Bringing you closer to energy
Our experience of delivering a wide range of energy related degree programmes, coupled with our world-class energy related research, and of course our geographical location in “Europe’s Energy Capital”, means we truly can bring our students closer to energy.

We offer energy-related Masters programmes across business, law, engineering, geosciences, natural sciences and computing. Coming five full-years of energy.

We are one of the very few Universities in the UK to be able to offer such a breadth of programmes, backed up with our academic knowledge and experience. A strong interdisciplinary focus in our teaching makes our graduates more attractive. We are also constantly moving with the industry and are proud to offer degree programmes that will ensure our graduates have a long-term career in their chosen sector and discipline.

Coming soon

We are delighted to announce the planned launch of three new energy related programmes for both full and part-time study due for entry in Sept 2017 including:

- MSc Decommissioning
- MSc Advanced Mechanical Engineering
- MSc Petroleum Data Management

Keep an eye on our website for more details.

Introducing the University of Aberdeen

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Aberdeen – the centre of the global energy industry

Aberdeen has become recognised globally as a centre for technological development, innovation and testing, which has made many of the globally adopted, modern day exploration and production techniques possible. A centre of subsea engineering excellence, the city is a successful exporter of technology, innovation and of course human talent and skills.

Naturally, this level of expertise has also positioned Aberdeen as a key city that will help support, drive and grow the emerging renewable energy industries. This, coupled with the future growth of decommissioning projects and the potential development of carbon capture initiatives, means Aberdeen will continue to have a major impact on the global energy industry for generations to come.
As an institution we are unique. We have built strong links with industry over a number of years and this directly benefits our students in key areas:

- Industry Advisory Boards supporting degree development
- Work placement opportunities
- Industry supported student projects
- Guest lecturing and industry seminars
- Industry funded events
- Industry visits and workshops

Better connected with industry
OUR GRADUATE BUSINESS SCHOOL DELIVERS A DIVERSE AND FLEXIBLE RANGE OF MSC DEGREE PROGRAMMES, INCLUDING A NUMBER OF HUGELY POPULAR ENERGY RELATED DEGREE PROGRAMMES.

Our MSc Petroleum Energy Economics and Finance programme is one of the most respected programmes of its kind in the world, attracting the very best talent from around the globe each year.

Our MBA Energy Management is designed specifically to help develop the business leaders of the future. It is perfectly placed in Europe’s Energy Capital to access the relevant knowledge that future leaders will require.

World renowned oil and gas economics expert Prof. Alan Kemp, actively teaches on our programmes so you get the chance to learn from the very best.

We are actively connected with the oil and gas, and wider energy industries. This means our students gain access to the latest industry thinking, challenges and solutions.

We also match our students with industry mentors which means you will gain a crucial level of one-to-one support from a professional already working in your field of interest.

We have students from 45 different nationalities studying in the School alone. This creates a positive learning environment and gives you the opportunity to make friends from around the world.

Our School of Law contains the highly respected Aberdeen University Centre for Energy Law (AUCEL) comprising one of the largest and most able teams of energy faculty in any European Law School.

The research centre was created in order to promote the research activities of the many members of the School having an interest in Energy Law matters, as well as fostering an environment for collaborative work.

The centre also provides a broad range of study options to professionals who are either already working in the sector or who are interested in moving into the area. Our programmes prepare lawyers for work in a complex and evolving context; the focus being not only upon current practice but also upon emerging trends.

We enjoy the benefit of being located within the University of Aberdeen, an institution with a proven track record of carrying out research across the whole spectrum of the energy sector.

The programmes
- MSc Petroleum Energy Economics & Finance
- MBA Energy Management
- MSc Strategic Studies and Energy Security
- LLM Energy & Environmental Law
- LLM Energy Law
- MSc Energy Politics & Law
- LLM Oil & Gas Law
MBA ENERGY MANAGEMENT

THE INCREASINGLY COMPLEX AND COMPETITIVE WORLD OF ENERGY CALLS FOR TALENTED PROFESSIONALS. OUR PROGRAMME HAS BEEN DESIGNED TO DEVELOP YOUR TALENT FURTHER BY DEVELOPING BOTH YOUR KNOWLEDGE BASE AND THE NECESSARY SKILLS TO BE ABLE TO PUT THIS KNOWLEDGE INTO PRACTICE. OUR MBA ENERGY MANAGEMENT WILL HELP YOU ADVANCE A CAREER IN THE ENERGY INDUSTRY.

Located in the Energy Capital of Europe, the University of Aberdeen plays a major role in the industry through research, consultancy, training and development.

Our programme was designed in consultation with leading industry professionals. Their input ensures the programme is aligned to industry competencies and skills needs.

To reinforce our connections with industry, the programme utilizes senior industry practitioners as Honorary Executive Fellows working alongside academics. As well as helping to ensure that the modules you will study are industry relevant these Executive Fellows will also play a mentoring role, helping you to develop yourself as industry ready.

IS THIS THE RIGHT COURSE FOR ME?

You already know the industry you wish to move into – or you are already there – and actively want to invest in a route, a deeper level of study, that accelerates your career in the high-growth global energy industry. By joining the programme, you will:

› Prepare to take on higher-level positions in the Energy Industry
› Connect with industry and specialist experts and obtain a global network
› Obtain core competency skills in areas such as Leadership, Project Management, Finance and Operations Management
› Be taught by faculty academics with an international profile

WHAT DO YOUR GRADUATES GO ON TO DO AND HOW MANY OF THEM FIND RELEVANT EMPLOYMENT?

Our Alumni have enjoyed much success in the workplace with University of Aberdeen Graduate Business School students securing employment with:

Bureau Veritas UK & Ireland, Ernst and Young, KPMG, Royal Bank of Scotland, Stork Technical Services, Talisman Energy, Google, TAQA, BP, Npower, Cibank.

WHAT YOU STUDY

The programme is continually assessed through portfolios of practice-focused assignments. These assignments provide you with evidence of industry relevant skills which will serve as a professional development record, invaluable in supporting your career progression.

The programme is delivered through lectures, workshops, role-play and simulation exercises. These modes emphasise action-oriented learning.

Core Courses
› Business Strategy
› Project Management
› Business and Money
› Value and Markets
› The Leadership Challenge
› Business Model Innovation
› Managing Self and Others
› Managing Change Innovation

Elective Courses
› Supply Chain Management
› Talking to Teams
› Internationalisation
› Energy Finance

The Graduate Business School has a track record of delivering MBA programmes for over 10 years.

The MBA (Energy Management) programme is a high calibre, relevant and exciting energy focussed programme built upon our established energy industry research and consultancy excellence.

Our research-intensive expertise is exemplified by the world renowned energy economist, Professor Alex Kemp. Moreover, 90% of our School faculty have PhDs – which means you’ll benefit from teaching by leading professors with research and professional expertise as well as close links to the industry.

The programme utilizes senior industry practitioners as Honorary Executive Fellows, who know both general management practices as well as skills unique to this industry.

Alternatively, if you’re looking to change your career pathway and find an opportunity to make that first step into this industry, then this specialist MBA is perfectly poised to give you a helping hand in your career, leveraging your foundation of good management skills.

The English language requirements is an IELTS of 6.5 with 6.0 in writing and reading (or equivalent TOEFL iBT or PTE). For more information – (www.abdn.ac.uk/study/international/english-requirements.php).

I chose to study at the University of Aberdeen as it is a world-class institution renowned for its outstanding academic publications as well as solid connections with the Energy sector.

CESAR SANCHES
MSc Petroleum Energy Economics and Finance
Riser Manager, Penspen

SCHOOL/DEPARTMENT
Business School

DURATION
12 months full-time
24 months part-time

INTAKE
September and January

ENTRY REQUIREMENTS
Minimum upper second class honours degree
3-5 years work experience, depending on role, with excellent management skills – either with OR without specific energy-sector experience. If you have accrued significant work experience in one industry and know your future lies in the thriving energy sector, why not specialise with experts on our MBA Energy Management programme, who know both general management practices as well as skills unique to this industry?

Course Information
www.abdn.ac.uk/pgt/energy-mgmt

School Information
www.abdn.ac.uk/business

General Information
www.abdn.ac.uk/study
facebook.com/universityofaberdeen
facebook.com/AbdnUnCops
@aberdeenuni
spalm@abdn.ac.uk
DEALING WITH SOME OF THE BIGGEST CURRENT CHALLENGES FACING OUR GLOBAL SOCIETY, THIS PROGRAMME LINKS ENERGY AND ENVIRONMENTAL TOPICS FROM MULTIPLE PERSPECTIVES OF DOMESTIC, REGIONAL, AND INTERNATIONAL LAW.

The unique aspect of the programme, and the factor which distinguishes this degree from its peers, is the close examination of the interlinked nature of energy and the environment as encapsulated by the concept of sustainable development. The programme looks at the current environmental challenges that characterise the world, including the organisation of our energy system in the 21st century.

Topics of study include: environmental damage in the upstream energy sector, law’s role in enabling a low carbon energy transition, the regulation of the green economy and the protection of our natural resources as a precondition for a sustainable future.

A core theme emphasised throughout this programme is that neither energy demands nor the case for environmental protection can be considered in isolation. Solutions at a local, national and global level must balance carefully these two, at times competing concerns, not least in the light of current claims for a transition to a low carbon society. In times of climate change and other pressing global concerns, no organisation, public or private, can avoid synthesising energy and environmental activities, no matter whether they wish to promote the latter or need to justify the former.

The speed at which energy law and environmental law are evolving, both upstream energy markets, including the licensing of electricity production and of unconventional hydrocarbons. 

WHAT YOU WILL BE TAUGHT

Teaching is organised on a modular basis. There are two 12-week semesters, the first in September, the second in January. Students can join the programme in either September or January. Examinations are held in December and May. The dissertation is submitted in August each year. You are strongly advised to consult the Law School webpages for updates to the programme syllabus.

HOW YOU WILL BE ASSESSED

Assessment is based on a combination of continuous assessment and written examination at the end of the relevant semester. Continuous assessment takes the form of presentations and written essays. In addition, you must complete a course in research skills and a dissertation on a topic within the specialism. The dissertation is prepared and written between March and August.

WHAT YOU STUDY

The following courses are available on the programme and you must complete four courses and a dissertation.

- International Energy and Environmental Law
- Low Carbon Energy Transition: Renewable Energy Law
- Oil and Minerals for Good
- Energy, Innovation and Law
- Low Carbon Energy Transition: Nuclear Energy and Carbon Capture and Storage
- Corporate Environmental Liability
- Principles of Environmental Regulation
- Downstream Energy Law
- Legal and Environmental Issues for Unconventional Hydrocarbons

SCHOOL/DEPARTMENT

School of Law

DURATION

12 months full-time
24 months or 36 months part-time

INTAKES

September or January

ENTRY REQUIREMENTS

The LLM in Energy and Environmental Law is targeted at both practising and aspiring lawyers, and those who work within, or are looking to work within domestic or multi-national companies, governmental and non-governmental institutions as well as international organisations.

The normal minimum entry requirement is a 2(i) Honours degree in Law, or another related discipline, or equivalent.

The English language requirements is an IELTS of 6.5 or equivalent TOEFL or PTE. For more information, visit www.abdn.ac.uk/study/international-english-requirements.php.

The programme prepares you for working in this challenging context. It encompasses a spectrum of courses which provide the opportunity to study the interconnected issues of energy provision, sustainable growth and climate change concerns.

