

## **School of Geography & Geosciences**

### **Important Degree Information:**

#### **B.Sc./M.A. Honours**

The general requirements are 480 credits over a period of normally 4 years (and not more than 5 years) or part-time equivalent; the final two years being an approved honours programme of 240 credits, of which 90 credits are at 4000 level and at least a further 120 credits at 3000 and/or 4000 levels. Refer to the appropriate Faculty regulations for lists of subjects recognised as qualifying towards either a B.Sc. or M.A. degree.

#### **B.Sc./M.A. Honours with Integrated Year Abroad**

The general requirements are 540 credits over a period of normally 5 years (and not more than 6 years) or part-time equivalent; the final three years being an approved honours programme of 300 credits, of which 60 credits are gained during the integrated year abroad, 90 credits are at 4000 level and at least a further 120 credits at 3000 and/or 4000 levels. Refer to the appropriate Faculty regulations for lists of subjects recognised as qualifying towards either a B.Sc. or M.A. degree.

**Other Information:** In the case of students who spend part of the Honours Programme abroad on a recognised Exchange Scheme, the Programme Requirements will be amended to take into account courses taken while abroad.

<b>Degree Programmes</b>	<b>Programme Requirements at:</b>
(M.A. Honours or B.Sc. Honours): <b>Geography</b>	<p><b>Single Honours Geography:</b></p> <p><b>Level 1:</b> 40 credits comprising passes in GE1001 and GE1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p><b>Level 3 &amp; Level 4:</b> GE3001, GE3002, GE3004 and GE3005; <i>plus</i> either GE3006 or GE3007; <i>plus</i> either GE3008 or GG3011; <i>plus</i> GE4014, GE4018 and GE4019; <i>plus</i> 120 additional 3000 and 4000 level credits of which at least 90 credits must be from GE3025-GE3077, GE4026-GE4090 and/or GG3021-GG3089, GG4042-GG4073. Of the 240 credits required for an Honours degree, 90 credits must be at 4000 level.</p>

**Geography & Geosciences – Sub-honours 2007/08 – August 2007**

<b>Degree Programmes</b>	<b>Programme Requirements at:</b>
<p>(M.A. Honours):  <b>Geography and Art History, Classical Studies, Economics, English*, Film Studies, French^, Hebrew, International Relations, Italian^, Management~, Mediaeval History, Middle East Studies, Modern History, Philosophy, Psychology, Scottish History, Social Anthropology, Spanish^, Theological Studies.</b></p> <p>(B.Sc. Honours):  <b>Geography and Management~, Management Science, Mathematics, Statistics.</b></p> <p>^ available also as ‘With Integrated Year Abroad Degrees’</p> <p>~Timetable clash exists, therefore this combination is subject to arrangement with both Departments.</p> <p>* Timetable clash means that 2000 level English must be taken in the First year to do this combination</p>	<p><b>Geography element of Joint Honours Degrees:</b>  <b>Level 1:</b> 40 credits comprising passes in GE1001 and GE1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p><b>Level 3 &amp; Level 4:</b> 30 credits from GE3001, GE3002, GE3004, GE3005, either GE3006 or GE3007, GE3008, GG3011, GE4014; <i>plus</i> GE4018; <i>plus</i> 60 additional 3000 and 4000 level credits from GE3025-GE3077, GE4026-GE4090 and/or GG3021-GG3089, GG4042-GG4073. Of the 240 credits required for an Honours degree, 90 credits from Joint Honours subjects must be at 4000 level.</p>
<p>(B.Sc. Honours):  <b>Geography and Environmental Biology</b></p>	<p><b>Geography element of Joint Degree:</b>  <b>Level 1:</b> 40 credits comprising passes in GE1001 and GE1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p><b>Level 3 &amp; Level 4:</b> 30 credits from GE3001, GE3002, GE3004, GE3005, either GE3006 or GE3007, GE3008, GG3011, GE4014; <i>plus</i> GE4018; <i>plus</i> 60 additional 3000 and 4000 level credits from GE3025 – GE3077, GE4026 – GE4090 and/or GG3021 – GG3089, GG4042 – GG4073, GG4082. Of the 240 credits required for an Honours degree, 90 credits from Joint Honours subjects must be at 4000 level.</p>
<p>(M.A. Honours):  <b>Geography with Social Anthropology or Spanish^</b></p> <p>(B.Sc. Honours):  <b>Geography with French^</b></p> <p>^available also as ‘With Integrated Year Abroad Degree’</p>	<p><b>Geography element of Major Degrees:</b>  <b>Level 1:</b> 40 credits comprising passes in GE1001 and GE1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p><b>Level 3 &amp; Level 4:</b> GE3004, GE4014; <i>plus</i> any four of : GE3001, GE3002, GE3005, either GE3006 or GE3007, GE3008, GG3011; <i>plus</i> GE4018; <i>plus</i> 90 additional 3000 and 4000 level credits from GE3025-GE3077, GE4026-GE4090 and/or GG3021-GG3089, GG4042-GG4073. Of the 240 credits required for an Honours degree, 90 credits from major and/or minor subjects must be at 4000 level.</p>

