PROGRAMME DETAILS
Programme Code: A1D7-CCM
Department: Biology
Main Award: MSC - Master of Science
Full Award Title: Master of Science in Climate Change: Managing the Marine Environment
Level: Postgraduate Taught

LOCATION OF STUDY
| Location                | Edinburgh | Y          | Scottish Borders | N          | Orkney | N          | Dubai | N          | Malaysia | N          | Approved Learning Partner | N          | Independent Distance Learners | N          | Collaborative Learning Partner | N          | Other | N          |

ASSOCIATED AWARDS
<table>
<thead>
<tr>
<th>Programme Code</th>
<th>Award</th>
<th>Title</th>
<th>Program Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>A170-ZZZ</td>
<td>PGCERT</td>
<td>Postgraduate Certificate in Marine, Environment and Climate Change</td>
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</tr>
<tr>
<td>A1D5-CCM</td>
<td>PGDIP</td>
<td>Postgraduate Diploma in Climate Change: Managing the Marine Environment</td>
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<tr>
<td>A1D7-CCM</td>
<td>MSC</td>
<td>Master of Science in Climate Change: Managing the Marine Environment</td>
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</tbody>
</table>

ACCREDITATION
N/A

LEARNING OUTCOMES – SUBJECT MASTERY

Understanding, Knowledge and Cognitive Skills

- fundamentals of the main disciplines and associated technologies in managing impacts of climate change in the maritime environment
- comprehensive understanding and knowledge of the concepts, principles and theories of specialist technical issues
- the ethics and standards relevant to professional scientific and engineering practice
- the social, economic and environmental impact of change to marine ecosystems within an international framework

COGNITIVE SKILLS.

- transfer problem-solving skills to a variety of contexts
- integrate theory and practice
- apply numerical, scientific and management skills

CORE SKILLS

- communicate effectively at all levels and using a range of media
- work as part of a team and as a team manager
- plan and organise own learning through self-management and time management

Scholarship, Enquiry and Research (Research Informed Learning)
plan, conduct and analyse results of field surveys and exercises in climate change issues
- prepare and make a series of presentations on project and review work
- use a variety of sources to generate and evaluate ideas
- integrate scientific principles with knowledge/understanding of management of environmental issue in order to adopt a holistic approach to problem-solving
- analyse complex situations of a multi-disciplinary nature, and quantify and evaluate risks, to create solution strategies as appropriate to the particular context
- assess the environmental impact, economic aspects and feasibility mitigation and adaptation measures with respect to climate change

LEARNING OUTCOMES – PERSONAL ABILITIES

Industrial, Commercial and Professional Practice

PROFESSIONAL AWARENESS:

- appraise and develop continuously and effectively attributes linked to personal and professional aspirations
- adopt a mature, ethical and professional attitude to the solution of technical problems
- display professional attributes in situations which are challenging and demand responsibility, personal judgement and meaningful decision-making

Autonomy, Accountability and Working With Others
N/A

Communication, Numeracy & Information and Communications Technology
N/A

APPROACHES TO TEACHING AND LEARNING

The overall approach in the course to teaching and learning is a student-centred one, which is designed to encourage students to take increasing responsibility for their own learning and development as the course progresses. The main focus is on active learning. The requisite competencies related to Subject Mastery are acquired and developed through lectures, tutorials, group work, case studies, industrial projects. The practical component of the course reinforces the development of subject-specific skills through a combination of fieldwork, a comprehensive programme of site visits and desk study team and individual assignments. VISION/VLE materials are used as appropriate to enhance teaching and practical programmes. Personal abilities are developed primarily through the Personal Development Programme. During the course PDP moves gradually away from a staff-structured programme and increasingly becomes student-determined. PDP is structured around individual professional development portfolios and is developed by, for example, seminars, workshops, student-led seminars, small group meetings, one-to-one sessions, industrial projects and industrial experience. Communication skills are developed and reinforced throughout the course, as part of PDP and activities such as project and design work presentations to staff and students. Approaches to teaching and learning are continually reviewed and developed with the aim of matching them to the abilities and experiences of students, with regard also for the subject area. Specific details about teaching and learning methods are provided in the appropriate module descriptors.