The programme offers the unique opportunity to study the regulation of downstream and upstream energy markets, including the liberalisation of electricity and natural gas markets, access to pipeline infrastructure, licensing of electricity production and of upstream energy activities. It also focuses on the promotion of renewable energy sources.

Moreover, you can study investment protection in the energy sector and thereby gain knowledge of the rapidly developing field of international investment arbitration.

HOW YOU WILL BE TAUGHT

Teaching is organised on a modular basis. There are two 12-week semesters, the first beginning in September and finishing in December, the second at the end of January and finishing in May. Examinations are held in each semester, in December and May. The dissertation is planned and written between March and August.

HOW YOU WILL BE ASSESSED

Assessment is based on a combination of coursework submitted during the semester and a written examination at the end of the relevant semester. In addition, you must complete a course in research methods and a dissertation on a topic within the specialism.

As a full-time student, you will commence work on your dissertation in March, with a final submission date in August each year. Guidance on the writing of a dissertation is given.
MSc ENERGY POLITICS AND LAW

DESIGNED FOR STUDENTS WISHING TO DEVELOP AN ADVANCED KNOWLEDGE IN ENERGY MANAGEMENT, REGULATORY AGENCIES, STAKEHOLDER ENGAGEMENT, AND NGO/POLICY ADVISORY ROLES.

This programme will provide you with the ability to analyse political and legal energy issues and also provide you with a respected knowledge of economic energy economics. The programme will equip you with an in-depth, all round ability to analyse energy issues and enable you more easily to find employment in an energy-related activity.

Courses offered cover:
- The politics of energy and of electricity market reform
- How economics and legal issues affect political and commercial decisions in energy
- How the law affects the oil and gas industry
- Commercial and domestic international political regulation of energy markets
- The politics and law of renewable energy
- International energy security issues such as oil crises
- The law and politics of climate change

Due to our close relationship with industry, we are in a position to furnish opportunities for direct engagement through work experience or collaboration in writing dissertation projects with the energy industry.

The degree is ideal as a stand-alone programme to enhance your knowledge of this area to an advanced level.

WHAT YOU STUDY

Core courses:
- Energy Politics
- Introduction to Energy Economics
- International Energy Security
- Project

Electives:
- 1st semester: Either Low Carbon Energy Transitions Renewable Energy Law (30 credits) or Oil and Gas Law (30 credits)
- The project element may be based on work experience or collaboration with an energy industry organisation.

HOW YOU WILL BE TAUGHT

Teaching will be delivered through the Department of Politics and International Relations (PfR), the School of Law and the Business School. The Programme Director, Dr David Toke leads the teaching from PfR. He is recognised for his research and public policy impact in various areas of energy, including renewable energy and international energy policy comparisons.

HOW YOU WILL BE ASSESSED

Assessment methods vary from course to course and include essays, reports, exercises and presentations. Courses are generally 100% continuous assessment. The MSc in Energy Politics and Law requires you to pass the project and the five module courses.

SCHOOL/DEPARTMENT
School of Social Science

DURATION
12 months full-time
24 months part-time

INTAKES
September or January

ENTRY REQUIREMENTS

An upper second class honours degree in a relevant discipline, or equivalent professional experience, for instance in some aspect of energy. References are not required in order for applicants to submit an application. They are not usually required in order for a decision to be made but in certain cases applicants may be asked to provide a single academic reference at the request of the academic selector.

The English language requirements is an IELTS of 6.5 with 6.0 in writing and reading (or equivalent TOEFL iBT or PTE). For more information - (www.abdn.ac.uk/international/english-requirements.php).

LLM OIL AND GAS LAW

PROVIDING STUDENTS WITH THE OPPORTUNITY TO EXAMINE AND CRITICALLY ASSES KEY LEGAL ISSUES IN THE OIL AND GAS SECTOR BOTH IN THE UK AND IN OTHER LEADING JURISDICTIONS.

A key element in any successful oil and gas development is the appropriate legal environment, both regulatory and contractual. Our LLM in Oil and Gas Law will provide you with the skills and knowledge necessary to work in, and on the legal aspects of, this vital and exciting global industry.

The programme covers both private law aspects of the sector, such as joint ventures and contractual arrangements, and also public law and regulatory aspects, such as environmental protection, health and safety regulation and taxation.

The focus is upon setting practical and real problems in a wider conceptual context with the aim that you should not just know, but understand the relevant areas of oil and gas law. Although there is an emphasis on UK oil and gas law this is very much set in a global oil and gas context.

The University of Aberdeen Law School is fortunate in having one of the largest and most able teams of oil and gas faculty in any European law school. This enables the Law School to provide both strength and depth to the courses provided.

WHAT YOU STUDY

As part of the programme, you can take courses covering licensing and other methods of state control of hydrocarbon resources, commercial contracting, regulation of the oil and gas industry, principles of environmental law and maritime planning.

The intention is that by the end of the programme you will have developed the analytical skills and knowledge to provide you with a firm foundation for employment in the sector.

You must complete four courses and either a dissertation or, for those on the Professional Skills programme, the Oil and Gas Exploration and Production course in the Summer. At least three courses must be taken from the Oil & Gas Law course options from the list below. The fourth course can be taken from a different LLM programme.

Students on the Professional Skills Programme must take State Control of Hydrocarbons and Contracting in Hydrocarbon Operations.

Core courses:
- State Control of Hydrocarbons
- Energy, Innovation and Law
- Principles of Environmental Regulation
- Contracting in Hydrocarbon Operations
- Corporate Environmental Liability
- Downstream Energy Law
- International Investment Arbitration in the Energy Sector

Electives:
- Downstream Energy Law
- Energy, Innovation and Law
- Principles of Environmental Regulation
- Contracting in Hydrocarbon Operations
- Corporate Environmental Liability
- Downstream Energy Law
- International Investment Arbitration in the Energy Sector

SCHOOL/DEPARTMENT
School of Law

DURATION
12 months full-time
24 months or 36 months part-time

INTAKES
September or January

ENTRY REQUIREMENTS

The normal minimum entry requirement is a 2(i) Honours degree in Law, or another related discipline, or equivalent.

The English language requirements is an IELTS of 6.5 with 6.0 in writing and reading (or equivalent TOEFL iBT or PTE). For more information - (www.abdn.ac.uk/study/international/english-requirements.php).

HOW YOU WILL BE TAUGHT

Teaching is organised on a modular basis. There are two 12-week semesters, the first beginning in September, the second in January. Examinations are held in December and May. The dissertation is submitted in August each year.

Final assignments on the Professional Skills programme are also submitted in August.

WHAT YOU STUDY

Assessment is based on a combination of written examination at the end of the relevant semester and one or more course essays. The dissertation, in a topic within the specialisation, is planned and written between March and August each year. The Professional Skills Module is assessed through a combination of attendance at, and participation in, classes, preparatory work, two simulated practical exercises, and submission of two final assignments.

HOW YOU WILL BE ASSESSED

For the LLM Oil and Gas Law with Dissertation programme, after completing all of your taught courses, you will undertake a dissertation.

For the LLM Oil and Gas Law with Professional Skills, after completing the courses taught during the academic year, instead of undertaking the dissertation, students on this programme will take part in an intensive two-week course.

HOW YOU WILL BE TAUGHT

Teaching is organised on a modular basis. There are two 12-week semesters, the first beginning in September, the second in January. Examinations are held in December and May. The dissertation is submitted in August each year.

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ADDRESSING THE NEED FOR ECONOMIC AND FINANCE SKILLS, REQUIRED FOR COMPLEX DECISION-MAKING IN THE GLOBAL PETROLEUM AND ENERGY INDUSTRIES.

WHAT YOU STUDY
You will study the following:
- Economic Analysis - Equipping you with an understanding of micro and macroeconomic modelling techniques.
- Accounting - Providing you with an understanding of accounting information and financial reporting and introducing key aspects of financial analysis.
- Introduction to Corporate Finance - Equipping you with the analytical skills in order to understand the implications of corporate financing decisions and the theoretical underpinnings of corporate finance theory.
- Quantitative Methods - Introducing you to the statistical and quantitative methods used in economics and finance.
- Introduction to Energy and Petroleum Economics - Applying economic and finance principles to examine key issues in the petroleum and energy industries.
- Business Strategy - Providing a systematic approach to strategic thinking (game theory) and using its concepts to understand how businesses interact strategically.
- Real Options and Decision Making - Developing your analytical skills and understanding concerning investment decisions under uncertainty. You are introduced to methods of analysis of the benefits and costs of investment decisions and provided with an appreciation of how these are useful to decision makers in the petroleum and energy industries.
- Issues in Energy & Petroleum Economics - The further application of economics to key issues in the energy and petroleum sectors.
- Recent Topics have included: Petroleum Policies, Economic rents and their collection of to the state; Licensing and other policy issues, to name a few.
- Empirical Methods In Energy Economics - Applying a range of empirical methods to issues in energy including analysis of energy spot and future prices using time series econometric techniques and economic evaluation using Monte Carlo simulation.
- Dissertation - Dissertation Projects are completed during the summer months and cover a wide range of topics examining various economic and finance issues in the petroleum and energy industries. Opportunities also exist for you to undertake your dissertations in association with companies involved in the energy industry. Students will also summarise their dissertation in form of both posters, which are displayed to external audiences and a short oral presentation. You are given the opportunity to present your dissertation to fellow students and an invited audience - including local energy companies.

HOW YOU WILL BE TAUGHT
As well as formal teaching, you will benefit greatly from visiting speakers currently working in the Energy Industry.

HOW YOU WILL BE ASSESSED
A combination of in-course assessments, examinations, and dissertation.

MSc STRATEGIC STUDIES AND ENERGY SECURITY
DO YOU WORRY ABOUT THE ENERGY INDUSTRY BEING HELD TO RANDOM BY A HOSTILE TAKEOVER, SUPPLY FAILURE DUE TO WAR? THIS PROGRAMME UTILISES SOME OF ABERDEEN’S BEST KNOWN SUBJECTS AND INDUSTRIES, DRAWING ON THE ENERGY INDUSTRY KNOWLEDGE LOCALLY AND GLOBALY TO OFFER ADVANCED LEARNING IN STRATEGIC STUDIES AND ENERGY SECURITY.

WHAT YOU STUDY
- Strategic Theory
- Energy Politics
- Global Security Issue
- International Energy Security
- Dissertation in Strategic Studies

HOW YOU WILL BE TAUGHT
As well as formal teaching, you will benefit greatly from visiting speakers currently working in the Energy Industry.

HOW YOU WILL BE ASSESSED
Courses are assessed by comprehensive assessment or by written examination or a combination of these, as prescribed by each course co-ordinator.
I was attracted by the internationally recognised Oil & Gas LLM programme, the student facilities provided by the University and the presence of the petroleum industry in Aberdeen.

KATRINE JOKSTAD KVANVIK
LLM OIL & GAS LAW
ASSOCIATE, ARNTZEN DE BESCHE
LAW FIRM, NORWAY

MSc OIL AND GAS INNOVATION

CO-ORDINATED BY THE UNIVERSITY OF ABERDEEN, THIS INNOVATION PROJECT-LED DEGREE PROGRAMME WILL EQUIP GRADUATES WITH THE SKILLS AND COMPETENCIES TO GENERATE AND COMMERCIALISE INNOVATIONS FOR THE OIL AND GAS INDUSTRY.

