

PROGRAMME SPECIFICATION

1	Awarding Institution	Newcastle University
2	Teaching Institution	Newcastle University
3	Final Award	MSc
4	Programme Title	Sustainable Buildings and Environments
5	Programme Code	5186
6	Programme Accreditation	NA
7	QAA Subject Benchmark(s)	NA
8	FHEQ Level	7
9	Last updated	June 2011

10 Programme Aims

1. To provide a programme which complies with University policies and procedures and meets the requirements for a programme at level 7 of the FHEQ.
2. On completion of programme graduates are expected to demonstrate:
 - A critical understanding of socio-cultural and technical opportunities and barriers that underpin the design process of sustainable buildings and cities
 - A critical understanding of the interface between architecture and building performance and to be able to work at the integrative decision making processes between the two disciplines
 - An understanding of how buildings in use operate within their contexts; and reasons behind discrepancies between actual and forecasted energy consumption
 - An ability to design sustainable buildings and environments that reduce energy consumption without compromising human comfort and well being
 - A competence in using a number of building performance simulation tools

11 Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas.

Knowledge and Understanding

On completing the programme students should:

- A1 Demonstrate an understanding of how to design and assess existing buildings and environments for physiological comfort
- A2 Know how to test simulation results against regulatory benchmarks and make appropriate design decisions
- A3 Develop a critical understanding of theoretical approaches underpinning human behaviour and expectations of inhabited environments and be able to demonstrate this by use of building visualization tools
- A4 Understand how to undertake research and develop buildings and urban environments with architectural merit and a resilience to climate change

Teaching and Learning Methods

- Directed teaching and learning using lectures, workshops, and studio tutorials.
- Practical skills will be acquired through field visits, workshops on measurement tools and software analysis.
- Student led discussion seminars to deepen understanding of pertinent knowledge domains and critical thinking

Assessment Strategy

All assessments are designed to give the students the opportunity to apply the knowledge gained in the different modules to architectural design projects. All submissions will be in the

form of student projects that will be assessed by pin up crits, multimedia documents where building visualization techniques are employed and by written reports whenever specified by module leaders. All work submitted will be included in a final student bound portfolio which could be submitted to future employers.

The Portfolio assessment requires drawings of buildings with construction details using visualization techniques, which meet the assignment brief and stated assessment criteria.

Submission requirements need to

- Be submitted on time for both summative and formative critiques (Crit) as stated in the brief. Non-Submission must be accompanied by a written explanation to the Module Leader prior to the Crit.
- Have a clear declaration of how assignment brief aims and objectives are met using developmental sketches, technical drawings and an accompanying textual critique.
- Demonstrate research into a body of knowledge related to the project and reflect a particular range of skills and techniques appropriate to the specifics of the project.

Constructive written and oral feedback based on declared assessment criteria is handed to students after each Crit to support the development of ideas and project work leading to its final assessment as a coherent portfolio.

Students are expected to present the development of their ideas and project drawings, models among other media outputs to student-Led, tutor-Led critiques during the project and a final panel that usually consists of module tutors, external staff members or practitioners in the field

Intellectual Skills

On completing the programme students should:

B1 Acquire relevant knowledge and independent learning skills that promote life long learning as practitioners in this field

B2 Build an Interdisciplinary approach to decision making in architectural and urban design

B3 Be able to contribute to areas of research in the discipline

B4 Acquire and use methods to communicate and present building performance data and analysis

Teaching and Learning Methods

- Directed teaching and learning methods using lectures, workshops, and studio tutorials.
- Practical skills will be acquired through field visits, workshops on measurement tools and software analysis.
- Student led discussion seminars to deepen understanding of pertinent knowledge domains and critical thinking

Assessment Strategy

Assessment strategies to test students' engagement and understanding of lectures content and acquired skills will be based on the specifics of each module. The assessment strategy is detailed in the module descriptors. There are no sit down exams but instead there is a continuous process of formative and summative assessment in the form of seminars, one to one tutoring and project pin ups to engage the students in a continuous process of skills development.

Practical Skills

On completing the programme students should be able to:

C1 Using a number of building performance simulation tools that are utilized to underpin quantitative appreciation of building behaviour and its impact on occupant's well being against set benchmarks

C2 Use environmental parameters monitoring tools that enable students to measure and interpret results such as daylight levels, thermographic imaging results etc

C3 Use different communication tools, approaches and mediums to communicate

simulation results
 C4 Use building visualization models to communicate architectural design projects that are underpinned by design decisions which integrate sustainability considerations.

Teaching and Learning Methods

- Directed teaching and learning methods using lectures, workshops, and studio tutorials.
- Practical skills will be acquired through field visits, workshops on measurement tools and software analysis.
- Student led discussion seminars to deepen understanding of pertinent knowledge domains and critical thinking

Assessment Strategy

The portfolio projects used are designed to assess students' ability to use the simulation tools available, measure and interpret the results and communicate simulation results and architectural designs in appropriate ways.