<b>Degree Programmes</b>	<b>Programme Requirements at:</b>
<p>(M.A. Honours):  <b>Psychology, Russian<sup>^</sup>, Social Anthropology or Spanish<sup>^</sup> with Geography.</b></p> <p><sup>^</sup> available also as 'With Integrated Year Abroad Degree'</p>	<p><b>Geography element of Minor M.A. Degrees:</b>  <b>Level 1:</b> 40 credits comprising passes in GE1001 and GE1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p><b>Level 3 &amp; Level 4:</b> 80 credits from GE or GG 3000 and 4000 level modules, at least 60 credits of which must be from GE3025-GE3077, GE4026-GE4090 and/or GG3021-GG3089, GG4042-GG4073. Of the 240 credits required for an Honours degree, 90 credits from major and/or minor subjects must be at 4000 level.</p>
<p>(B.Sc. Honours):  <b>Mathematics with Geography</b></p>	<p><b>Geography element of Minor B.Sc. Degree:</b>  <b>Level 1:</b> 40 credits comprising passes in GE1001 and GE1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p><b>Level 3 &amp; Level 4:</b> 80 credits from GE or GG 3000 and 4000 level modules, at least 60 credits of which must be from GE3025-GE3077, GE4026-GE4090 and/or GG3021-GG3089, GG4042-GG4073. Of the 240 credits required for an Honours degree, 90 credits from major and minor subjects must be at 4000 level.</p>
<p>(B.Sc. Honours):  <b>Geoscience</b></p>	<p><b>Single Honours Geoscience:</b>  <b>Level 1:</b> 40 credits comprising passes in GS1001 and GS1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in GS2011 and GS2012</p> <p><b>Level 3:</b> 90 credits comprising GS3002, GS3004, GS3012, GS3081, GG3082, and GS3090 and 30 credits from the group GG3021**, GG3023, GG3036, GG3041, GG4042, GG3052, GG3056**, GG3057**, GG3058, GG4059, GG3067, GG3068, GG3069, GS4083, GS4084, GG3089*.</p> <p><b>Level 4:</b> 60 credits comprising GS4005, GS4006, GS4007, GS4008, and 60 credits from the group GS4085, GS4086, GG4082, GS4088, GG3021**, GG3023, GG3036, GG3041, GG4042, GG3052, GG3056**, GG3057**, GG3058, GG4059, GG3067, GG3068, GG3069, GS4083, GS4084*.</p> <p>*NB in addition to GS4005, GS4006, GS4007, and GS4008, at least 30 credits of other 4000-level modules must be taken over the 2 years of Junior and Senior Honours.</p> <p>** these modules are available only to students who have taken GE2011, GE2012</p>