OVERVIEW
The innovation project (75% of the degree) can be done in a company or University.

Who is it for?
- Graduates in engineering or science, who have the qualities and ideas required to become leaders in innovation.
- Technical staff who have identified an innovation or have expertise likely to yield innovative solutions and want to learn how to commercialise these.
- Business developers who have identified an opportunity to innovate in the oil and gas sector and seek to understand the framework of the industry and its supply chain.
- Managers or technical staff who are seeking innovative solutions for their challenges.

WHAT YOU STUDY

Innovate:
- Analyse problems related to the oil and gas industry and apply tools and techniques to identify opportunities for innovation.
- Understand the innovation process and the life-cycle associated with the development and implementation of solutions.
- Apply the innovation process within a formal engineering life-cycle management structure.
- Evaluate the current working practices of an organisation, promoting and supporting innovation.

Mature:
- Frame technical innovations in terms of market readiness.
- Develop appropriate business models and business plans.
- Plan and execute the moving of a technical innovation through to market readiness and adoption.

Validate:
- Prepare credible financial projections.
- Develop an innovation proposition, including a business plan.
- Analyse and respond to political, economic, social, technological, environmental and legal factors.
- Obtain Innovation funding:
  - Assess an innovation proposition and choose appropriate tools and techniques for performing this analysis.
  - Identify appropriate sources of funding.
  - Pitch/effectively communicate an innovation proposition.

Protect:
- Understand the scope for disputes, litigation and regulatory intervention, relevant to implementing an innovation in the oil and gas industry.
- Apply methods of intellectual property (IP) protection, appreciating the legal frameworks and practical aspects of intellectual property and freedom to operate.

HOW YOU WILL STUDY

The common (taught) parts of the programme will focus on the innovation and commercialisation processes with special reference to the oil and gas industry.

- The (taught) technical elective will provide knowledge and understanding of a specific technical area.
- All projects will have a significant business content, each project will take an innovation from one technology readiness level and progress it further towards commercialisation.

DURATION
12 months full-time (MSc)
24 months part-time (MSc)

The above indicates the minimum amount of time required to complete the programme. Students study up to two modules in each of the University’s semesters which start in September and January. Some students elect to study fewer modules, thereby extending the time taken to complete the programme.

INTAKE
September

ENTRY REQUIREMENTS
To have a 2:1 (upper second class) UK Honours degree (or an Honours degree from a non-UK institution which is judged by the University to be of equivalent worth) in an Engineering or Science subject.

Those with alternative qualifications and substantial relevant experience will be considered on a case-by-case basis.

NEW COMBINED PROGRAMME

KOORDINATED BY THE UNIVERSITY OF ABERDEEN, THIS INNOVATION PROJECT-LED DEGREE PROGRAMME WILL EQUIP GRADUATES WITH THE SKILLS AND COMPETENCIES TO GENERATE AND COMMERCIALISE INNOVATIONS FOR THE OIL AND GAS INDUSTRY.

DURATION
12 months full-time (MSc)
24 months part-time (MSc)

The above indicates the minimum amount of time required to complete the programme. Students study up to two modules in each of the University’s semesters which start in September and January. Some students elect to study fewer modules, thereby extending the time taken to complete the programme.

INTAKE
September

ENTRY REQUIREMENTS
To have a 2:1 (upper second class) UK Honours degree (or an Honours degree from a non-UK institution which is judged by the University to be of equivalent worth) in an Engineering or Science subject.

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12 months full-time (MSc)
24 months part-time (MSc)

The above indicates the minimum amount of time required to complete the programme. Students study up to two modules in each of the University’s semesters which start in September and January. Some students elect to study fewer modules, thereby extending the time taken to complete the programme.

INTAKE
September

ENTRY REQUIREMENTS
To have a 2:1 (upper second class) UK Honours degree (or an Honours degree from a non-UK institution which is judged by the University to be of equivalent worth) in an Engineering or Science subject.

Those with alternative qualifications and substantial relevant experience will be considered on a case-by-case basis.
Our Subsea Engineering programme is one of the most respected engineering programmes of its kind in the UK. Aberdeen is recognised worldwide as a key centre of subsea engineering excellence, innovation and testing. Interlinked with key Subsea companies you get the chance to interact with these companies in many ways during the programme.

We deliver teaching in world class facilities, including laboratories dedicated to particular areas of work such as:
- satellite communications
- computer aided design
- electrical machines
- materials testing
- laser welding
- hydraulics and fluids
- concrete
- large structures
- geotechnics.

Our programmes are designed and reviewed with the support of an Industry Advisory Board. All our MSc programmes offer students the chance to complete dissertation projects which are supported by industry. This gives you the opportunities to gain exposure to current industry challenges and thinking as well as build up vital industry connections.

The School has produced thousands of world-class graduates over the decades, many who have now progressed into Managing Director, Chief Executive roles in the oil and gas and wider energy industries.

Where relevant, our engineering degrees draw on the support of our expert colleagues in geology, chemistry, computing and maths to help deliver key courses.

We have a world-class team of engineering academics from around the globe undertaking teaching and research across the School.

If you have a UK equivalent of a 2:1 degree in a branch of engineering then you stand a very good chance of acceptance onto one of the MSc Engineering programmes. Depending on the nature of the subject, we do also consider other degrees and experience in other key science subjects. Full details of entry requirements are on the individual programme information pages that follow, but the below table looks to give you a simple summary of where the different undergraduate degree subjects fit in.

<table>
<thead>
<tr>
<th>Undergraduate Degree Subjects</th>
<th>O&amp;G Engineering</th>
<th>O&amp;G Structural</th>
<th>Project Management</th>
<th>Renewable Energy</th>
<th>Safety &amp; Reliability</th>
<th>Subsea Engineering</th>
<th>Petroleum Engineering</th>
<th>Process Safety</th>
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Introducing Engineering

Our programmes are accredited by a number of professional bodies, offering you the assurance they meet the highest professional engineering standards.

Coming soon

Engineering is delighted to announce the launch of two new energy related programmes for both full and part-time study due for launch in 2017 including:
- MSc Decommissioning
- MSc Advanced Mechanical Engineering

Keep an eye on our website for more details.

abdn.ac.uk/study

The University’s excellent reputation in engineering teaching and its close links with industry was too good an opportunity to miss.

ALAN ROSS, MSc SUBSEA ENGINEERING ANALYSIS ENGINEER, SUBSEA 7

Full details of entry requirements are on the individual programme information pages that follow, but the below table looks to give you a simple summary of where the different undergraduate degree subjects fit in.
MSc OIL AND GAS ENGINEERING

THESE PROGRAMMES HAVE BEEN DESIGNED TO PROVIDE STUDENTS WITH A DETAILED KNOWLEDGE OF THE TECHNOLOGY REQUIRED TO PURSUE A CAREER IN THE OIL AND GAS INDUSTRY. THE PROGRAMME GIVES STUDENTS BOTH A THEORETICAL AND PRACTICAL GROUNDING IN THE KEY AREAS OF THE UPSTREAM AND DOWNSTREAM INDUSTRY.

The programme is constantly updated to reflect the current and future needs of the oil and gas industry. One of the main features of the MSc Programme is its interdisciplinary nature, being suitable for students with mechanical, civil, electrical, chemical and other relevant engineering backgrounds. The future of the industry depends on talented, enterprising people - like those who make up our community of innovators. The University of Aberdeen has a proven track record of preparing graduates for careers in engineering. An engineering degree from the University of Aberdeen will put you in a position to establish business links whilst developing your academic skills. This programme will expose you to the key elements of the oil and gas lifecycle, including both Upstream and Downstream. You will have a wide knowledge of the industry which will open up a broader range of career paths.

WHAT YOU STUDY

- Reservoir Engineering
- Fundamentals of Petroleum Geoscience
- Project Management
- Fundamental Safety Engineering & Risk Management Concepts
- Flow Assurance
- Facilities Engineering
- Oil and Gas Chemistry
- Well and Production Engineering

Individual Project
This is normally specified in collaboration with industrial partners, supervised either in the School of Engineering or in the companies. Please note that an industry placement is not compulsory and cannot be guaranteed.

If you are registered for the MSc degree, you will start your project after the written examinations in May. Submitted projects are then examined by our external examiners, who make an oral examination of some students on all aspects of the programme.

Examples of projects undertaken by previous students include:
1. Comparison of analytical and numerical horizontal well productivity calculations for a fluvial/deltaic reservoir
2. Production tubing size and gas lift optimisation for deepwater subsea development
3. The use of polymer flooding to boost oil recovery in the North Sea

HOW YOU WILL BE TAUGHT
The taught part of the programme consists of two semesters. In addition, a number of industrially-based external lecturers contribute to the programme to give examples of how theoretical concepts are currently being applied in industry.

HOW YOU WILL BE ASSESSED
The principal method of student assessment is through written examinations. Examinations for the first semester courses are in December and those for the second semester are in May.

ACCREDITATION
This programme is fully accredited by the Institute of Mechanical Engineers (MimI) and the Energy Institute (EI).

SCHOOL/DEPARTMENT
School of Engineering
DURATION
12 months full-time (MSc)
INTAKES
September & January
ENTRY REQUIREMENTS
Our minimum entry requirement for this programme is a UK Honours degree (or an honours degree from a non-UK institution which is judged by the University to be of equivalent worth) in any branch of Engineering at a 2:1 (upper second) class or above, or Honours degree in Maths or Physics at 2:1 or above with the approval of the Programme Co-ordinator.

All international students, even if you have been educated in the medium of English, must meet our English Language requirements. (www.abdn.ac.uk/study/international/English-requirements.php)

This programme requires that you meet the Postgraduate Standard level of English proficiency.

Available as part-time (by distance learning) only, this MSc programme is normally taken over three years (maximum of 6 years will be permitted), consisting of two modules at a time in each of the two semesters, in each year.

The programme attracts students from right across the world making the learning experience truly international.

The programme is aimed at you, as a practising structural engineer. Therefore, whilst a good honours degree is a prerequisite, this MSc also requires you to have practical structural engineering experience, to provide the context for the taught material.

Class interaction with each other, and with the tutor, is via module-specific online discussion boards and emails.

WHAT YOU STUDY
- Design of Connections
- Fatigue and Fracture Mechanics
- Conceptual Design of Top-Side Structures
- Blast and Fire Engineering
- Borefield Engineering
- Petrochemical Structural Engineering
- Finite Element Methods
- Conceptual Design of Jetties and Subsea Structures
- Design of Stiffened Plates
- Re-Assessment of Existing Structures by Structural Reliability Analysis
- Design of Jacket Attachments

Half of the modules are delivered by structural engineers well respected for their experience and expertise in the oil and gas industry in Aberdeen, from a variety of companies.

The remaining modules are delivered by the University of Aberdeen academics.

This mix of industry and academia has produced a high value, demanding programme delivering in-depth fundamental understanding and practical application.

The modules have been selected to provide maximum relevance to current and future Industry requirements. The modules listed are subject to constant monitoring and re-appraisal by an Advisory Board of Industry Representatives.

HOW YOU WILL BE TAUGHT
To enable you to remain in your employment, the MSc is only available as a Part-Time programme and is taught entirely via the University’s online virtual learning environment. The internet delivery is a staged release of teaching materials and coursework assignments with online quizzes after each teaching block. Teaching blocks are normally three weeks apart. Half of the modules will also have an end of module Examination - in January or May/June - which can either be at Aberdeen or at an agreed Higher Education establishment/British Council office convenient for the student’s own location anywhere in the world.

