

Faculty of **Science and Technology**

Second Level post-degree program in

Management of the natural environment and protected areas

Location: Department of Environmental Sciences, Botany and Ecology Section
Via Pontoni, 5 62032 Camerino
tel. 0737 404505 fax 0737 404508
gestione.ambiente@unicam.it.

President of the Class Council:

Prof. Oretta Murri oretta.murri@unicam.it

Class coordinator

Contact person for orientation, internationalization and the tutorship program:

Prof. Roberto Canullo roberto.canullo@unicam.it

Presentation

The **two-year Second Level Degree program in *Management of the Natural Environment and of Protected areas (LM-GANAP)*** is rooted in a strong tradition of research and applied studies in nature management and conservation; this degree program is the transformation of a School of Specialization with the same title, established by the University of Camerino in academic year 1998-1999.

The **LM-GANAP** is designed to respond to the demand for specialists in territory management, particularly in aspects related to the natural environment and natural resources, with attention to the need to integrate different areas of knowledge.

In order to prepare graduates for management of the environment, the program covers differing topics and approaches:

- nature and the environment (vegetation, fauna, geomorphology, survey and management methods, etc.);
- planning of the territory, protected areas, and networks;
- legislation and conservation;
- technical and instrumental training (environmental chemistry, SIT, monitoring, VAS, etc.).

Candidates for this two-year post-degree program should have a 1st Level degree (or another degree corresponding to 180 University Formation Credits = CFU); relevant or exceeding activities can be accepted toward admission.

Prerequisites for Admission

Enrollment in the degree program is admitted with the 1st Level degree (and previous degree-types, from other UNICAM faculties or other universities) when the candidate has earned at least 140 CFU accepted from the previous program of study (including professional and extracurricular activities). Candidates must accomplish any pre-requisite compensations by December 31 of the year following enrolment.

Students with more significant lacunae in their preparation (fewer than 140 CFU recognized) will have to resolve them (at least up to the 140 CFU benchmark) before being allowed admission to the degree program.

The full 180 CFU are recognized from the 1st Level degree (three year = "Laurea triennale") in "Sciences for Nature and the Environment" (class 27) addressed to "Analysis of Resources and

Natural Systems” program (and analogous degrees from previous year’s programs) established by the University of Camerino.

Candidates are encouraged to avail themselves of the tutorship service offered to assess their CFU, before applying for admission (Prof. R. Canullo- tel.: 0737 404505, email: roberto.canullo@unicam.it).

Together with their application, prepared according to the instructions of the Registrar (“segreteria studenti”), candidates should present their university certificate and transcript (specifying the courses passed, date, score, and description of each course). The Credits Commission and the Course of Study Council of Classes 27 and 82M will use this information to evaluate the candidate’s preparation, recognize CFUs, and if necessary specify lacunae in the candidate’s preparation that need to be addressed.

Candidates may attach other titles or certificates deemed pertinent. All certificates can be substituted with declarations made according to Italian law DPR 403/98.

Educative Objectives

The **LM-GANAP** degree program is designed to provide the foundations, methods and instruments for gaining knowledge and decision-making skills in managing protected areas and territorial spheres, in processes of territory planning and organization (also with functions of coordination), in planning and executing activities of conservation, protection and management of complex systems and natural resources (including environmental analysis, monitoring and evaluation).

Graduates in the University of Camerino’s **Second Level Degree GANAP** are able to:

1. Knowledge and understanding	Understand the fundamentals of ecological systems, biological-environmental components, procedural and legislative aspects, and related naturalistic disciplines, applying their methods of inquiry.
2. Applying knowledge and understanding	a) Utilize methods, instruments and techniques of estimation, surveying and representation of ecological and environmental systems and their biotic and abiotic components. b) Use and develop protocols of examination, monitoring and evaluation; principles and models on an ecological basis for management and planning of complex territorial realities, natural resources, and protected areas.
3. Autonomy in forming judgments	a) Apply knowledge gained, adapting it to various ecological and biogeographic contexts in terms of different sources of environmental disturbance, on the levels of application and research. b) Operate autonomously in the workplace, using criteria of sustainability, prevention, ethics and ecological function, as well as criteria of multidisiplinarity and coordination.
4. Communication skills	a) Communicate concepts and criteria in understanding environmental problems, possible solutions and critical points on the level of management, monitoring and evaluation. b) Use English language to facilitate technical-scientific communication, reporting and planning in the specific sphere of responsibility.
5. Learning skills	Draw upon skills gained during the course of studies to autonomously undertake later programs of study to specialize and update knowledge and skills in one’s professional development.

