



Università degli Studi di Perugia

Master of Science (MSc) in Petroleum Geology

(Laurea Magistrale in Geologia degli Idrocarburi)

Aim of the Course

The MSc in Petroleum Geology (Laurea Magistrale in Geologia degli Idrocarburi) is a two-year multidisciplinary course covering a range of earth science and related subjects, and their application to the exploration and production of hydrocarbons. The course is intended to prepare students for professional positions in the petroleum industry, environmental and geotechnical consulting industries, government agencies and for graduate studies at the doctoral level. The course has been structured in close collaboration with **eni**, which also delivers technical seminars during the course.

The programmed curriculum will provide the students with a strong understanding of geology, sedimentary geology, structural geology and geophysics in relation to petroleum habitats and exploration with an emphasis to applying current concepts, methods and technologies (e.g. basin analysis, sequence stratigraphy, petroleum systems modelling, seismic interpretation) to hydrocarbon basins.

Main objective is to produce technically qualified, well-rounded petroleum geoscientist with the potential to become leaders of industry; additionally, this is also a course option for graduates wishing to develop knowledge and skills for careers as geoscientists.

At the end of the two years course, the graduates should be able to apply the fundamentals of geosciences to solve geosciences related problems; analyse and synthesize using problem solving skills; demonstrate effective communication and management skills; engage in lifelong learning and professional development.

An integral part of the training regards fieldwork, which is used to consolidate the students' understanding by applying classroom-taught concepts in the field. Fieldtrips are taken to areas of outstanding geological interest that illustrate the full breadth of petroleum geoscience.

After the exams, students undertake an independent project (Thesis), under the supervision of a tutor. This independent project provides students with the opportunity to improve their specialist knowledge in a particular area or topic, and/or to gain work experience in an oil company.

Students are expected to demonstrate independent thinking, critical and creative analysis, and sound technical judgment in their project work, and to manage both the technical analysis and time-management aspects of the project.

Outline of the MSc in Petroleum Geology

The normal extent for obtaining the Master's Degree is two years. In order to achieve the final title, the student must have acquired 120 credits (CFU), 60 CFU for each year of the course. Each credit corresponds to 25 hours of work of the student. For each training credit, the number of hours devoted to different types of educational activities, in view of the different variable commitment (personal study) required students from the assets is determined as follows:

Frontal lectures:	7 hours;
Practice in the classroom or lab:	12 hours;
Tutorial on the ground:	usually 2 days;
Internships, preparation of the final Project and written Thesis.	25 hours.

The two academic years path is organised in 4 semesters as here below reported; during the fourth semester a Stage period (12 weeks at least) will be spent in Industry or at the University or other approved Agencies, to undertake a multidisciplinary project on oil business items: the relevant written report will constitute the final dissertation and the MSc Thesis to be presented during the Degree examination session (Laurea). The final assessments, of each course, will be taken at the end of each semester.

I year – I semester (October – January)	CFU	Courses and teaching staff
Sedimentology	9	S. Cirilli
Applied Geophysics	6	C. Federico
Global Tectonics	6	M. Barchi
Integrated Stratigraphy	6	P. Monaco

I year – II semester (March – June)	CFU	Courses and teaching staff
Seismic interpretation	6	G. Minelli
Applied Geochemistry	6	C. Cardellini
Structural Geology	9	G. Minelli
1 optional course	6	
Field trip – Tectono-sedimentary evolution of the Northern Apennines thrust belt	3	G. Minelli, S. Cirilli & M. Barchi
eni's seminars	3	Distributed on both the semesters
<ul style="list-style-type: none"> • Introduction to petroleum geology • Seismic interpretation and exploration • Geochemistry and petroleum geology 		

II year – I semester (October – January)		CFU	Courses and teaching staff
Petroleum Geology	Petroleum geology –module 1 (Exploration and Petroleum System Modelling)	12	To be defined
	Petroleum geology –module 2 (Petrophysics and Reservoir Geology)		To be defined
G.I.S. Geographical Information Systems		6	To be defined
Choose 1 between	Micropaleontology	6	R. Rettori
	Hydrogeology	6	To be defined
1 optional course		6	

II year – II semester (March – June)		CFU	
Final stage and thesis		27	
eni's seminars		3	Distributed on both the semesters
<ul style="list-style-type: none"> • Petrophysics and Well Bore Log Interpretation • Reservoir Geology • Petroleum System Modelling • Exploration and Production activities Workflow 			

Optional courses

Sedimentary Petrography, Reservoir Geology, Ichnology, Remote Sensing, Environmental Chemistry, Quaternary Geology, Laboratory of Applied Mineralogy, Geo-engineering Techniques for Surveying and Monitoring.

For further information, please refer to the posters of the other Degree Courses in Geology at the Department of Physics and Geology

Teaching methods and Assessment

The training activities will be implemented in several ways, such as teaching front, the practical work in the classroom and in the laboratory, ground exercises, seminars, training courses, individual study and assisted. The exercises are intended to develop the student's ability to solve problems or to acquire skills of technical and practical exercises are especially important for field and laboratory. The exercises, which will also include group activities, will also allow the teacher to verify, during the course of each course, the levels of student learning and achievement of learning goals. The Study provides the opportunity for training abroad under the Erasmus exchange agreements and Erasmus Placement

Attendance at lectures is strongly recommended for all courses; attendance at tutorials on the field and in the laboratory, in the framework of the teachings and that of the training activities and seminars (excursions and exercises of land and interdisciplinary eni's seminars) are mandatory.