PLEASE NOTE: THIS PROGRAMME IS ONLY OFFERED AS A PART-TIME, DISTANCE LEARNING OPTION.

HOW YOU WILL BE ASSESSED
Assessment is by a mix of examination and coursework for most modules with half of the modules being by course work alone.

ACCREDITATION
Fully accredited by the Institution of Civil Engineers (ICE), the Institution of Structural Engineers (IStE), the Institute of Highway Engineers (IHE) and the Chartered Institution of Highways & Transportation (CIHT).

Available as part-time (by distance learning) only, this MSc programme is normally taken over three years (maximum of 6 years will be permitted), consisting of two modules at a time in each of the two semesters, in each year.

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Assessment is by a mix of examination and coursework for most modules with half of the modules being by course work alone.

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PLEASE NOTE: THIS PROGRAMME IS ONLY OFFERED AS A PART-TIME, DISTANCE LEARNING OPTION.

HOW YOU WILL BE ASSESSED
Assessment is by a mix of examination and coursework for most modules with half of the modules being by course work alone.

ACCREDITATION
Fully accredited by the Institution of Civil Engineers (ICE), the Institution of Structural Engineers (IStE), the Institute of Highway Engineers (IHE) and the Chartered Institution of Highways & Transportation (CIHT).
MSc PETROLEUM ENGINEERING

DESIGNED WITH INDUSTRY AND AIMED AT PRODUCING WORLD CLASS PETROLEUM ENGINEERING PROFESSIONALS THAT ARE FULLY PREPARED TO TAKE UP KEY ROLES IN THE UPSTREAM OIL AND GAS INDUSTRY. QUALIFIED PETROLEUM ENGINEERS ARE IN HIGH DEMAND AROUND THE GLOBE.

This industry focussed programme consists of courses which will enable you to develop your skills in, and understand the fundamental aspects of petroleum engineering. There is a particular focus on formation evaluation and reservoir engineering and simulation, and it will let you develop your skills so you are able to appraise and select the appropriate technologies for safe production and enhancing the recovery of hydrocarbon oil and gas.

The programme will equip you with the necessary knowledge and skills required for an integrated study and evaluation of a prospect leading to a viable oil and gas field development plan. Hands-on experience of using industry standard simulation software in all aspects of petroleum engineering is developed within the taught courses.

The University of Aberdeen has a proven track record of preparing graduates for the energy industry. You will benefit from research active staff, and from close proximity and good working relationships with industry. Aberdeen is recognised as the Energy Capital of Europe. This puts the University in a unique position of being able to offer a petroleum engineering curriculum that is highly relevant to the needs of employers, alongside cutting-edge research. A degree from the University of Aberdeen will put you in a unique position to develop crucial business links alongside your learning.

WHAT YOU STUDY

› Fundamentals of Petroleum Geoscience
› Petrophysics, Core Analysis and Formation Evaluation
› Reservoir Engineering
› Enhanced Oil Recovery
› Reservoir Simulation
› Well and Production Engineering
› Well Testing: Analysis and Design
› Field Development and Petroleum Economics

Project/Dissertation

As a full-time student, taking the MSc Programme over 12 months, a dissertation is to be prepared on work undertaken during the final individual project, which will normally be specified in collaboration with industrial partners, supervised either in the School of Engineering or in the companies, and carried out from May to September.

HOW YOU WILL BE TAUGHT

The taught part of the programme is delivered over two semesters: September to late December, and January to May. The courses are taught by staff from the School of Engineering and School of Geosciences. In addition, a number of industrial-based external lecturers contribute to the Programme to give examples of how theoretical concepts are currently being applied in industry.

After the written examinations in May, students registered for the MSc degree will commence an industry-based project where this can be arranged or school-based project, and at the end of this period, an individual project report, in the form of a dissertation, has to be handed in and examined. Oral examination of some students on all aspects of the programme may be required by the External Examiner. The final assessment takes account of performance in all parts of the programme and examinations.

HOW YOU WILL BE ASSESSED

The principal method of assessment is through end of course written examinations and continuous assessment. Examinations for the first semester courses are in December and those for the second semester are in May. Candidates are normally expected to pass all examinations and all projects submissions. As an MSc student, you must submit a dissertation on your project, and may be required to undergo an oral examination.

MSc PROCESS SAFETY (CHEMICAL ENGINEERING)

THE PROGRAMME WILL DELIVER THE INDUSTRY WITH HIGHLY EMPLOYABLE, PROCESS SAFETY PROFESSIONALS THAT UNDERSTAND INDUSTRY PRESSURES COUPLED WITH A DETAILED UNDERSTANDING OF OPERATIONAL SAFETY AND RISK ASSESSMENT.

School Information

› University website: www.abdn.ac.uk
› School of Engineering: www.abdn.ac.uk/engineering

General Information

› Course information: www.abdn.ac.uk/study/programmes
› School information: www.abdn.ac.uk/engineering
› General Information: www.abdn.ac.uk/study

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facebook.com/AbdnUnicOps
@abderdeenuni
cpsgrad@abdn.ac.uk

Working closely with leading industry organisations and ICHEM, we have developed what we believe to be a truly distinctive and leading MSc Process Safety degree programme.

With a focus on advanced chemical engineering breadth and depth in process safety, we are reaching out to individuals that have the desire and skills to become qualified Process Safety Engineers and who are from a Chemical Engineering background, or a Petroleum or Mechanical Engineering background but with good chemical/chemistry knowledge. This programme examines the primary technologies and equipment used, as well as the operations involved in upstream oil and gas processing. You will be exposed to the major issues and challenges facing industry and develop a professional approach to managing these accordingly.

A major component of the programme is understanding and managing risk. You will be introduced to the tools and processes used to identify, assess and manage risk, taking factors into account, including process operations and human factors.

Our School of Engineering works extremely closely with organisations operating in the oil and gas industry. This is an historic working relationship, dating back to the very early days of North Sea oil and gas production and it is a relationship that offers tremendous opportunity to our students. Example benefits include, MSc student projects, on-campus guest lectures and industry case studies. Being so close to the industry also gives students the opportunity to network with what could very well be future employers.

WHAT YOU STUDY

Evidence suggests that there is currently limited provision and access to postgraduate level study in this field. Our programme, which gives current engineering and science graduates a tremendous opportunity to further their career

› Process Risk Identification and Management
› Upstream Oil & Gas Processing
› Loss of Containment
› Computational Fluid Dynamics
› Applied Risk Analysis & Management
› Process Plant, Equipment and Operations
› Process Design, Layout & Materials
› Human Factors Engineering
› Individual Project in Process Safety

HOW YOU WILL BE TAUGHT

The Programme consists of two semesters: September to December, and January to May.

After the written examinations in May, students registered for the MSc degree start an industry-based project where this can be arranged or school-based project, and at the end of this period, an individual project report, in the form of a dissertation, has to be submitted and examined. Oral examination of some students on all aspects of the programme may be required by the External Examiner. The final assessment takes account of performance in all parts of the programme and examinations.

HOW YOU WILL BE ASSESSED

The principal method of student assessment is through written examinations. Candidates are normally expected to pass all examinations and all projects submissions. MSc candidates must submit a dissertation on their project, and may be required to undergo an oral examination.

Course Information

www.abdn.ac.uk/study/programmes

School Information

www.abdn.ac.uk/engineering

General Information

www.abdn.ac.uk/study

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facebook.com/AbdnUnicOps
@abderdeenuni
cpsgrad@abdn.ac.uk
MSc PROJECT MANAGEMENT

EMPOWERING TOMORROW’S MANAGERS THROUGH PROVIDING A SOLID GROUNDING IN THE PRINCIPLES AND PRACTICE OF PROJECT MANAGEMENT.

THESE SKILLS ARE CURRENTLY IN VERY HIGH DEMAND AND ESSENTIAL TO THE FINANCIAL AND OPERATIONAL SUCCESS OF PROJECTS ACROSS ALL INDUSTRIES.

HOW YOU WILL BE TAUGHT

The university requires that all 15 credit courses require about 250hrs study. The teaching is done over five weekends each semester but students are expected to undertake additional independent study.

HOW YOU WILL BE ASSESSED

The modules are assessed by a combination of coursework and written examination. The distance learning coursework is submitted to the course tutor electronically and marks and comments will be returned. The on-campus submission is either by email or in person at teaching sessions. If you are a distance-learning student, you will need to arrange a suitable examination venue at a convenient Higher Education Institution or British Council Office. Each module can be taken as a stand-alone credit bearing unit for the purposes of Continuing Professional Development. A choice of exit levels is also provided to suit your needs.

ON CAMPUS LEARNING

Students wishing to study towards their qualification on campus can do so by attending classes approximately once a month. Classes are run on a Saturday and Sunday. Study visas are not granted for part-time study.

DISTANCE LEARNING

The distance learning version of the course is delivered entirely online. There is no requirement to attend the University of Aberdeen.

ACCREDITATION

The programme has been designed to provide you with a detailed knowledge of all the major renewable energy sources and the engineering skills associated with them. Essential subject areas are also covered to ensure that you develop the skills and understanding required to develop and implement renewable energy projects. You get both a theoretical and practical grounding. Teaching is by specialist staff drawn from our engineering school and the energy industry, each of whom are highly regarded in their field of expertise. The programme is constantly updated to reflect the current and future needs of the renewable energy industry. One of the main features of the MSc Programme is its interdisciplinary nature. Whether you are from a mechanical, civil, electrical, chemical and/or other suitable engineering background, this programme is aimed at you. In special cases, the programme is also made available to those with relevant science backgrounds, including physics, chemistry and applied maths.

WHAT YOU STUDY

- Electrical Systems for Renewable Energy
- Renewable Energy 1 (Solar and Geothermal)
- Renewable Energy 2 (Biomass)
- Fundamental Concepts in Safety Engineering
- Renewable Energy 3 (Wind, Marine and Hydro)
- Energy Conversion and Storage
- Renewable Energy Integration to Grid
- Legislation, Planning and Economics

Dissertation/Project

For full-time students taking the MSc Programme over 12 months, a dissertation is to be prepared and work undertaken during the final individual project, which will normally be specified in collaboration with industrial partners, supervised either in the School of Engineering or in the companies.

HOW YOU WILL BE ASSESSED

The taught part of the Programme consists of two semesters; the first running from September to December, and the second from January to May. The courses are assessed both by written examination and coursework. After the second semester written examinations in May, students registered for the MSc degree start an industry or school based project, where this can be arranged, and at the end of this period, an individual project report, in the form of a dissertation, has to be handed in and examined by our External Examiner, who will may also make an oral examination of some students on all aspects of the Programme. The final assessment takes account of performance in all parts of the Programme and examinations.

SCHOOL/DEPARTMENT

School of Engineering

DURATION

27 – 36 months part-time (MSc) part-time distance learning

INTAKES

September & January

ENTRY REQUIREMENTS

PLEASE NOTE: THIS PROGRAMME IS OFFERED ON A PART-TIME BASIS VIA DISTANCE LEARNING. INTERNATIONAL APPLICANTS WILL BE OFFERED DISTANCE LEARNING PLACES, UNLESS ALREADY RESIDENT IN THE UK.

