

BSc(Hons) Gemmology and Applied Mineralogy

Faculty of Science



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Our programme

Kingston University's School of Geography, Geology and the Environment is the result of a merger between the Schools of Geography and Geological Sciences in the late 1990s. The School has a proud tradition of quality in teaching and research extending over fifty years. This was confirmed when the Education Funding Council rated our teaching quality as "excellent" in their national review of geology programmes. Research in Earth Sciences at Kingston was flagged as being internationally excellent in the Governments 2008 Research Assessment Exercise.

Gemmology spans a variety of disciplines. Its practitioners are frequently business people, often owning their own trading companies. They may be designers of fine jewellery. But at heart they need to understand the origin, structure and signature of the stones with which they work. The modern gemmology market is a fascinating, and increasingly complex one. The political and ethical boundaries within which gemmologists work are changing. How should the market treat conflict stones? How can these stones be identified? Increasingly subtle techniques are being used to generate synthetic stones and to treat stones – chemically or physically. What techniques can be used to recognise them?

Kingston's unique BSc degree in Gemmology and Applied Mineralogy aims to provide its graduates with the answers to some of these questions. We will recruit students with demonstrable prior learning and experience onto a one year course that will generate a BSc honours degree. Most students will have a professional background in gemmology (ideally holding the Diploma in Gemmology awarded by the Gemmological Association of Great Britain). This background will equate to a level of educational and professional development similar to that of the first two years of a normal British university honours degree.

Although there may be other routes into the degree, the subject matter and issues covered are designed to build on to the Gemmological Association Diploma. The core of the course will be to address the political and ethical boundaries within which gemmologists work and to identify the practical methods applicable to differentiating between natural stones and synthetic and treated materials. Lectures, practicals and seminars will address these issues.

As many students will be experienced professionals we have built sufficient flexibility into the course to ensure that rigorous attention to details of interest to them will be covered. We anticipate that a motivated group of professional people will, within the limits of the modular degree system, partly drive the direction that their degree program takes, through seminars, tutorials, discussion groups and dissertations and that they will build a network of contacts that will stand them in good stead many years after they have graduated.

And afterwards

We are aware that many students taking the degree in Gemmology and Applied Mineralogy have an extensive pre-entry background in the field of gemmology and are already working in the field. Our degree has been developed in consultation with the Gemmological Association of Great Britain. Graduates will be encouraged, if they wish, to continue their studies through the Kingston University Masters by Research program.

Research topics would be chosen in consultation with academic staff from both Kingston University and the Gemmological Association of Great Britain. Over a period of time the aim would be to address how modern analytical methods can support an experimental approach to the key issues facing gemmologists at the present.

Facilities

The Faculty of Science and the School of Geography, Geology and the Environment at Kingston University are well equipped with state-of-the-art analytical instrumentation.

Of particular relevance to the BSc in Gemmology and Applied Mineralogy is an advanced package of non-destructive imaging and analytical instrumentation. In addition to standard optical microscopy (with research microscopes wired for digital capture) are: a Zeiss EVO 50 Scanning Electron Microscope (SEM) with attached Oxford Instruments energy dispersive and wavelength dispersive analytical detectors and a Gatan Systems Cathodoluminescence detector; Linkam heating and freezing fluid inclusions stages; a Leica TCS SP2 Laser Confocal Microscope; a Renishaw RM1000 laser Raman microscope; a JEOL JEM 1010 Transmission Electron Microscope (TEM) and a Laser Inductively Coupled Mass Spectrometer (Laser ICP-MS).

All these packages will be introduced during the course and will be available for student use to support dissertation work.

Teaching and support

Each module comprises a total of 150 hours study time. This includes lectures, practicals (where relevant), seminars, and tutorials as well as private study. Coursework, which might include preparing seminars, posters, essays and reports is included within this time.

You will be trained and equipped with a wide range of analytical and practical techniques. Taught modules may be assessed by a combination of exam and coursework (normally with a ratio of 50:50) or may be assessed by coursework only. At this stage of a degree course we aim to assess student ability more by their practical skills and their conceptual understanding than their ability to reproduce taught material under exam conditions.

Why study Gemmology and Applied Mineralogy at Kingston University?

- We offer a unique opportunity to build on an internationally recognised diploma in gemmology to progress to a full honours degree with **ONLY** one year's extra study.
- We have new, purpose built mineralogy and petrology laboratories.
- We hold a wide range of state of the art analytical instrumentation including scanning and transmission electron microscopes, laser Raman and confocal laser microscopes, fluid inclusion microscopes.
- Our courses place an emphasis on practical and vocational skills.
- Our teaching quality has been rated "excellent" by government inspectors.
- Most staff in the School of Geography, Geology and the Environment are research active.

What you study

This is a one year (two years for part time students) Level 6 course which takes students with approved prior learning and training in the field of gemmology through to a full BSc honours degree.

The course is designed to develop an overview of the field of Gemmology and Applied Mineralogy. In particular we aim to synthesise the geological settings and evolution of gem and mineral deposits, explore modern analytical methods that may be applied to their analysis and which might shed light on their evolution, and to demonstrate how those methods may be used to address some of the critical issues in modern-day gemmology – especially those that relate to conflict stones, treated stones and synthetic stones.