EDUCATIONAL AIMS OF THE PROGRAMME

The importance is recognised of the need for an interdisciplinary approach to challenges inherent in major global climatic
changes on the atmospheric, terrestrial and marine environments. It is essential that scientists and future environmental decision-makers understand the fundamental causes and impacts of climate change and the potential mitigation and adaptation measures required to respond to the challenge. Scientists and engineers should be encouraged to adopt an understanding of the wider environmental, socio-economic and political aspects of climate change. This Masters degree has a modular structure providing sufficient flexibility to meet the wide variations in background of entrants - and their respective individual career plans. A major aim of the course is to provide students with training in holistic approaches to addressing and solving environmental problems specifically in the maritime environment and we strive to maintain a mix of entrants from different disciplines, from UK, EU and overseas, and from both recent graduates as well as entrants with industrial experience. This mix has previously proven extremely useful in widening the horizons of the individual class members in our related marine MSc A2K7 course established and running since 1986. The course has modules that aim to cover topics corresponding to priority areas of NERC's science strategy (2007-2012 - http://www.nerc.ac.uk/about/consult/strategy/documents/draft-strategy.pdf), particularly in marine sustainability and climate change. In addition, also covered within several modules are the general priority areas of Biodiversity, Environmental Risks and Hazards, Natural Resource Management, Pollution and Waste, and, as described above, all with an emphasis on an interdisciplinary approach. The aim of other training, such as collaborating with colleagues from other disciplines in teamwork exercises and generic and transferable skills included in the course, provides a good grounding for graduates to go into relevant employment and further study.

ASSESSMENT POLICIES

The assessment policy for the course incorporates a range of assessment types. Formative tests are scheduled during modules to provide feedback on performance and are used to inform further development. Continuous assessment during modules and summative assessment at the conclusion of modules both contribute to the overall assessment and are used to measure formally achievement in specified learning outcomes. Understanding, knowledge and subject-specific skills are assessed by a variety of means such as coursework assignments, unseen written examinations, group and individual projects and presentations. Personal abilities are reviewed by interviews based on individual professional development portfolios, self-assessment, performance review sessions and appraisal interviews which provide feedback on performance and assessment. Approaches to assessment are continually reviewed (details about methods of assessment are provided in the module descriptors). 

PROGRAMME STRUCTURE

Mandatory Courses

<table>
<thead>
<tr>
<th>Edinburgh</th>
<th>SBC</th>
<th>Orkney</th>
<th>Dubai</th>
<th>HWUM</th>
<th>IDL</th>
<th>Coll. Partner</th>
<th>ALP</th>
<th>Other</th>
<th>Stage</th>
<th>Semester</th>
<th>Phase</th>
<th>Course Code</th>
<th>Course Title</th>
<th>SCQF Cr</th>
<th>SCQF Lvl</th>
</tr>
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<tbody>
<tr>
<td>X</td>
<td>1</td>
<td>1</td>
<td>A</td>
<td>A11SM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Marine Resources and Sustainability</td>
<td>15</td>
<td>11</td>
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<tr>
<td>X</td>
<td>1</td>
<td>1</td>
<td>A</td>
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<td></td>
<td>Climate Change, Sustainability and Adaptation</td>
<td>15</td>
<td>11</td>
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<tr>
<td>X</td>
<td>1</td>
<td>2</td>
<td>A</td>
<td>A11MV</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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<td>Marine Environmental Monitoring</td>
<td>15</td>
<td>11</td>
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<tr>
<td>X</td>
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<td>B</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Applied Research Design and Analysis</td>
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<tr>
<td>X</td>
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<td>GIS for Marine and Environmental Scientists</td>
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<tr>
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<td>3</td>
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<td>ILES Environment Dissertation</td>
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### Optional Courses

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>SCQF Cr</th>
<th>SCQF Lvl</th>
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<tbody>
<tr>
<td>A11BT</td>
<td>Marine Biotechnology</td>
<td>15</td>
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<tr>
<td>A11DM</td>
<td>Marine Resource in the Blue Economy</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>A11VY</td>
<td>Practical Skills in Marine Surveying</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>A11EN</td>
<td>Environmental Processes</td>
<td>15</td>
<td>11</td>
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<tr>
<td>A11ER</td>
<td>Economics of Renewable Energy</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>A11EY</td>
<td>Energy in the 21st Century</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>A11MP</td>
<td>Introduction to Marine Planning</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>A11OC</td>
<td>Oceanography</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>A11TM</td>
<td>Diversity of Marine Organisms</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>A11WA</td>
<td>Marine Ecotoxicology</td>
<td>15</td>
<td>11</td>
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<tr>
<td>A11CR</td>
<td>Tropical and Coral Reefs: Monitoring and Management</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>A11DA</td>
<td>Development Appraisal</td>
<td>15</td>
<td>11</td>
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<tr>
<td>A11DT</td>
<td>Development Project</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>A11PL</td>
<td>Practical Skills in Marine Biotechnology</td>
<td>15</td>
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### COMPOSITION NOTES (PG)