The credits are acquired prior positive assessment of profit (examination). Evaluations have individual character, and may consist of written and/or oral and/or exercises to be performed in the laboratory or in the field. All activities that allow the acquisition of credit must be assessed. The evaluation of the course units and related integrative and is expressed by specific committees, consisting of at least two teachers, including the head of the educational activity. The assessment is expressed out of thirty. For the "other activities" assessment generally consists in a judgment. Teachers can perform checks of the assessment of the students during the courses. These tests have the primary aim to monitor student in learning and to assist individual study; checks must be organized in ways and times that do not interfere with the activities of the teachings of the same semester. The results of these tests can be used by teachers to exempt deserving students from one part of the final exam. The composition of the examination boards and calendars examinations are approved by the Committee Coordination of Courses of Study (CCCS) and published at the beginning of the academic year. In case of justified grounds, the teacher in charge may postpone the date of an exam.

Workers and Part-time Students

Workers and Part-time students may apply to the Coordinator of CCCS illustrating their own training need. Students who enrol as part-time students will have an individual study plan that provides for different articulation of the training course and educational activities ad hoc. Individual method

Academic Calendar

The educational activities during the academic year 2014-2015 are divided into two semesters:

semester	Lectures	assessments	number of exam sessions
1 st	from 01/10/2014 to 16/01/2015	from 26/01/2015 to 27/02/2015	2
2 nd	from 02/03/2015 to 12/06/2015	from 15/06/2015 to 31/07/2015	2
		from 01/09/2015 to 30/09/2015	2

Transfers

Procedures and criteria for the recognition of credits acquired in other courses of study.

As for the recognition of credits, the requests submitted by individual students will be examined by the CCCS and the credits earned will be evaluated taking into account the general criteria set out below.

If coming from study programs of the same class, CCCS will recognize every credits earned by the student in the previous curriculum. If coming from different class courses, CCCS will evaluate the appropriateness of disciplines and content of the courses in which the student has acquired credits: credits attributable to the subject areas, ranging from the teachings characteristic, provided into the Master of Science in Petroleum Geology, will normally be approved by the Committee.

The CCCS will provide assistance to the student in compiling an individual study plan.

The credits earned by students in the context of international study programs at Universities in force of bilateral contracts with the University of Perugia will be recognized with reference to the European Credit Transfer System (ECTS). Credits earned by students at other Italian Universities, European Union or in other countries who do not follow the ECTS system, will be recognized on the basis of the documentation provided by the student. In the event of a bilateral agreement between the University of Perugia and the establishment of origin, we will proceed in accordance with the terms of the agreement.

Previously acquired knowledges and professional skills, not corresponding to particular teaching course, will be check by CCCS regarding the consistency with the objectives of the degree course, in any case within a maximum of 12 credits.

Final exam

The final exam consists in checking the ability of the student to work independently and to expose and discuss the results of an original work (Thesis), any experimental or theoretical, on a specific theme, topic, even in a research context. The thesis is carried out with the supervision of a teacher of Master of Science in Earth Sciences, and discussed by the student in the presence of a special committee appointed by the educational structure of reference. The Supervisor, possibly together with one or more co-Supervisors, assumes the role of supervisor of the thesis. The co-Supervisor must be experts in the topics of the thesis and not necessarily academics staff.

The thesis will be written in Italian (with extended abstract in English) or in English (with extended abstract in Italian). The Committee will be composed of 7 teachers, relating to the educational structure of reference and will normally include the Supervisor of the thesis.

In the assessment of the dissertation, the Committee will verify the ability of the student to work independently and to expose and discuss the results of an original work, experimental or theoretical, on a specific topic which follows to the training of the student. The criteria for the evaluation and the final score for the award of degree, will take into account the career of the student, timing and acquisition of credits, the quality of the Thesis and its presentation.

At the final examination will be awarded up to ten points, that will be added to the base score resulting from the weighted average of the tests carried out by the students during the two years of the course. If after the increase in the rating is equal to or greater than 110, the Committee, only if unanimous, may give praise.

Tutoring

The tutorial activities are organized and managed by a coordinator appointed by the CCCS. At the beginning of each academic year, students enrolled are assigned to teachers who are responsible (Tutors), in number of 3, which will follow the entire trail. The Tutors are appointed by the CCCS. At the beginning of each academic year, students enrolled are assigned to teachers who are responsible (Tutors), in number of 3, which will follow them in the entire educational carrier.

The person in charge as Head of Tutoring is Prof. Giorgio Minelli.

The tutors for the academic year 2014-15 will be Profs. Barchi, Cirilli and Minelli.

The tutors can be helped by deserving students pursuant to art. 2 of D.M. 198/03.

The tutoring service includes:

- collective services, organized by the Coordination Committee of the Study, among them: first reception (presentation and information on educational facilities), or initiatives aimed at groups of students with similar needs (eg. meetings held at the beginning of each academic year to verify the academic calendars information on study or how to participate to field trips);
- individual services, held by the Tutors, which essentially consist in listening to the problems in learning and suggest to the students appropriate solutions. Students can always ask for information and insights the Head of Tutoring and the Coordinator of the Committee.

With regard to services aimed at improving their graduate employment, the Coordination Committee of the Study annually organizes seminars and meetings with the main public and private actors, who are interested in the professional skills of the geologist (professional geologists, government, mining, etc.); students can also take advantage of services offered by the University. Moreover, in agreement with eni E&P Division and eni Corporate University, the CCCS organizes annual seminars both at its headquarters and at eni, visits to eni laboratories and facilities, and meetings with experts from various fields to illustrate the specific skills required by the market and in order to address and plan for short-and long-term training offer.

COORDINATOR OF THE STUDY COURSE
Prof. Simonetta Cirilli