, group discussion and testing of theoretical ideas. Seminars and discussion forums are usually related to the content developed in lectures or acquired through readings of relevant literature and the media.

Workshops (conducted both face to face and via recorded webinars) provide the opportunity to develop practical work and learn professional skills. They also provide the setting for project development of group work by students providing key opportunities for feedback and for testing of how theoretical ideas can be applied in practice. Throughout the programme you will be supported in working collaboratively with your peers both in class and online This affords students the opportunity to both work in diverse teams and experience first-hand differing approaches to problem solving. Workshops are a key feature of the intensive study periods, creating the opportunity to develop project work in collaboration with peers with guidance from tutors.

Presentations (conducted both face to face and via webinar) are an intrinsic part of the course and also key instances for providing feedback. Presentations enable you to practice the communication skills that are essential for effective professionals, including the clear explanation of ideas and concepts to clients.

Site Visits and Field trips create opportunities to learn from experiencing, first hand, a variety of urban contexts.

Working within the VLE is a key aspect of this programme for both full-time and open-learners. The VLE is used to support you in all aspects of your learning. It is used to deliver filmed lectures, host discussion forums monitored by module leaders, provide teaching and learning material and facilitate collaboration with your peers. In addition it is used for both formative and summative assessment feedback.

The Induction is an important part of the programme with a set of learning resources placed in an online environment and offered as part of the induction pack. This is not compulsory and does not provide essential knowledge but serves as a useful resource to improve your experience and engagement on the course.

What will my workload be like in a typical week?

Each module that you take is worth a number of Masters level credits, also known as Level 7 credits. The amount of time each student will take to achieve the learning outcomes for a module will vary according to the needs and ability of the student. However the core modules are designed so that each credit equates to approximately 10 hours of learning. Therefore, a module worth 30 credits requires approximately 300 hours of learning.

As a full time student, in a typical week, your time will be divided between attending two 2 hourly sessions per week for each of the two core modules (usually a mixture of lectures, seminars or workshops) and one 1½ hour session for research methods in your first semester (reduced to approximately two, 2 hourly sessions in the second semester). Outside the module contact hours, you will undertake independent learning (for example, library visits, research, face to face, review of online material and online individual and group collaborative learning) to construct and develop your

coursework assignments.

As an open learner in a typical week, your time will be divided between: attending online seminars (approximately fortnightly); participating in 'Question and Answer' sessions (approximately once a week); engaging in on online discussion forums; collaborating online with peers for assessments and independent study. Your independent study is guided by a number of formative online exercises including online quizzes and academic support through discussion forums and regular 'Question and Answer' sessions. Face to face contact for open learning students takes place within the four study periods where they share much of their learning with the full-time students. The first of these study periods includes a series of workshops and other activities which develop problem-solving skills and encourages full and open learning students to get to know each other and begin to form cohesive and supportive groups.

How does the experience of an open learning student differ from that of a full-time student?

For open learning students teaching is delivery mainly online whereas teaching for full-time students takes place predominately on campus in weekly face to face lectures and seminars. Teaching is delivered online through a number of pre-recorded lectures, webinars, discussion forums and guided exercises as well as set readings, films and podcasts available to both open learning and full-time students. The main difference between the experience of full-time and open learning students is that full-time students will participate in the majority of the lectures and exercises in 'real time' in scheduled face to face lectures and seminars on campus. In contrast as an open learner you have the flexibility to engage with the lectures and the exercises at the times and pace that suit you although there will be a greater element of self-directed learning and less face to face contact with tutors and peers. However, open learning students do have a range of opportunities to interact with tutors and other participants both face to face and online. These include regular webinars and question and answer sessions (specifically for open learning students) as well as the intensive study periods and field trip (both of which are optional). Students find these interactions very rewarding and we therefore encourage you to participate as much as possible. However, we are also aware that for open learning students other commitments can mean that this is not always an option. In view of this, the programme has a flexible design which enables open learning students to carry out their studies even though they are not always able to participate in synchronous course activities. In particular, all webinar and question and answer sessions are recorded so that they can be picked up at a later time, and alternative exercises and assessments are available for those who are not able to attend the optional intensive study periods or the field trip.