- 8 taught courses (5 mandatory + 3 optional) plus a dissertation

#### Mandatory Credits
- 75

#### Optional Credits
- 45

#### Elective Credits
- 0

#### Dissertation Credits
- 60

#### Total Credits
- 180

### AWARDS, CREDITS AND CRITERIA (PG)

#### Awards, Credits and Levels

<table>
<thead>
<tr>
<th>Award</th>
<th>Overall Credits</th>
<th>Specific Requirements</th>
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</thead>
<tbody>
<tr>
<td>Masters Degree</td>
<td>180</td>
<td>180 SCQF credits including a minimum of 150 credit at Level 11</td>
</tr>
<tr>
<td>Postgraduate Diploma</td>
<td>120</td>
<td>120 SCQF credits including a minimum of 90 credit at Level 11</td>
</tr>
<tr>
<td>Postgraduate Certificate</td>
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<td>60 SCQF credits including a minimum of 40 credit at Level 11</td>
</tr>
</tbody>
</table>

#### Award Requirements

- **Master (Distinction)**
  - Total Course Passes: 8+Dissertation
  - Overall Mark: 70
  - Overall Grade: A
  - Basis of Overall Mark/Grade: Credit Weighted Average greater than or equal 70% over 8 courses at grades A-C plus a Dissertation at grade A.

- **Master**
  - Total Course Passes: 8+Dissertation
  - Overall Mark: 50
  - Overall Grade: C
  - Basis of Overall Mark/Grade: Credit Weighted Average greater than or equal 50% over 8 courses at grades A-D plus a Dissertation at minimum grade C.

- **Diploma (Distinction)**
  - Total Course Passes: 8
  - Overall Mark: 70
  - Overall Grade: A
  - Basis of Overall Mark/Grade: Credit Weighted Average greater than or equal 70% over 8 courses at grades A-C

- **Diploma**
  - Total Course Passes: 8
  - Overall Mark: 40
  - Overall Grade: D
  - Basis of Overall Mark/Grade: Credit Weighted Average greater than or equal 40%
A1D7-CCM Master of Science in Climate Change: Managing the Marine Environment

| Certificate | 4 | 40 | D | Credit Weighted Average greater than or equal 40% over 4 courses at grades A-E up to a maximum of 2 E grades |

**DURATION OF STUDY**

<table>
<thead>
<tr>
<th>IN MONTHS</th>
<th>Full-time</th>
<th>Part-time</th>
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</thead>
<tbody>
<tr>
<td>Masters</td>
<td>12</td>
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<tr>
<td>Diploma</td>
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<td>15</td>
</tr>
<tr>
<td>Certificate</td>
<td>6</td>
<td>12</td>
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</tbody>
</table>

**RE-ASSESSMENT (PG)**

1. A student who has been awarded a Grade E or F in a course may be re-assessed in that course. A student who has been awarded a Grade D in a course may be re-assessed in that course in order to proceed to or be eligible to receive the award of Masters.
2. A student shall be permitted only one re-assessment opportunity in a maximum of three taught courses. The opportunity for re-assessment in four or more taught courses shall be at the discretion of the Progression Board.
3. Any further re-assessment opportunities in a course will require the approval of the Postgraduate Studies Committee.
4. A student may be permitted, at the discretion of the Progression Board, to be re-assessed in the dissertation, project or other supervised research component of the course of study.

**PROGRESSION TO DISSERTATION/PROJECT**

To progress to Masters level an overall average of greater than or equal to 50% across the 8 taught courses is required. The 8 taught courses should be passed at Grade D or above.

For an award of MSc with distinction, all taught courses must be C grade or over and have an average A grade (70% and over).