**Geography & Geosciences – Sub-honours 2007/08 – August 2007**

<b>Degree Programmes</b>	<b>Programme Requirements at:</b>
<p>(B.Sc. Honours): <b>Geoscience and Chemistry</b></p>	<p><b>Geoscience - Chemistry Joint Degree:</b>  <b>Level 1:</b> 40 credits comprising passes in GS1001 and GS1002 and 40 credits comprising Pass or bypass for CH1001, pass in CH1004</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in GS2011 and GS2012 and 60 credits comprising passes at 11 or better in CH2101, either CH2102 or CH2103</p> <p><b>Level 3:</b> 120 credits comprising CH4512, CH3711, CH3521, CH3511, CH3721, CH3431 and GS3004, normally GS3081* and 1 from (GS4083 or GS4084).</p> <p><b>Level 4:</b> 120 credits comprising 3 from (CH4511, CH4611, CH4711, CH4712 and CH5711), CH4448§, CH5515, normally GS4083 or GS4084**, GS4005, GS4010, GS4009, 1 from (GS4088, GG3067, GG3068, GG3069 and GG3082)</p> <p>* With the approval of the Geoscience Adviser of Studies, a student may replace GS3081 and (GS4083 or GS4084) by 2 from GG3067, GG3068, GG3069, GG3082 in semester 2.</p> <p>** With the approval of the Geoscience Adviser of Studies, a student may replace GS4083 or GS4084 by a second module from the list GS4088, GG3067, GG3068, GG3069 and GG3082</p> <p>§With the approval of the Directors of Teaching, under some circumstances, students might conduct an integrated 35 credit project, ID4441, combining CH4448 with GS4009 and presenting a single, extended report.</p>
<p>(B.Sc. Honours): <b>Geoscience and Economics</b></p>	<p><b>Geoscience element of Joint Degree:</b>  <b>Level 1:</b> 40 credits comprising passes in GS1001 and GS1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in GS2011 and GS2012</p> <p><b>Level 3:</b> 60 credits comprising GG3082, GS3012, GS3081, GS3090</p> <p><b>Level 4:</b> 45 credits from GS4005, GS4006, GS4007, GS4009 and at least 15 credits from GG3089, or GS4082 – GS4088.</p>
<p>(B.Sc. Honours): <b>Geoscience and Environmental Biology</b></p>	<p><b>Geoscience element of Joint Degree:</b>  <b>Level 1:</b> 40 credits comprising passes in GS1001 and GS1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in GS2011 and GS2012 and Honours entry in the other subject</p> <p><b>Level 3:</b> 30 credits from GS3004, and 30 credits from the group GG3023, GG3067, GG3068, GG3069, GG3082.</p> <p><b>Level 4:</b> 30 credits from GS4005, GS4009, GS4010, and 30 credits from the group GG4082, GS4088, GG3023, GG3067, GG3068, GG3069, at least 15 credits of which must be at level 4000.</p>