Transferable/Key Skills

On completing the programme students should be able to:
 D1 Utilize a range of disciplinary theories and approaches in complex problem solving and decision making
 D2 Develop ethical, analytical and critical skills in acquiring knowledge
 D3 Work effectively in groups and as individuals
 D4 Develop academic writing skills

Teaching and Learning Methods

- Directed teaching methods using lectures, workshops, and studio tutorials.
- Practical skills will be acquired through field visits, workshops on measurement tools and software analysis.
- Student led discussion seminars that bring to the fore issues relevant to students' perspectives and engagement with learning

Assessment Strategy

The portfolio assessment will provide students with the opportunity to use a range of disciplinary theories and approaches in real life scenarios involving complex problem solving. The written component of the portfolio will allow students to demonstrate their mastery of academic writing. There is little formal assessment of groupwork except in ARC8017 (3D Modelling and Visualisation), but formative peer assessment of work is built into a number of modules. Ethical, analytical and critical skills will be developed in a number of modules, but in particular in ARC8107 (Researchers in Sustainability)

12 Programme Curriculum, Structure and Features

Basic structure of the programme

The Programme offers 3 distinct modules and a dissertation, while the rest of the modules are completely shared with other MSc courses and the MArch Part II.

Key features of the programme (including what makes the programme distinctive)

The aim of this Masters programme is to grow a new generation of architects that can respond creatively to the global challenge of sustainability and climate change. Unlike programmes offered elsewhere, this Masters degree does not simply educate professionals in design methods and performance simulation tools, it provides a grounding in the cultural, historical and psychological aspects of sustainability choices in design at both building and

city level. In doing so it draws upon the rich architectural and historically significant layering of Newcastle as a resource. The Design Studio project is underpinned by the knowledge gained in using simulation tools to predict the performance of new buildings as well as a grounded knowledge from lessons learnt from existing buildings.

Students undertaking this course share the design course with the students on the RIBA/ARB accredited route in Stage 5. While still expected to produce buildings with architectural merit; they will have a different approach to designing buildings. The knowledge base gained in semester one differentiates students undertaking this course as they are expected to be able to design sustainable buildings that respond to societal expectations that are underpinned by an ability to scientifically predict building performance using professional and empirical tools.

This Masters Programme will link to existing Masters programmes in Architecture and Design in the school providing opportunities for knowledge and cultural exchange for the benefit of all. Modules on the programme will also be offered to those students on RIBA accredited programmes in the school.

At the University level this programme links to the societal challenge on sustainability and reflects the values of the school in aiming to develop professionals who can make a difference to the world of practice. It is also intended that a number of these students will proceed to doctoral level research in what is one of the most dynamic fields of architecture and building science.

Programme regulations (link to on-line version)

<http://www.ncl.ac.uk/regulations/programme/>

13 Criteria for admission

Entry qualifications

- Completion of an Architectural course of study at a minimum of Part 1 in an accredited UK, European institution or an equivalent in a recognized qualification from an international institution
- A first degree qualification of at least a 2.1 or equivalent

Admissions policy/selection tools

- Architects who intend to spend one year in full time education
- Meeting entry qualification standards
- Proof of previous qualifications

Non-standard Entry Requirements

Additional Requirements

Level of English Language capability

IELTS 6.5 (or equivalent)

14 Support for Student Learning

The Student Services portal provides links to key services and other information and is available at: <http://www.ncl.ac.uk/students/>

Induction

During the first week of the first semester students attend an induction programme. New students will be given a general introduction to University life and the University's principle support services and general information about the School and their programme, as described in the Degree Programme Handbook. New and continuing students will be given

detailed programme information and the timetable of lectures/practicals/labs/ tutorials/etc. The International Office offers an additional induction programme for overseas students.

Study skills support

Students will learn a range of Personal Transferable Skills, including Study Skills, as outlined in the Programme Specification. Some of this material, e.g. time management is covered in the appropriate Induction Programme. Students are explicitly tutored on their approach to both group and individual projects.

Numeracy support is available through Maths Aid and help with academic writing is available from the Writing Centre (further information is available from the Robinson Library).

Academic support

The initial point of contact for a student is with a lecturer or module leader, or their tutor (see below) for more generic issues. Thereafter the Degree Programme Director or Head of School may be consulted. Issues relating to the programme may be raised at the Staff-Student Committee, and/or at the Board of Studies.

Pastoral support

All students are assigned a personal tutor whose responsibility is to monitor the academic performance and overall well-being of their tutees. In addition the University offers a range of support services, including one-to-one counselling and guidance or group sessions / workshops on a range of topics, such as emotional issues e.g. Stress and anxiety, student finance and budgeting, disability matters etc. There is specialist support available for students with dyslexia and mental health issues. Furthermore, the Union Society operates a Student Advice Centre, which can provide advocacy and support to students on a range of topics including housing, debt, legal issues etc.

Support for students with disabilities

The University's Disability Support Service provides help and advice for disabled students at the University - and those thinking of coming to Newcastle. It provides individuals with: advice about the University's facilities, services and the accessibility of campus; details about the technical support available; guidance in study skills and advice on financial support arrangements; a resources room with equipment and software to assist students in their studies.