Aimed at professionals actively engaged in Project Management in industry, and relevant experience is a prerequisite. In general, applicants are expected to hold a degree in an appropriate subject, however alternative qualifications, combined with an appropriate level of significant and relevant experience may also be considered as a means for entry. Applicants with no formal higher educational qualifications should not be deterred from applying for this course.

WHAT YOU STUDY

- Renewable Energy 1 (Solar and Geothermal)
- Renewable Energy 2 (Biomass)
- Fundamental Concepts in Safety Engineering
- Renewable Energy 3 (Wind, Marine and Hydro)
- Energy Conversion and Storage
- Renewable Energy Integration to Grid
- Legislation, Planning and Economics

Contact Information

www.abdn.ac.uk/projectmanagement
School Information

www.abdn.ac.uk/engineering

General Information

www.abdn.ac.uk/study
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facebook.com/AbdnUniCops
@aberdeenuni
cpsgrad@abdn.ac.uk

MSc RENEWABLE ENERGY ENGINEERING

THE DEVELOPMENT OF RENEWABLE ENERGY ENGINEERING TECHNIQUES ARE ADVANCING RAPIDLY. AS COUNTRIES CONTINUE TO RECOGNISE THE VALUE IN RENEWABLE ENERGY, THE NUMBER OF GLOBAL PROJECTS CONTINUE TO GROW. THIS INCREASE IN GLOBAL ACTIVITY WILL REQUIRE INDIVIDUALS WITH THE RIGHT LEVEL OF TECHNICAL SKILLS AND BREADTH OF UNDERSTANDING.

EMPOWERING TOMORROW’S MANAGERS THROUGH PROVIDING A SOLID GROUNDING IN THE PRINCIPLES AND PRACTICE OF PROJECT MANAGEMENT.

THESE SKILLS ARE CURRENTLY IN VERY HIGH DEMAND AND ESSENTIAL TO THE FINANCIAL AND OPERATIONAL SUCCESS OF PROJECTS ACROSS ALL INDUSTRIES.

HOW YOU WILL BE TAUGHT

We require that all 15 credit courses require about 250hrs study. The teaching is done over five weekends each semester, but students are expected to undertake additional independent study.

HOW YOU WILL BE ASSESSED

The modules are assessed by a combination of coursework and written examination. The distance learning coursework is submitted to the course tutor electronically and marks and comments will be returned. The on-campus submission is either by email or in person at teaching sessions. If you are a distance-learning student, you will need to arrange a suitable examination venue at a convenient Higher Education Institution or British Council Office. Each module can be taken as a stand-alone credit bearing unit for the purposes of Continuing Professional Development. A choice of exit levels is also provided to suit your needs.

ON CAMPUS LEARNING

Students wishing to study towards their qualification on campus can do so by attending classes approximately once a month. Classes are run on a Saturday and Sunday. Study visas are not granted for part-time study.

DISTANCE LEARNING

The distance learning version of the course is delivered entirely online. There is no requirement to attend the University of Aberdeen.

ACCREDITATION

The programme has been designed to provide you with a detailed knowledge of all the major renewable energy sources and the engineering skills associated with them. Essential subject areas are also covered to ensure that you develop the skills and understanding required to develop and implement renewable energy projects. You get both a theoretical and practical grounding. Teaching is by specialist staff drawn from our engineering school and the energy industry, each of whom are highly regarded in their field of expertise. The programme is constantly updated to reflect the current and future needs of the renewable energy industry. One of the main features of the MSc Programme is its interdisciplinary nature. Whether you are from a mechanical, civil, electrical, chemical and/or other suitable engineering background, this programme is aimed at you. In special cases, the programme is also made available to those with relevant science backgrounds, including physics, chemistry and applied maths.

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- Renewable Energy 2 (Biomass)
- Fundamental Concepts in Safety Engineering
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- Energy Conversion and Storage
- Renewable Energy Integration to Grid
- Legislation, Planning and Economics

Contact Information

www.abdn.ac.uk/renewables
School Information

www.abdn.ac.uk/engineering

General Information

www.abdn.ac.uk/study
facebook.com/universityofaberdeen
facebook.com/AbdnUniCops
@aberdeenuni
cpsgrad@abdn.ac.uk

Part-time only

Professional Masters

DURATION

12 months full-time (MSc)

INTAKE

September

ENTRY REQUIREMENTS

Our minimum entry requirement for this programme is a UK Honours degree (or an honours degree from a non-UK institution which is judged by the University to be of equivalent worth) in any branch of Engineering at a 2:1 (upper second) class or above, or honours degree in a relevant Physical Sciences subject or Mathematics, also at a 2:1 or above. Students with a 2:2 and 2:3 years of relevant experience may also be considered.

All international students, even if you have been educated in the medium of English, must meet our English Language requirements (www.abdn.ac.uk/study/ international/english-requirements.php). This programme requires that you meet the ‘Postgraduate Standard’ level of English proficiency.

Course Information

www.abdn.ac.uk/renewables

School Information

www.abdn.ac.uk/engineering

General Information

www.abdn.ac.uk/study
facebook.com/universityofaberdeen
facebook.com/AbdnUniCops
@aberdeenuni
cpsgrad@abdn.ac.uk
MSc SAFETY AND RELIABILITY ENGINEERING FOR OIL AND GAS

THE ONGOING DEVELOPMENTS IN SAFETY AND RELIABILITY REMAINS A PRIMARY FOCUS FOR THE INDUSTRY. GREATER EFFORT IS PUT INTO ASSESSING THE SAFETY AND RELIABILITY OF COMPLEX ENGINEERING SYSTEMS, AND OF ENSURING THAT EXISTING FACILITIES CAN CONTINUE TO BE OPERATED SAFELY AND ECONOMICALLY.

There is a continuing high demand for individuals with specialist knowledge in these areas, partly a result of the legal requirements to assess and control industrial risks to people and the environment and partly because of the need to create high integrity engineering systems in many industries. This MSc Programme brings together those topics relating to the safety and reliability of engineering products and systems, including the legislative framework, in a unified approach.

The programme draws together students from all over the world, making the learning experience a truly international one. The high regard the programme enjoys and the wide geographic spread of our graduates results in a world-wide recognition and acceptance of the degree.

You can choose to study on a full-time or part-time basis. As a full-time student, the duration of the Programme is 12 months, starting in September. As a part-time student, you will attend for the equivalent of one or two days per week over a period of two to three years, also starting in September. The Programme provides an integrated approach to safety and reliability issues across most of the traditional branches of engineering, and will allow you to specialise in offshore engineering, technical safety, reliability, legislations and regulations or human factors.

WHAT YOU STUDY
- Fundamental Safety Engineering
- Risk Management Concepts
- Statistics & Probability for Safety Reliability & Quality
- Fire & Explosion Engineering
- Offshore Oil & Gas Production Systems
- Advanced Methods for Risk & Reliability Assessment
- Applied Risk Analysis & Management
- Process Design, Layout and Materials
- Human Factors Engineering
- Individual Project

As a full-time student taking the MSc Programme over 12 months, a dissertation is to be prepared on work undertaken during the final individual project, which will normally be specified in collaboration with industrial partners, supervised either in the School of Engineering or in the companies. Please note that an industry placement is not compulsory and cannot be guaranteed. If you are a part-time student who is sponsored by your company or working for a company approved by the University, a dissertation is to be prepared on approved project work carried out within that company during the second or third year of the programme.

HOW YOU WILL BE TAUGHT
You will be taught by staff from the School of Engineering, Institute of Mathematics, School of Psychology and the Department of Environmental and Occupational Medicine. In addition to the above, a number of lectures are given by industrially-based practising safety and reliability specialists to give lectures and examples of how theoretical concepts are currently being applied in industry.

HOW YOU WILL BE ASSESSED
Assessment is by continuous assessment and/or written assignment.

ACCREDITATION
Campus study is fully accredited by the Institution of Mechanical Engineers (I Mech E), the Institution of Civil Engineers (ICE), the Institution of Structural Engineers (IStrucE), the Institute of Highway Engineers (IHE) and the Chartered Institution of Highways & Transportation (CIHT).

This programme requires that you meet the ‘Postgraduate Standard’ level of English proficiency.

Aberdeen is the University for all those who want to get a good understanding of the oil and gas industry.

MARIKOS IOANNIDIS MSc OIL AND GAS ENGINEERING GRADUATE DESIGN VERIFICATION ENGINEER BUREAU VERITAS

Course Information
www.abdn.ac.uk/safetyengineering

School Information
www.abdn.ac.uk/engineering

General Information
www.abdn.ac.uk/study

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cpsgrad@abdn.ac.uk
MSc SUBSEA ENGINEERING

Subsea Engineering at the University of Aberdeen has a unique and direct relationship with the subsea industry both locally and internationally, and the programme receives major support from local industrial organisations.

Aberdeen is respected globally as an international hub and centre of excellence for subsea engineering and technology development. Our degree puts you in a unique position to develop key subsea business links alongside your academic learning.

The programme seeks to best address the needs of the industry today in terms of subject areas of fundamental importance. The programme will provide you with:

- Increased technical depth and breadth of knowledge and understanding of the development and operation of subsea technologies and systems, from wellhead to topside structure interconnections.
- Intellectual and practical skills so that you can apply sound engineering principles and analysis methods to the design and analysis of subsea systems, and can use and adapt appropriate analysis tools and techniques, specialist design software and standards for design improvements and performance optimisation.
- The opportunity to further enhance your transferable and personal skills in self-study, communication, report writing, project and time management, and problem solving.
- An awareness of the roles and challenges of a practising subsea engineer based on the current and future needs of industry, and therefore provide you with the knowledge and understanding necessary for technical leadership and managerial responsibility.

WHAT YOU STUDY

- Subsea Integrity
- Subsea Production Systems
- Engineering Risk & Reliability Analysis
- Subsea Controls
- Subsea Construction, Inspection & Maintenance
- Pipelines & Soil Mechanics
- Riser Systems & Hydrodynamics
- Flow Assurance

Individual Project - previous student projects include:
1. Leakage detection in subsea flowlines.
2. Investigation of multiphase boosting technology in the North Sea oil and gas fields.
3. The investigation of a combined Riser Mooring concept for offshore Australia FPSO developments.

HOW YOU WILL BE TAUGHT

The courses are completely modular in structure. A choice of exit levels is provided to suit the needs of the participants thus. As a full-time student you will complete 4 modules per semester while as a part-time student you will complete up to 2.

HOW YOU WILL BE ASSESSED

The modules are assessed by a combination of coursework and written examination. The distance learning coursework is submitted to the course tutor online and marks and comments will be returned.

ACCREDITATION

Fully accredited by the The Institute of Marine Engineering, Science & Technology (MIMarEST) and Institution of Mechanical Engineers (IMECH), the Institution of Civil Engineers (ICE), the Institution of Structural Engineers (IStructE), the Institute of Highway Engineers (IHE) and the Chartered Institution of Highway & Transportation (CIHT).

SCHOOL/DEPARTMENT

School of Engineering

DURATION

- 12 months full-time (MSc)
- 24 months part-time (MSc)
- 24 months part-time (Distance Learning)

INTAKE

- September & January

ENTRY REQUIREMENTS

Our minimum entry requirement is a UK Honours degree (or equivalent) in any branch of Engineering at a 2:1 (upper second) class or above. Applicants with slightly lower qualifications (e.g. a UK equivalent lower second class honours degree) may be considered if they can demonstrate they have 5, or more, years of professional experience judged by the University to be of direct relevance to the programme. All international students, even if you have been educated in the medium of English, must meet our English Language requirements (www.abdn.ac.uk/standards/international/english-requirements.php).