Assessment

The assessment strategy aims for rigour, variety and the support of learning. Due to the "problem solving" nature of our teaching, there are no examinations, instead we use coursework to help promote a deep learning approach. A variety of coursework types is used so that you can develop and practice different skills. Examples include: report writing, presentations, essays, reflective work (journal entries and essays), quizzes to test knowledge and collaborative group assignments.

The programme team regard assessing and providing feedback on your coursework as a continuous process which allows for regular formative feedback. This gives you a clear idea of how well you are doing as well as time to act on feedback to improve on your work before final submission. Peer-reviews are also used to promote learning from each other and reflective learning. By having a coursework-only approach, the programme recognises that students and teaching staff have a joint responsibility for assessment and need to engage in a dialogue about all assessment practice, including feedback. This is central to the University's Assessment Compact.

Though not compulsory, the open-learning students are advised to have at least six months experience

in the industry prior to starting the course. Open-learning students who are in professional practice are encouraged to integrate their learning with their work-place environment and in the virtual classroom to enhance their knowledge and skills as professionals.

SECTION 6: ADMISSION TO THE PROGRAMME

6.1 ENTRY REQUIREMENTS

It is expected that candidates for the MSc Infrastructure and Sustainable Development will come from a wide range of backgrounds and experience. They may have worked in related fields and seek to enhance their capacity in infrastructure planning and/or development practice. A diversity of interests and skills is welcomed on this interdisciplinary programme. All applicants must however meet two requirements:

Education

1. A first class or upper second class honours degree or equivalent. We will also consider applications from candidates with relevant experience (or an alternative qualification) and demonstrable ability to study at master's level subject to a formal interview.
2. English as a mother tongue or IELTS 6.5 (paper/computer) or other appropriate evidence of English language skills, both oral and written, that meets the University and Programme requirements (see: <http://www.brookes.ac.uk/international/apply/english/>).

6.2 DBS AND OTHER PRE-COURSE CHECKS REQUIRED

Not applicable.

SECTION 7: PREPARATION FOR EMPLOYMENT

The programme sees the preparation of students for employment as an integrated process where the curriculum and the learning environment together contribute to provide students with opportunities that enhance their potential employability.

Opportunities within the curriculum

The curriculum for the programme was developed in close collaboration with industry and practitioners to provide a programme that responds to the requirements of potential employers, meeting industry's requests for MSc courses to involve more practical and interdisciplinary skills. This includes a strong practice based element to enhance employability and prepare students for the professional environment.

The MSc ISD adopts a collaborative approach to teaching which involves external industry speakers and practitioners in the delivery of the programme through the delivery of lectures, current case studies and participation in workshops. This helps to keep you abreast with current developments that will be relevant when you enter the workplace but also enables you interact with potential employers.

Learning Environment

The School of the Built Environment has a strong relationship with the University's Careers Centre. Together they organise a major built environment Careers Fair each autumn, where students can approach a wide range of planning consultancies, construction, real estate and other related companies for work experience and specific careers advice. Students are encouraged to use the facilities offered by the Careers Centre, including CV workshops, and practice interviews and assessment-centre activities.

The students undertaking the open learning mode of study at Oxford Brookes are often in employment and many are sponsored by their companies. Full-time and Open Learners have a number of opportunities to meet face to face if they attend the intensive study periods and the International Field trip as well as interacting online in discussion forums and on collaborative group work. Through these interactions, our full-time students are afforded the opportunity to develop global networks of contacts within industry. In addition, current students and alumni can interact through our active LinkedIn Alumni/Student Group.

Our strong linkages with the RTPI and other organisations such as the RICS, Constructing Excellence, Association for Project Management and the Project Management Institute, give students the opportunity to attend the many continual professional development events, lectures, seminars and workshops these organisations host. These events provide excellent opportunities for our students both to gain professional knowledge and to network with potential employers.