<b>Degree Programmes</b>	<b>Programme Requirements at:</b>
<p>(B.Sc. Honours): <b>Geoscience and Management, Management Science</b></p> <p><b>Geoscience and Computer Science</b> (not available to students entering the University after 2002)</p>	<p><b>Geoscience element of Joint Degree:</b> <b>Level 1:</b> 40 credits comprising passes in GS1001 and GS1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in (GG2003, GG2004, GS2001, and GS2002) or (GS2011 and GS2012) and Honours entry in the other subject</p> <p><b>Level 3:</b> 30 credits from GS3004, and 30 credits from the group GG3023, GG3067, GG3068, GG3069, GG3082.</p> <p><b>Level 4:</b> 30 credits from GS4005, GS4009, GS4010, and 30 credits from the group GG4082, GS4088, GG3023, GG3067, GG3068, GG3069, at least 15 credits of which must be at level 4000.</p>
<p>(B.Sc. Honours): <b>Environmental Geoscience</b></p>	<p><b>Single Honours Environmental Geoscience:</b> <b>Level 1:</b> 40 credits comprising passes in GS1001 and GS1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in GS2011 and GS2012</p> <p><b>Level 3:</b> 75 credits comprising GG3002, GG3082, GG3089, GG3110, GS3012, GS3090 and 45 credits from GG3021**, GG3023, GG3036, GG3041, GG4042, GG3052, GG3056**, GG4057**, GG3058, GG4059, GG3067, GG3068, GG3069, GS3081, GS4084.</p> <p><b>Level 4:</b> 60 credits comprising GG4110, GG4120, GS4008 and 60 credits from the group GG3021**, GG3023, GG3036, GG3041, GG4042, GG3052, GG3056**, GG4057**, GG3058, GG4059, GG3067, GG3068, GG3069, GG4082, GS4085, GS4086, GS4088. ** these modules are available only to students who have taken GE2011, GE2012</p>
<p>(B.Sc. Honours): <b>Environmental Geoscience and Environmental Biology</b></p>	<p><b>Environmental Geoscience element of Joint Degree:</b> <b>Level 1:</b> 40 credits comprising passes in GS1001 and GS1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in GS2011 and GS2012</p> <p><b>Level 3:</b> 60 credits comprising GG3002, GS3012, GS3089, GS3090, GG3110</p> <p><b>Level 4:</b> 60 credits comprising GG4110, GG4120, GS4009 and at least 30 credits from GG3082, GG30067, GG3052, GG3069 or GS4088.</p>
<p>(B.Sc. Honours): <b>Environmental Geoscience and Economics or Management Science</b></p> <p>(M.A. Honours) <b>Environmental Geoscience and Management</b></p>	<p><b>Environmental Geoscience element of Joint Degree:</b> <b>Level 1:</b> 40 credits comprising passes in GS1001 and GS1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in GS2011 and GS2012</p> <p><b>Level 3:</b> 50 credits comprising GG3089, GG3110, GS3012, GS3090</p> <p><b>Level 4:</b> 45 credits from GS4009, GS4110, GS4120 and at least 15 credits from GG3052, GG3067, GG3069, GG3082 or GS4088.</p>

## Geography & Geosciences – Sub-honours 2007/08 – August 2007

<b>Degree Programmes</b>	<b>Programme Requirements at:</b>
<p>(B.Sc. Honours): <b>Environmental Geoscience with French<sup>^</sup></b></p> <p><sup>^</sup> available also as 'With Integrated Year Abroad Degree'</p>	<p><b>Environmental Geoscience element of Major Degree:</b>  <b>Level 1:</b> 40 credits comprising passes in GS1001 and GS1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in GS2011 and GS2012</p> <p><b>Level 3:</b> 60 credits comprising GG3023, GG3067, GG3082, GG3089, GG3110, GS3002, GS3012, GS3090, GS4083</p> <p><b>Level 4:</b> 60 credits comprising GG4110, GG4120, GS4008 and at least 30 credits from GG3052, GG3067, GG3069 or GS4088.</p>
<p>(B.Sc. Honours): <b>Geoscience with French<sup>^</sup> or Spanish<sup>^</sup></b></p> <p><sup>^</sup> available also as 'With Integrated Year Abroad Degree'</p>	<p><b>Geoscience element of Major Degree:</b>  <b>Level 1:</b> 40 credits comprising passes in GS1001 and GS1002</p> <p><b>Level 2:</b> 60 credits comprising passes at 11 or better in (GG2003, GG2004, GS2001, and GS2002) or (GS2011 and GS2012) and Honours entry in French</p> <p><b>Level 3:</b> 60 credits from GS3002, GS3004, GS3012, GS3090 and 30 credits from the group GG3021, GG3023, GG3036, GG3041, GG4042, GG3052, GG3056, GG3057, GG3058, GG4059, GG3067, GG3068, GG3069, GS3081, GG3082, GS4083, GS4084, GG3089</p> <p><b>Level 4:</b> 60 credits from GS4005, GS4006, GS4007, GS4008, and 30 credits from the group GS4085, GS4086, GG4082, GS4088, GG3021, GG3023, GG3036, GG3041, GG4042, GG3052, GG3056, GG3057, GG3058, GG4059, GG3067, GG3068, GG3069, GS3081, GS3082, GS4083, GS4084</p>
<p>(B.Sc. Honours): <b>Physical Geography &amp; Geoscience</b></p>	<p><b>Single Honours Physical Geography &amp; Geoscience:</b>  <b>Level 1:</b> 80 credits comprising passes in GE1001, GE1002, GS1001, GS1002.</p> <p><b>Level 2:</b> 120 credits comprising passes at 11 or better in GE2011, GE2012, GS2011 and GS2012.</p> <p><b>Level 3:</b> 75 credits comprising GE3001, GE3002, GE3006, GG3082, GS3002, GS3012 and GS3090, plus 45 credits from GG3021-GG3089, GG4042 – GG4082, GS3081, GS4083 or GS4084.</p> <p><b>Level 4:</b> 45 credits comprising GG4130, GS4007 and GS4010 plus 75 credits from GG3021-GG3110, GG4042-GG4120, GS3081 or GS4083-GS4088.</p> <p>Of the 240 credits required for an Honours degree: (1) at least 45 credits must be taken from GG3021-GG3069 or GG4042-GG4073; (2) at least 45 credits must be taken from GG3082-GG3110, GG4110-GG4120, GS3081 or GS4083-GS4088; (3) at least 90 credits must be at 4000 level.</p>