This programme requires that you meet the Postgraduate standard level of English proficiency.

Please note: for Distance Learning students, access to a high speed internet connection is necessary.

Already working as a Project Manager in the Oil & Gas field, I returned to study to better my understanding and expand my knowledge in relation to my chosen career.

JASMIN LEON

PROJECT MANAGER – NEW TECHNOLOGY DEVELOPMENT
ONESUBSEA LTD
Introducing Geosciences

GEOLOGY DEGREES HAVE BEEN AWARDED AT ABERDEEN FOR MORE THAN 150 YEARS. WE ARE THE ONLY GEOLOGY DEPARTMENT IN THE UK PHYSICALLY SITTING DIRECTLY AT THE HEART OF THE UK OIL AND GAS INDUSTRY AND WE HAVE BEEN ENGAGED WITH THE INDUSTRY IN ABERDEEN, EUROPE’S ENERGY CAPITAL, SINCE THE VERY EARLY DAYS OF EXPLORATION AND PRODUCTION IN THE UK.

We have created a world-class learning environment and we pride ourselves on being a close community of staff and students, working together and sharing experiences. Organisations that we work with across a number of areas include – Apache, Statoil, Baker Hughes, BP, Chevron, Conoco Phillips, Dana Petroleum, Halliburton, BP, Shell, Pemex and Saudi Aramco. All of these companies and more help us deliver world-class teaching and research.

We deliver our programmes from world-class facilities with a number of our MSc programmes having dedicated study and teaching space available.

Our MSc Integrated Petroleum Geoscience programme was first launched in 1973 and is one of the most highly regarded Petroleum Geology Masters programmes in the world. Over the past 40 years the programme has been developed in line with industry needs and informed by industry experts.

The programme today is one of the most highly regarded Petroleum Geology Masters programmes in the world with over 90% of graduates entering straight into careers in the industry or further research. Local, national and international field trips play a major part in all of our postgraduate teaching. Some are organised directly through the department as part of the degree programme, whereas others are organised through the active student chapters, which offer great networking opportunities and form a bridge into careers.

Recent additions to our portfolio of MSc degree programmes means we have one of the most industry relevant, comprehensive and careers focussed Geoscience portfolios in the UK.

THE DEGREE PROGRAMMES

› MSc Environmental Partnership Management
› MSc Geographical Information Systems
› MSc Geophysics
› MSc Integrated Petroleum Geoscience
› MSc Oil and Gas Enterprise Management
› MSc Petrophysics and Formation Evaluation
› MSc Reservoir Engineering

Full details of entry requirements are on the individual programme information pages that follow, but the below table looks to give you a simple summary of where the different undergraduate degree subjects fit in.

<table>
<thead>
<tr>
<th>Undergraduate Degree Subjects</th>
<th>Environmental Partnership Management</th>
<th>Integrated Petroleum Geoscience</th>
<th>Geophysics</th>
<th>Geographical Information Systems</th>
<th>Oil &amp; Gas Enterprise Management</th>
<th>Petrophysics</th>
<th>Reservoir Engineering</th>
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My masters degree was very intense and the programme included a **high level overview** of the oil and gas industry.

KONSTANTIN NAZARUK
MSc OIL AND GAS ENTERPRISE MANAGEMENT
RELOCATION LEAD, CENTRICA ENERGY
MSc ENVIRONMENTAL PARTNERSHIP MANAGEMENT

FUTURE SUCCESS IN SUSTAINABLE DEVELOPMENT WILL INCREASINGLY RELY UPON PRIVATE SECTOR, NON-PROFIT, AND GOVERNMENTAL BODIES WORKING IN PARTNERSHIP.

Sustainable development - the balancing of environmental, economic and social goals - is the greatest challenge facing the planet today. While international initiatives often state the goals and targets needed to achieve sustainable development, a significant gap exists in developing the skills, practices and processes that advance good governance. In the context of global challenges such as climate change, energy, biodiversity, food production and clean water, new and innovative forms of collaboration and partnership are needed to bring together societal, business and scientific interests. Our MSc in Environmental Partnership Management is an innovative and exciting programme to provide future leaders with the skills and tools needed to develop the green economy. It responds to the gap for skilled graduates and environmental professionals who can work across civil society, business and government in building partnerships for sustainable development. The MSc will combine knowledge on environmental and social issues together with practical business skills to enable the design, management and delivery of effective multi-stakeholder partnerships.

WHAT YOU STUDY

Students will study four courses in the first semester and four courses in the second. These eight courses will be made up of six core and 2 electives. The partnership project completed in semester 3 completes the MSc.

Electives:
- Planning, Land & Environmental Law
- Marketing Management
- Project Management
- Managing our Coasts & Seas
- Regulation & Economic Development
- Business Model Innovation
- Partnership project – this involves collaboration (potentially in the form of a placement) with a supporting partner organisation/agency (eg with SEPA, SNH, the National Park Authority, NGO or a Community group).

HOW YOU WILL BE TAUGHT

The MSc will be taught by experts in energy, water resources, coastal management, agriculture, transport and rural communities from Geography and Environment, with staff from the Business School offering elements of management training currently part of the MBA. An exciting component of the course will be the opportunity to learn about principles and practice of partnership and collaboration from a range of invited expert speakers from businesses, governments and NGOs.

HOW YOU WILL BE ASSESSED

Courses are assessed by continuous assessment or by written examination or a combination of these, as prescribed by each course co-ordinator. The outcome of Partnerships Project is based 85% on the dissertation/project and 15% on an oral examination based on the Project.

SCHOOL/DEPARTMENT
Geography & Environment

DURATION
12 months full-time (MSc)
24 months part-time (MSc)

INTAKES
September & January

ENTRY REQUIREMENTS
A 2:2 (Hons) degree in Geography, Environmental Management, Marine Science, Geology, Soil Science, Ecology, Planning, Zoology, Forestry, Agriculture, Business Management, Psychology, Biology, Sociology and Economics. Candidates with degrees in other subject areas will be considered if they can demonstrate interest, aptitude and experience in a field relevant to the application of environmental studies and management and/or have experience in data analysis.

All international students, even if you have been educated in the medium of English, must meet our English Language requirements. This programme requires that you meet the Postgraduate standard level of English proficiency.

WHAT YOU STUDY

This programme draws upon a wide range of international, national, and local expertise in the following areas:
- Coastal and marine science
- Landscape ecology and landscape change
- Archaeology
- Integrated coastal management
- Offshore hydrographic and underwater survey
- Renewable energy
- Geology and hydrocarbon exploration
- Environmental risks and hazards
- Marine and terrestrial spatial planning
- Precision agriculture
- Climate change
- Field data collection.

To facilitate your learning experience you will use state-of-the-art hardware and software in a dedicated classroom, to explore the different technologies and their applications. Tools and techniques used include underwater remote sensing, image data acquisition using UKIs, mobile GIS mapping and spatial apps. Geospatial technologies are of increasing importance in many areas of commercial, industrial, and government employment; for example in:
- Nature conservation agencies
- Hydrocarbon exploration
- Offshore and hydrographic survey
- Oilfield exploration and management
- Environmental consultancy
- Civil and coastal engineering projects
- Environmental modelling
- Precision agriculture
- Marine and coastal zone management.
- Business, coastal and marine spatial planning

WHAT YOU STUDY

The GIS programme covers the fundamental techniques and tools for acquiring, storing, processing, classifying, visualising and analysing spatially referenced data, and their application to the study of the environment.
- The History, Origins and Evolution of GIS
- GIS Tools and Techniques I & II
- People Management for GIS
- Either: Introduction to Database Systems Or Aspects of Digital Mapping and Visualisation
- Fundamentals of GIS and Spatial Analysis
- GIS Tools and Techniques I & II
- Planning, Managing and Presenting a GIS Project
- Current Applications of GIS

Dissertation/Project

If you complete the programme to an appropriate standard you will be permitted to take the dissertation in Geographical Information Systems.

HOW YOU WILL BE TAUGHT

Teaching is by a combination of illustrated lectures, practical demonstrations, student-led seminar discussions on pre-arranged topics, student-centred learning making use of internet resources, group practical work and lectures/seminars with experts in a range of application fields.

HOW YOU WILL BE ASSESSED

Assessment is by a combination of written assignments and laboratory reports as prescribed for each course. Plus a dissertation (MSc candidates) or a project report (Diploma candidates). An oral examination is also required.
This unique programme is designed to expose students to the theory and practice of modern geophysics, with an emphasis on cutting edge techniques for understanding the structure, dynamics and composition of the Earth from the near surface to the deep interior. The content is broad-based and integrative with a strong focus on the quantitative aspects of geophysical data analysis and interpretation.

WHAT YOU STUDY
The 12 month full time MSc, is split into three semesters. During the first and second semesters, you will study four courses. The MSc will be achieved upon successful completion of the individual project.

› Earth Physics, Structure and Processes
› Field Geophysical Data Acquisition
› Time Series Analysis and Signal Processing
› Geophysical Inverse Theory and Statistics
› Seismology and Earth Imaging
› Seismic Reflection Processing, Imaging and Quantitative Interpretation
› Borehole Geophysics, including Petrophysics and Well-log Analysis
› Topics in Advanced Applied Geophysics

Individual Project in geophysics, supported directly by industry where appropriate.

HOW YOU WILL BE TAUGHT
The taught part of the Programme is delivered over two semesters: September to December, and January to May. The courses are taught by staff from School of Geosciences. In addition, a number of industrial-based external lecturers contribute to the programme to give examples of how theoretical concepts are currently being applied in industry.

HOW YOU WILL BE ASSESSED
Continuous assessment will play a major part in the programme, as well as course specific project work and exams.

One-third of the overall assessment will be attributed to an individual project involving original research or applied work. Students may gain direct support from industry during the individual project.

MSc GEOPHYSICS
DEVELOPED ON THE BACK OF A RECOGNISED NEED FOR QUALIFIED GEOPHYSICISTS WITHIN INDUSTRY, THIS PROGRAMME WILL EQUIP STUDENTS WITH THE SKILLS FOR CAREERS IN THE HYDROCARBON, MINERALS EXPLORATION OR ASSOCIATED SERVICE INDUSTRIES, OR BROADER GEOPHYSICS RESEARCH.
MSc INTEGRATED PETROLEUM GEOSCIENCE


With an excellent reputation as one of the top vocational training pathways, graduates from this programme are highly sought after by industry. The training offered in this programme is also an ideal springboard into a career based on further research at PhD level and above.

Over the last decade, more than 95% of the MSc graduates have immediately been employed in the oil industry or gone straight on to funded PhD research. At present the oil majors are desperately short of qualified staff, so have increased direct recruitment of MSc graduates who have immediately been employed in the oil industry or gone straight on to funded PhD research. The training offered in this programme is also an ideal springboard into a career based on further research at PhD level and above.

The MSc in Integrated Petroleum Geoscience aims to:

› Teach the geoscience skills needed for hydrocarbon exploration and production, so you are ready to embark upon a petroleum industry career in particular, to provide an all round preparation for a wide range of employment in a mobile, dynamic, wealth creating industry, and to show how integration of information across discipline boundaries can provide solutions to industrial problems.

› Develop the knowledge needed to communicate with and work alongside specialists in the other engineering and scientific disciplines involved in hydrocarbon exploration and production, in small, multi-disciplinary teams.