The **Bridging Course** is a one-week introductory course which will involve a three-day residential field trip to south-west England to visit some of the mineralogical heritage of this world famous, metal-rich region. The bridging course will run in mid-September shortly before the start of the academic year.

The purpose of the bridging course is to introduce incoming students with a weak geological background to some basic geological concepts. We will build on these during the degree course when we discuss the geological controls on the origin of gem deposits and how gems from different regions can be distinguished.

It also enables incoming students to meet their new colleagues and to begin to team build and network. Key members of the staff team will be there to identify what the students wish, individually and as a complete group, to take out of the degree program. Students with a strong geological background may be excused attending the bridging course. However, they may find that they miss out on some important early discussions as new friendships and partnerships are built and priorities identified.

Study Skills and Research Methods is a Masters-level module that introduces students to the ethos and methodology of scientific research in the 21st century, improves their quality of scientific thought and procedure and provides extensive experience of the use of computers for data analysis and other applications.

Mineralogical Methods and Applications introduces students to the range of modern techniques available to investigate the physical and chemical properties of minerals (especially gemstones and related compounds) on micro and macro scales and develops a critical assessment of their application in the field of gemmology and applied mineralogy.

Geology and Mineralogy of Gems aims to develop an understanding of the geological setting of gem deposits, the magmatic and/or metamorphic processes responsible for their evolution together with later sedimentary reworking, the crystal structure of gem stones and the role of trace elements in controlling their nature.

Geology of Earth Resources focuses on the occurrence and distribution of the Earth's physical resources, including gemstones, and explores the geological controls of their evolution and the major theories for their genesis.



Want to know more?
[www.kingston.ac.uk/
gemmologymineralogy](http://www.kingston.ac.uk/gemmologymineralogy)

Recent Developments in Applied Mineralogy and Gemmology is an advanced critical thinking module which addresses key issues in the world of Gemmology, including the identification of treated and synthetic gems, and a critical evaluation of current socio-economic, environmental and political issues relating to mineral production and usage.

Igneous and Metamorphic Petrology explores the evolution of the main igneous and metamorphic rock suites and links fluid processes in the crust related to igneous and metamorphic activity to the evolution of gem and precious metal hosting pegmatites.

The Independent Project (Dissertation) double module enables the student to carry out a detailed piece of research on a topic of his or her choice. This includes formulating a research proposal, developing and implementing a research methodology and, in the course of writing up a dissertation, demonstrating the ability to develop a logical chain of thought and to handle data. Students joining the course will be encouraged to discuss potential projects with the Course Director beforehand, and, if possible, to bring suitable material with them.

Semester 1

- Research Methods and Data Analysis
- Mineralogical Methods and Applications
- Geology and Mineralogy of Gems
- Geology of Earth Resources

Semester 2

- Recent Developments in Applied Mineralogy and Gemmology
- Igneous and Metamorphic Petrology
- Dissertation (double module)

Part Time (indicative program)

Year 1

Semester 1

- Research Methods and Data Analysis
- Mineralogical Methods and Applications

Semester 2

- Recent Developments in Applied Mineralogy and Gemmology
- Igneous and Metamorphic Petrology

Year 2

Semester 1

- Geology and Mineralogy of Gems
- Geology of Earth Resources

Semester 2

- Dissertation (double module)



Further information

Entry requirements

Typical offer

Entry onto the one year level 6 BSc Honours degree is on the basis of approved prior learning or experiential learning.

Successful completion of the Gemmological Association of Great Britain Diploma in Gemmology (a nationally validated level 5 qualification) will provide unconditional access to the degree course.

Overseas students will need to demonstrate a sufficient grasp of written and spoken English. Typically this should be at IELTS level 6.0 or equivalent.

Other entry routes

Students who do not hold the Diploma but have other qualifications or experience should contact the Course Director (Prof Peter J Treloar) and discuss with him whether they are suitably qualified or would need to attain some extra learning prior to joining the course.

Contact details

Course and admissions enquiries

School of Geography, Geology & the Environment
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Surrey KT1 2EE
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E: UGScienceAdmissionEnquiries@kingston.ac.uk

Course Director

Prof Peter J Treloar BSc, PhD, CGeol, FMinSoc
E: p.treloar@kingston.ac.uk

Accommodation

T: +44 (0)20 8417 3829
accommodation@kingston.ac.uk
www.kingston.ac.uk/accommodation

Student Funding Service

T: +44 (0)20 8417 3560
www.kingston.ac.uk/studentfunding

Disability and Dyslexia Support Services

T: +44 (0)20 8417 4284/4252
Minicom: +44 (0)20 8417 4447
F: +44 (0)20 8417 4443
www.kingston.ac.uk/disability-and-dyslexia

International Office

T: +44 (0)20 8417 3411
www.kingston.ac.uk/international

UCAS codes

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Full time UK and overseas students need to apply through UCAS using code:

BSc (Gemmology and Applied Mineralogy) FJ61

Part time students need to contact the Course Director (Prof Peter J Treloar) who will ensure that the relevant form is forwarded to them.

Open days

Several open days are held each year. Please contact the admissions office or visit the University website for more details.
www.kingston.ac.uk/opendays

T: +44 (0)8700 841 347
E: admissions-info@kingston.ac.uk
www.kingston.ac.uk



Want to know more?
www.kingston.ac.uk/gemmologymineralogy