## Modules

### InterDisciplinary Modules (ID)

This School co-ordinates and contributes to the following InterDisciplinary modules –

**SD1002 Sustainability: ensuring our common future (Section 22)** and **ID2003 Science Methods (Section 23).**

## **Geography (GE) Modules**

### **GE1001 The Foundations of Geography**

Credits: 20.0 Semester: 1

Description: This module provides a general introduction to Human and Physical Geography. Some basic concepts of Human Geography - space and place, location and scale, distance and difference - are introduced and used to examine the nature of the human environment. Both contemporary and historical examples allow an exploration of these issues in a British setting, in an urban setting and in relation to world geographies. The Physical Geography component introduces the characteristics of global environmental systems: the lithosphere, atmosphere, hydrosphere and biosphere. These components are illustrated in the course of two one-day field trips.

Class Hour: 11.00 am

Teaching: Five lectures, one laboratory each week and 2 field days during the semester.

Assessment: Continuous Assessment = 67%, 2 Hour Examination = 33%

Re-Assessment: 2 Hour Examination = 33%, Oral Examination if continuous assessment is seriously deficient.

### **GE1002 Global Environmental Problems**

Credits: 20.0 Semester: 2

Description: This module explores the interrelationships between human activity and the physical environment in the context of the examination of some pressing global problems. The scientific, political, social and economic dimensions of such issues as population growth, global warming, desertification, food supply and the exploitation of natural resources are examined, and the potential for sustainable development is considered. The module illustrates the close interrelationship between human and physical geography and the need for a broad knowledge of both if we are to understand the nature of the global environmental problems that currently confront society.

Class Hour: 11.00 am

Teaching: Five lectures and one laboratory.

Assessment: Continuous Assessment = 67%, 2 Hour Examination = 33%

Re-Assessment: 2 Hour Examination = 33%, Oral Examination if continuous assessment is seriously deficient.

### **GE2011 Geographical Processes and Change**

Credits: 30.0 Semester: 1

Prerequisite: GE1001 and GE1002

Description: This module examines some fundamental processes in human and physical geography. The physical geography component of the module considers the operation of a range of atmospheric, hydrological and geomorphological processes. Topics include hydrometeorological processes, weathering, slope processes, fluvial processes, glacial processes and periglacial processes. The human geography component of the module explores the extraordinary character of the modern world from a range of geographical perspectives. Topics include the economic, historical, political and social geography of capitalism, imperialism, urbanisation and globalisation.

Class Hour: 9.00 am Monday-Friday, 2.00 – 6.00 pm Monday

Teaching: Four lectures per week plus two seminars, three tutorials, two practical classes and a Field Excursion during the semester.

Assessment: Continuous Assessment = 60%, 2 Hour Examination = 40%

Re-Assessment: 2 Hour Examination = 40%, Oral Examination if continuous assessment is seriously deficient.