› Enhance your inter-personal and transferable skills relevant to the hydrocarbon industry today, to develop presentation and report writing skills; to encourage team work; to stimulate creative thinking and problem solving ability; and to foster initiative and self-discipline.

WHAT YOU STUDY

Components of the programme focus on all aspects of upstream geoscience, from initial exploration for new prospects, through field appraisal and development, to maximising recovery from mature and declining fields. Topics covered include: seismic interpretation, petrophysical analysis, geochemical evaluation, sedimentology, structural analysis, and reservoir modelling. Skills in the analysis of the subsurface are further developed by field work on outcrops and by hands-on experience with core logging.

These topics are grouped under the following teaching areas:

› Geophysics and Petrophysics
› Applied Sedimentology
› Production Geology
› Regional Exploration
› Professional Skills incorporating International Field Trip

Project/Dissertation

Previous topics have included:
1. Classical and modern approaches to examine reservoir connectivity in a mature field, West Siberia Basin
2. Hydrocarbon Migration and Fill History of the Rosebank Field, West of Shetland, UK

HOW YOU WILL BE ASSESSED

Practical work, projects and reports will be assessed continuously throughout the programme. Examinations are held in December and May on the preceding term’s curriculum. An oral examination will be held. You will also be expected to present a final report on a relevant and approved major topic.

The programme provides a broad training in essential aspects of the oil and gas industry, whilst ensuring a firm grasp of many recent advances in science and technology directly applied to industry. Modules include subject areas such as geology, economics, psychology etc.

In this respect training in commercialisation, economics and law will be important, as will an understanding of how science and technology can be applied at the cutting edge to improve hydrocarbon exploration success and recovery.

Aberdeen’s geographic position has maintained its dominance of the European hydrocarbon exploration and production environment for many years, delivering its recognition as Europe’s Energy Capital. The University is the premier location for industry contact for research and education, and with large numbers of outstanding professionals at hand, we are in the enviable position to educate you, to have accelerated learning in the oil and gas industry.

Students on the programme each year come from a wide variety of backgrounds. The programme appeals to graduates and professionals seeking to increase their knowledge, skills and qualifications, it also appeals to geologists, engineers and business managers working in NOCs and energy ministries, for example.

WHAT YOU STUDY

The programme covers a broad range of subjects and courses in order to encompass all the aspects related with the oil industry environment. You will be presented with all of the business drivers in these areas of technology: from exploration, appraisal through production and decommissioning.

Environmental, human and cultural impact of the oil industry is presented, and safety engineering and issues, using a series of case studies, is included.

The course also includes: Entrepreneurship, negotiating and presentation skills, petroleum law and contracts, petroleum economics and accountancy. Highly trained individuals with an international experience unparalleled in any other research centre teach these areas.

The emphasis will be on practical application of studies, lateral thinking and management techniques. We take advantage of our location and links by organising a series of excursions to examine aspects of the oil and gas industry and the geology of the North Sea.

› Geoscience in Oil Exploration
› Introduction to Energy Economics
› Drilling and Well Engineering
› Management in Engineering: Production, Risk Management and Psychology
› Portfolio Optimisation
› Commercial Law and Regulatory Frameworks
› Remediation Technology for Geosciences
› Research Skills, Professional Development and Field Study.

Individual Project

Your final year project can have many forms.

HOW YOU WILL BE ASSESSED

Assessment comprises of many practical exercises and research papers and essays, where you can access information from a wide array of sources. Many of the courses include ‘jams’ spread over several days, which require team and negotiating skills, as well as a knowledge of technology and economics, which draw the various courses together. Team building, geological fieldwork, a visit to see oil platforms and offshore safety are all part of the programme.

SCHOOL/DEPARTMENT

Geology & Petroleum Geology

DURATION

12 months full-time (MSc)

INTAKE

September

ENTRY REQUIREMENTS

Our normal, minimum entry requirements for this programmes is a degree, or equivalent qualification at 2:1 (upper second class) or above, in Geology, Geophysics or in combined honours containing a minimum of 50% earth sciences modules.

All international students, even if you have been educated in the medium of English, must meet our English Language requirements (www.abdn.ac.uk/study/ international/english-requirements.php). This programme requires that you meet the ‘Postgraduate Higher’ level of English proficiency. Poorly written personal statements may lead to applications being rejected.

An Honours degree at a level of Upper Second-Class (2:1) or above, or its international equivalent, preferably in Geology, Geophysics, Engineering, Law, Economics, Commerce, Business or Finance, or other relevant degree.

All international students, even if you have been educated in the medium of English, must meet our English Language requirements (www.abdn.ac.uk/study/ international/english-requirements.php).

This programme requires that you meet the 'Postgraduate Higher' level of English proficiency. Poorly written personal statements may lead to applications being rejected.

WHERE WILL YOU GO NEXT?

Aberdeen’s geographic position has maintained its dominance of the European hydrocarbon exploration and production environment for many years, delivering its recognition as Europe’s Energy Capital. The University is the premier location for industry contact for research and education, and with large numbers of outstanding professionals at hand, we are in the enviable position to educate you, to have accelerated learning in the oil and gas industry.

Students on the programme each year come from a wide variety of backgrounds. The programme appeals to graduates and professionals seeking to increase their knowledge, skills and qualifications, it also appeals to geologists, engineers and business managers working in NOCs and energy ministries, for example.

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SCHOOL/DEPARTMENT

Geology & Petroleum Geology

DURATION

12 months full-time (MSc)

INTAKE

September & January

ENTRY REQUIREMENTS

Our normal, minimum entry requirement for this programme is a Honours degree at a level of Upper Second-Class (2:1) or above, or its international equivalent, preferably in Geology, Geophysics, Engineering, Law, Economics, Commerce, Business or Finance, or other relevant degree.

All international students, even if you have been educated in the medium of English, must meet our English Language requirements (www.abdn.ac.uk/study/ international/english-requirements.php).

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Students on the programme each year come from a wide variety of backgrounds. The programme appeals to graduates and professionals seeking to increase their knowledge, skills and qualifications, it also appeals to geologists, engineers and business managers working in NOCs and energy ministries, for example.

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Individual Project

Your final year project can have many forms.

HOW YOU WILL BE ASSESSED

Assessment comprises of many practical exercises and research papers and essays, where you can access information from a wide array of sources. Many of the courses include ‘jams’ spread over several days, which require team and negotiating skills, as well as a knowledge of technology and economics, which draw the various courses together. Team building, geological fieldwork, a visit to see oil platforms and offshore safety are all part of the programme.
MSc PETROPHYSICS AND FORMATION EVALUATION

ONE OF ONLY FEW DEGREES OF ITS KIND IN THE UK, THIS PROGRAMME IS DELIVERED IN PARTNERSHIP WITH LEADING ENERGY SERVICES COMPANY LR SENERGY.

Petrophysics is a key integrating discipline within the geosciences, applied to the finding and development of hydrocarbon resources. The skills required are very much in demand and this programme seeks to deliver the practical knowledge and understanding necessary for early career petrophysicists to complement and enrich their job experience, and for more experienced petrophysicists or related disciplines to acquire a Masters level degree programme.

The key benefits of the programme to you are:

- Gain knowledge and understanding of key elements of the petrophysics discipline
- Gain confidence in your skills of interpretation and analysis
- Enhance your career
- Improve your team working and project management skills
- Learn from experts in their discipline
- Guided application of new skills; knowledge and recent developments in petrophysics

WHAT YOU STUDY

This programme is delivered in partnership with LR Senergy, a leading energy services company. You will undertake Senergy training modules which are grouped together to make up University of Aberdeen courses.

- Introduction to petrophysics and its role in the oil and gas industry
- Core and core analysis
- Integrating petrophysics and seismic data for reservoir characterisation
- Reservoir surveillance and operational petrophysics
- Characterisation of complex reservoirs
- Specialist formation evaluation
- Professional skills and research planning

The third stage requires completion of a project in petrophysics and formation evaluation. You are expected to undertake and complete a study of a problem applicable to the use of petrophysics and formation evaluation in the petroleum industry. The project is an extended, independent, self-directed, piece of practical work integrating and reinforcing the material taught on the course, and giving a detailed insight into the demands of, and ways of working in the hydrocarbon industry.

HOW YOU WILL BE TAUGHT

The programme is delivered by lecturers drawn from Senergy's technical experts in their respective disciplines and academic specialists in the field.

HOW YOU WILL BE ASSESSED

Practical work, projects and reports will be assessed continuously throughout the programme. Examinations will be held at the end of each course. An oral examination may be held at the discretion of the External Examiner. Candidates will be expected to present a final report on a relevant and approved major topic.

The aims of this programme are to develop core competencies and capabilities within the RE discipline, to be able to integrate your work with other disciplines and functions, and to understand the role of the reservoir engineer within the overall commercial and economic structure of the international oil and gas industry.

- Data acquisition & management; particularly the design, planning and execution of fluid sampling and well tests.
- Data analysis and interpretation, covering fluid (PVT) properties, well test results, and all other basic data.
- Reservoir surveillance and management: designing reservoir surveillance plan and knowing how to monitor and manage a hydrocarbon reservoir.
- Reservoir modelling and analysis: building a reservoir simulation model, carrying out history matching of the model, and then using the model to conduct prediction runs.
- Estimation of hydrocarbon reserves and resources: predicting reservoir performance, making estimates of different categories of reserves and resources; and the legal duties of filing and reporting reserve and resource estimates.
- Field level planning for development and redevelopment: in particular, you will be able to identify and manage key subsurface uncertainties; evaluate the effectiveness of different possible recovery processes and different development strategies; and compare drive options for both primary and subsequent recoveries.
- Business and commercial evaluation: the economics of exploration and production; the role of markets; project economic analysis; the economic impact of uncertainty and risk.

You will be exposed to world class teaching, delivered by academics that are highly recognised in their field of expertise. The close connections to industry will also expose you to the latest industry thinking. Putting you ahead of the game and better placed for a career in the energy industry.

SCHOOL/DEPARTMENT
Geology & Petroleum Geology

DURATION
12 months full-time (MSc)
36 Months part-time, distance learning (MSc)

INTAKE
September

ENTRY REQUIREMENTS

Applicants should have a UK Honours degree or above in a science, engineering or mathematics based degree, e.g., geoscience, chemistry, physics, maths. Other degrees may be considered. They should have an Honours degree in a STEM subject such as geoscience, chemistry, physics, mathematics or engineering. Other qualifications will be considered but must be discussed in advance of application.

English Language skills must be excellent. IELTS 6.5 or better or TOEFL 95 or better. Students who do not meet the IELTS or TOEFL requirements must take the Manawatu English test at the University. For more information visit www.abdn.ac.uk/english-requirements.php.

For more information visit www.abdn.ac.uk/study/international/english-requirements.php.

www.abdn.ac.uk/geosciences

Course Information

cpsgrad@abdn.ac.uk

MSc RESERVOIR ENGINEERING

THIS PROGRAMME PROVIDES GRADUATE ENGINEERS, GEOLOGISTS AND OTHER SCIENTISTS WITH SPECIALIST KNOWLEDGE AND UNDERSTANDING OF THE GEOLOGY, PERFORMANCE AND MANAGEMENT OF HYDROCARBON RESERVOIRS. OUR CLOSE WORKING PARTNERSHIPS WITH INDUSTRY HAS ALLOWED US TO DESIGN AND DELIVER A PROGRAMME THAT IS RELEVANT AND ASSOCIATED TO FUTURE CAREER OPPORTUNITIES.