Learning resources

The University's main learning resources are provided by the Robinson and Walton Libraries (for books, journals, online resources), and Information Systems and Services, which supports campus-wide computing facilities.

All new students whose first language is not English are required to take an English Language Proficiency Test. This is administered by INTO Newcastle University Centre on behalf of Newcastle University. Where appropriate, in-sessional language training can be provided. The INTO Newcastle University Centre houses a range of resources which may be particularly appropriate for those interested in an Erasmus exchange.

The students will be sharing studio facilities with students studying on the architecture course stage 5 (MArch). The studio offers drawing facilities which use both manual and CAD systems. In addition there are a number of high specification computers for running building environmental simulation programmes that are specific to students undertaking this programme. The sharing of studio facilities with MArch students is designed to maximize engagement between students and tutors on both programmes.

15 Methods for evaluating and improving the quality and standards of teaching and learning

Module reviews

All modules are subject to review by questionnaires which are considered by the Board of Studies. Changes to, or the introduction of new, modules are considered at the Board of

Studies and/or the School Teaching and Learning Committee. Student opinion is sought at the Staff-Student Committee and/or the Board of Studies. New modules and major changes to existing modules are subject to approval by the Faculty Teaching and Learning Committee.

Programme reviews

The Board of Studies conducts an Annual Monitoring and Review of the degree programme and reports to Faculty Teaching and Learning Committee. The FTLC takes an overview of all programmes within the Faculty and reports any Faculty or institutional issues to the University Teaching and Learning Committee.

External Examiner reports

External Examiner reports are considered by the Board of Studies. The Board responds to these reports through Faculty Teaching and Learning Committee. External Examiner reports are shared with institutional student representatives, through the Staff-Student Committee.

Student evaluations

All modules, and the degree programme, are subject to review by student questionnaires. Informal student evaluation is also obtained at the Staff-Student Committee, and the Board of Studies. The results from student surveys are considered as part of the Annual Monitoring and Review of the programme and any arising actions are captured at programme and School / institutional level and reported to the appropriate body.

Mechanisms for gaining student feedback

Feedback is channelled via the Staff-Student Committee and the Board of Studies.

Faculty and University Review Mechanisms

The programme is subject to the University's Internal Subject Review process. Every five years degree programmes in each subject area are subject to periodic review. This involves both the detailed consideration of a range of documentation, and a two-day review visit by a review team which includes an external subject specialist in addition to University and Faculty representatives. Following the review a report is produced, which forms the basis for a decision by University Teaching and Learning Committee on whether the programmes reviewed should be re-approved for a further five year period.

Accreditation reports

Additional mechanisms

16 Regulation of assessment

Pass mark

The pass mark is 50

Course requirements

Progression is subject to the University's Masters Degree Progress Regulations, Taught and Research and Examination Conventions for Taught Masters Degrees. Limited compensation up to 40 credits of the taught element and down to a mark of 40% is possible and there are reassessment opportunities, with certain restrictions.

The University employs a common marking scheme, which is specified in the Taught Postgraduate Examination Conventions, namely:

Summary description applicable to postgraduate Masters programmes

Summary description applicable to postgraduate Certificate and Diploma programmes

<50	Fail	<50	Fail
50-59	Pass	50 or above	Pass
60-69	Pass with Merit		
70 or above	Pass with Distinction		

Role of the External Examiner

An External Examiner, a distinguished member of the subject community, is appointed by Faculty Teaching and Learning Committee, following recommendation from the Board of Studies. The External Examiner is expected to:

- i. See and approve assessment papers
- ii. Moderate examination and coursework marking
- iii. Attend the Board of Examiners
- iv. Report to the University on the standards of the programme

In addition, information relating to the programme is provided in:

The University Prospectus: <http://www.ncl.ac.uk/postgraduate/>

The School Brochure <http://www.ncl.ac.uk/marketing/services/print/publications/ordering/>

Degree Programme and University Regulations: <http://www.ncl.ac.uk/regulations/docs/>

The Degree Programme Handbook

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided. The accuracy of the information contained is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.

Mapping of Intended Learning Outcomes onto Curriculum/Modules

Module	Type	Intended Learning Outcomes			
		A	B	C	D
ARC8106 Contrasting Sustainability Theory	Compulsory	3	1, 2, 3	3	2,3,4
ARC 8107 Researchers in Sustainability	Compulsory	2	1, 2, 3,4	1	1,2,3,4
ARC 8108 Dissertation	Compulsory	1,3,4	1,2,3,4	1,2,3,4	1,2,4
ARC 8109 Quantifying sustainability	Compulsory	1,2	1,2,3,4	1,2,3	1,2,3,4
ARC8052	Architectural Design Project in conjunction with Stage 5 in Architecture	3,4	1,2,3,4	1,4	1,3
ARC8017 Existing Module	3D Modelling and Visualisation		1,3,4	4	3