### **GE2012 Processes, Perspectives and Ideas in Geography**

Credits: 30.0 Semester: 2

Prerequisite: GE2001

Description: The first part of the module extends the understanding of the physical and human world developed in GE2001 and explores the contemporary relevance of geography, using case studies of environmental problems and social inequalities in the developed world. The second part of the module then takes a holistic view of geography by examining some enduring themes which have fascinated geographers for centuries, before illustrating the potential for an integrated understanding of the world through a detailed case study of one world region (eg South Asia).

Class Hour: 9.00 am Monday-Friday, 2.00 – 6.00 pm Monday

Teaching: Four lectures per week plus two seminars, three tutorials, one practical class.

Assessment: Continuous Assessment = 60%, 2 Hour Examination = 40%

Re-Assessment: 2 Hour Examination = 40%, Oral Examination if continuous assessment is seriously deficient.

## **Geoscience (GS) Modules**

### **GS1001 Planet Earth and its Materials**

Credits: 20.0 Semester: 1

Description: The module provides an introduction to the fundamentals of the science of geology. The plate tectonic discoveries of the last 25 years provide a framework for the module which covers: (i) Introduction to geology and plate tectonics; (ii) mineralogy; (iii) igneous geology; (iv) metamorphic geology; (v) Gaia and Earth Systems science; (vi) Earth disasters; (vii) planetary science; (viii) introductory information technology in geoscience; (ix) group project exercise; and (x) two field excursions.

Class Hour: 12.00 noon

Teaching: Five lectures and one 3 hour laboratory.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

Re-Assessment: Coursework = 20%, 2 Hour Examination = 80%

### **GS1002 Earth Environments & Resources**

Credits: 20.0 Semester: 2

Description: The interplay between the Earth's internal processes and external form, the evolution of the Earth and of its life forms, and human uses of Earth materials are the themes of this module. The module covers: (i) Earth structure and interior; (ii) palaeontology; (iii) Earth history; (iv) Earth resources; (v) geological maps; (vi) sedimentary geology; and (vii) two field excursions.

Class Hour: 12.00 noon

Teaching: Five lectures and one 3 hour laboratory.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

Re-Assessment: Coursework = 20%, 2 Hour Examination = 80%

### **GS2011 Earth Systems I: Evolutionary Geosciences**

Credits: 30.0 Semester: 1

Prerequisites: GS1001 & GS1002

Description: This module aims to provide a broad understanding of some of the natural processes that have interacted through time to shape and modify our planet and its life forms. Methods and insights from the exciting new field of Earth Systems Science will be used to comprehend the hallmark features of Earth history, biospheric and lithospheric evolution and humankind's role in influencing environmental change. Lectures and laboratory classes are integrated with emphasis on recording and analysing geoscience information, fieldwork and presentational skills.

Class Hour: 10.00 am

Teaching: Five lectures and one 3 hour laboratory, and occasional tutorials.

Assessment: Continuous Assessment = 50%, 3 Hour Examination = 50%

Re-Assessment: Coursework = 20%, 3 Hour Examination = 80%

### **GS2012 Earth Systems II: Materials and Geodynamics**

Credits: 30.0 Semester: 2

Prerequisites: GS1001 & GS1002

Description: This module aims to give a broad understanding of the genesis of materials that comprise Earth and the processes that are involved in creating and modifying Earth's surface and lithosphere. Practical tools for the systematic recognition and accurate identification of solid Earth materials are emphasised. These provide the basis to interpret the physical conditions of formation and geodynamical evolution of the Earth System through time. A residential field course in the Easter vacation provides an opportunity to visit *in situ* many of the features covered in this module and so helps to pull the course together.

Class Hour: 10.00 am

Teaching: Five lectures and one 3 hour laboratory, and occasional tutorials.

Assessment: Continuous Assessment = 50%, 3 Hour Examination = 50%

Re-Assessment: Coursework = 20%, 3 Hour Examination = 80%

**The details of the Honours modules – that is 3000 and 4000 level modules – which relate to the programmes listed in this section, are available in the Honours Course Catalogue.**