WHAT YOU STUDY

Delivered across two semesters, you will study:

- Fundamentals of Petroleum Geoscience
- Petrophysics, Core Analysis and Formation Evaluation
- Reservoir Engineering
- Introduction to Energy Economics
- Reservoir Sedimentology and Structure
- Reservoir Simulation
- Group Project and Research Skills

Project/Dissertation

Hands-on experience of using industry-standard software (e.g. Petrel and Eclipse) in all aspects of reservoir engineering and simulation is developed within the taught courses. A group design exercise provides students with an opportunity to apply a range of concepts to the appraisal of a prospect and selection of appropriate technologies and solutions for viable development and management of oil and gas fields.

Our close working relationship with local industry ensures you are given the opportunity to visit industrial facilities and receive technical presentations by working professionals, to provide further practical exposure and awareness of professional and social responsibility.

HOW YOU WILL BE ASSESSED

By written examination, continuous assessment and course work as prescribed for each course. In addition, MSc candidates must submit a dissertation on their individual project.

HOW YOU WILL BE TAUGHT

The courses are taught by staff from the School of Geosciences and School of Engineering and one course from the Business School. In addition, external support from industry professionals will contribute further to key elements of the programme.

SCHOOL/DEPARTMENT
Geology & Petroleum Geology

DURATION
12 months full-time (MSc)

INTAKE
September

ENTRY REQUIREMENTS

A UK Honours degree or above in engineering or a geoscience discipline which includes at least one module of geophysics. Candidates with at least one year of University maths are preferred, but we will accept candidates with a good result in Higher, Advanced Higher or A-level maths, or with some other indicator of maths ability.

All international students, even if you have been educated in the medium of English, must meet our English Language requirements (www.abdn.ac.uk/study/international/english-language-requirements.php).

This programme requires that you meet the Postgraduate standard level of English proficiency.

School Information

www.abdn.ac.uk/geosciences

Programme specific student website

www.abdn.ac.uk

General Information

www.abdn.ac.uk/geosciences

facebook.com/universityofaberdeen

facebook.com/AbdnUniCrops

@aberdeenuni

qpsgrad@abdn.ac.uk

Course Information

www.abdn.ac.uk/ourpletionandformation

Programme specific student website

www.abdn.ac.uk

School Information

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facebook.com/universityofaberdeen

facebook.com/AbdnUniCrops

@aberdeenuni

qpsgrad@abdn.ac.uk
Most biochemical and environmental questions can nowadays only be answered by genetics and metabolomics. This programme focuses on the latter, i.e. the determination of molecules in biological and environmental samples using spectroscopic and mass spectrometric methods.

Through studying this programme you will gain specialist knowledge of the instrumentation and method development for the identification and quantification of natural and anthropogenic compounds at trace level. In addition you will build on your undergraduate chemistry experience of more traditional fundamentals in analytical chemistry and develop analytical thinking which is needed for leadership roles in industry and academia.

Success on the programme will open up a number of career opportunities for you. Many graduates will find careers working in energy related industries, pharmaceutical company or will work for an environmental agency as, or with, analytical chemists.

WHAT YOU STUDY
This Programme is structured across three semesters with candidates being required to attend the designed programme of courses as described below:

- Advanced Analytical Methodologies A
- Advanced Analytical Methodologies B
- Practical Exercise and Professional Skills in Analytical Chemistry
- Research Techniques and Professional Skills and Problem Solving in Theory and Practice
- Research Project A (Mini-Project)
- Extended Research Project

HOW YOU WILL BE ASSESSED
When you reach the end of a semester of study, you have the option of graduating with the qualification reached or continuing into the next semester of study to enhance your qualification to the next level. Only one qualification can and will be awarded when enough credits are achieved.

Taught components are assessed by a combination of continuous assessment, written examinations and oral examinations. The Extended Research Project will be assessed by dissertation.

HOW YOU WILL BE TAUGHT
The programme contains theoretical and practical courses, formal teaching as well as application oriented research training, and professional skills such as project planning management exercises.

DEVELOPING THE NEXT GENERATION OF ANALYTICAL CHEMISTS READY TO FACE CHALLENGES IN INDUSTRY THROUGH FOCUSED TRAINING AND SPECIALISATION IN ADVANCED MODERN ANALYTICAL METHODOLOGIES.
MSc ENVIRONMENTAL SCIENCE

The MSc in Environmental Science aims to train students to recognise and understand the threats and conflicts in the environment today and appreciate the steps required to develop solutions. Students will benefit from the opportunity to work outdoors and apply classroom and field work knowledge to real life situations. This degree programme is suitable for those intending to pursue a career in the environmental field, those already in relevant employment and those considering further research to PhD level.

Teaching includes enhanced knowledge-based learning, technical development and practical skills. Students will also have lots of opportunities to carry out field research in various different locations and habitats including the North Sea, the agricultural and forested areas of NE Scotland and National Nature Reserves. The School of Biological Sciences has an international reputation for excellence in inter-disciplinary research in terrestrial, aquatic and marine environments. The research for terrestrially related environmental sciences is ranked in first place in the UK (REF2014).

Graduates from the Environmental Science programme move to research posts, private and public sector environmental work (including the energy sector) and to consultancies. Graduates have also established themselves in government work internationally.

WHAT YOU STUDY
The programme begins with you taking a range of core courses and electives over two semesters.

Core courses:
- Core Skills for Environmental Sciences
- Environmental Pollution
- Environmental Analysis
- Land Use and the Environment on Deeside
- Soils for Food Security
- Applications of GIS

Elective courses:
- Plant Ecology
- Global Soil Geography
- Remediation Technology
- Environmental Impact Assessment
- Catchment Management
- Ecological and Environmental Modelling

In addition, there is a programme of activities with external speakers, site visits and applied technique sessions, and a residential field trip. The final three months of the programme is dedicated to carrying out the detailed research project.

HOW YOU WILL BE TAUGHT
Courses are delivered by a combination of lectures, lab practicals, field sampling and tutorials, amounting to approximately 20 hours per week. External experts are also regularly invited to provide specialist expertise. The final stage will be preparation of a project thesis in the format of a manuscript for a scientific journal, consultancy report or technical bulletin.

HOW YOU WILL BE ASSESSED
The degree programme is assessed on the basis of performance in the research project, continuous assessment of coursework, an examination covering the programme as a whole, field course reports and a term essay.

SCHOOL/DEPARTMENT
School of Biological Sciences
DURATION
12 months full-time
24 months part-time
INTAKE
September
ENTRY REQUIREMENTS
Prospective students should normally have, or expect to be awarded, a minimum of a lower second-class Honours degree (or equivalent) in a relevant subject, from a recognised University. Enquiries are welcomed from all prospective students, regardless of first degree subject, who can demonstrate an adequate level of competence and ability for postgraduate training. In recent years students who have completed the programme successfully have come from backgrounds including biology, zoology, ecology, chemistry, physics, engineering, geology, geography, agriculture, psychology, and health sciences. Interviews will be required for applicants with non-conventional qualifications.

International applicants must also meet the English Language Requirements of the University - www.abdn.ac.uk/study/international/english-requirements.php.

EMMANUEL AJAYI
MSc OIL AND GAS CHEMISTRY
FIELD SUPPORT CHEMIST
ROEMAX LTD

Aberdeen is a typical Scottish city where the locals are friendly and open to international students.
This programme will build on your undergraduate chemistry experience and develop specialist skills applicable to the oil and gas industry. Despite the growing research emphasis on renewable forms of energy generation and the anticipated energy gap between need and supply, the oil and gas industry is expected to remain a primary source of energy provision for the foreseeable future; oil and gas is projected to meet 60% of the world’s energy needs in 2030.

In the current environmentally conscious climate, the industry recognises the need for efficiency and its environmental responsibility. This postgraduate programme focuses on the chemistry applicable to topics within these themes, addressing materials and energetics relevant to production and refining, and environmental impact and remediation.

The University has a historic and central presence within Aberdeen, the Energy Capital of Europe. This programme has been designed in collaboration with industry which ensures that it is relevant and current. You will also be given the opportunity to build up your own network of industry contacts.

WHAT YOU STUDY

The Programme is structured across three semesters with candidates being required to attend the designated programme of courses as described below. Each level acts as a prerequisite for the next (i.e. Certificate, Diploma, MSc). Students who reach the end of a semester of study have the option of graduating with the qualification reached or continuing into the next semester of study to enhance their qualification to the next level. Please note: only one qualification can, and will, be awarded.

Semester 1
- Materials for the Oil & Gas Industry
- Processes Materials and Bioremediation for the Energy Industry
- Chemistry at interfaces and Enhanced Oil Recovery
- Analytical and Instrumental Methods

Semester 2
- Chemistry of Refinery and Natural Gas Processes
- Flow Assurance and Oil Field Chemicals
- Applied Analytical and Instrumental Methods
- Industrial Engagement and Applications

Semester 3
Extended Research Project/Dissertation

HOW YOU WILL BE ASSESSED

Assessment is by course work, by written examination or by a combination of these as prescribed for each course. The Extended Research Project will be assessed by dissertation. The degree of MSc shall not be awarded to a candidate who fails to complete the Extended Research Project at an appropriate standard, irrespective of their performance in other courses.
Coping with the financial responsibility of full-time study is a major concern for many people. For those who require assistance, our scholarships can prove to be a very welcome support. There is competition for all our scholarships but we would encourage you to apply for any scholarship that is relevant to you and your programme of study.

The best place to start your search is on our online funding database, which lists all the bursaries and scholarships available each year. It also includes details on the level of funding contribution and eligibility criteria for each, as this will vary between different scholarship and bursary schemes.

In addition to scholarships funded by the University of Aberdeen, you may be eligible to apply for scholarships which are:

- Offered/supported by the UK Government
- Offered by the University of Aberdeen
- Offered by Industry specific organisations
- Offered by local governments, government related bodies and charities to their own citizens looking to study in the UK
- Offered to individuals studying for a specific discipline or subject

You will find the most up-to-date list of scholarships available here:

- [www.abdn.ac.uk/study/international/scholarships-and-funding.php](http://www.abdn.ac.uk/study/international/scholarships-and-funding.php)
- [www.abdn.ac.uk/funding](http://www.abdn.ac.uk/funding)
- Your home country Ministry for Education

Recipient of the University of Aberdeen PhD Elphinstone Scholarship.

MOHAMMED ALTAHAR, ENGINEERING PhD STUDENT
We are analysing how behaviour and choice is adapting transport infrastructure, the built environment and energy efficiency initiatives to enable us to better manage and respond to demand for future energy supply.

We are examining methods to facilitate new energy production, be this related to cross border co-operation, ownership and licensing, environmental management, or risk mitigation. Lawyers work with economists, engineers, geologists and environmental scientists to ensure the resources needed to meet energy demand are effectively deployed.

We investigate materials science, flow assurance, and instrumentation, combined with research into industrial safety and human factors, focused towards maximising the operational efficiency of oil and gas assets by maximising production and minimising cost. Our researchers are working to optimise the integration of electrical energy generated from wind and marine resources into regional grid distribution systems to ensure a stable and reliable supply for corporate and domestic users.

This is just a flavour of our work and an example of some of the areas that we offer postgraduate research opportunities in.
Transforming the world with greater knowledge and learning
Choose University of Aberdeen for life defining learning