In order to achieve these objectives, the program of studies for the **LM-GANAP** degree includes activities for the acquisition of:

- foundations, methods and instruments for correct analysis of biological, chemical-physical and territorial components useful for examination, monitoring and evaluation of the status of biodiversity, systems, and resources;
- knowledge about ecological processes, direct and indirect bioindication and environmental variations of response to disturbances of anthropic or natural origin;
- technical and regulatory elements for coordinating or contributing to instruments for planning and organizing territory on an ecological basis;
- knowledge of the principles of sustainability, ethics, ecological function, and national and international strategies for management of protected areas, natural resources and individual biological elements;

In particular, the program entails:

- laboratory activities and exercises, for case studies and in the field (about 180 hours)
- apprenticeships and internships in protected natural areas, agencies, territorial entities, research entities, with professionals, firms and Italian and international administrations, including the context of the Erasmus and Leonardo programs and current international cooperation accords.
- Seminars for further inquiry and opportunities for post-degree tutorships.

Should students choose study abroad, their attendance will be automatically recognized; the CFUs will be attributed according to the established modality, and there will be an additional evaluation at the moment of the final test for graduation with the Second Level degree.

Employment areas and professional job opportunities

Graduates with the two-year Second Level degree “in **Management of the Natural Environment and Protected Areas** are prepared to work:

1) in Public Administrations working to direct, manage and examine territory and natural resources (local and territorial Bodies, protected areas, environmental agencies, etc.).

2) in private Bodies, agencies, service societies, and as independent professionals,

to carry out tasks of planning, design, coordination and direction, validation, examination and inspection, direction and professional conduction and consultant in terms of:

- census, analysis, cartographic expression of the naturalistic patrimony and natural resources;
- inspection, surveillance and monitoring of the environment and natural resources;
- study and evaluation of environmental quality, environmental incidence and impact;
- restoration and management of the natural environment;
- organization, management and direction of museums, botanical gardens, centers for naturalistic and environmental education, naturalistic itineraries and specialized popularization programs;
- environmental and territorial planning, with particular reference to protected areas;
- promotion and coordination of environmental policy and orientation programs (for example, working as Environmental Authority);
- consulting in the environmental-naturalistic sphere;
- preparation and management of Community projects of environmental target;
- research and education activities.

On the basis of article 1, c. 18 L. 4/99, the 82M second level degree grants admission to the state boards for enrollment in section "A" of the following professional registers: Biologist, Agronomical and Forest Degree holder, Landscape Architect, Geologist.

The roles and professions foreseeable according to the formation of the **LM-GANAP** graduate, following the codes recently provided by the ISTAT, are:

2.2.2.0.2	Urban planners and specialists in territory recovery and conservation
2.3.1.1.1	Biologists
2.3.1.1.5	Botanists
2.3.1.1.6	Zoologists
2.3.1.1.7	Ecologists
2.6.2.0	Researchers, degreed technicians and similar.
1.3.1.1	Entrepreneurs, managers and directors of small businesses in agriculture, forests, hunting, and fishing.
1.3.1.9	Entrepreneurs, managers and directors of small businesses in other sectors of economic activity.
2.6.5.4	Educators and experts in formational and curricular planning.

Final examination

In order to earn the degree, it will be necessary to pass a **final exam** in which the candidate writes an original experimental thesis or project that may include activities carried out during internships, apprenticeships, or cultural or scientific programs or collaborations. The candidate discusses this work before a graduation commission, which then evaluates the final exam, assigning the candidate's graduation score and related 30 CFUs.

Coursework organization

- Scheduling

The two-year degree program is organized into semesters. In order to earn the degree, the candidate must earn 120 CFU.

Coursework follows the conventional modality with face-to-face lessons, laboratories and fieldwork.

The calendar for academic year 2008-2009 is:

Semester 1 October 1, 2008 - January 30, 2009

Semester 2 March 2, 2009 - June 12, 2009

- Lessons Timetable

The lessons timetable is published on the announcement boards at the LM-GANAP building and published on the web site <http://www.unicam.it/> before the beginning of each academic period.

- Internships

Students carry out an internship at protected natural areas, museums, agencies, territorial research Bodies, with professionals, companies, laboratories, Italian and international administrations, including possibilities through the Erasmus or Leonardo Programs and through current cultural and scientific accords. It is also possible to have an internship at a UNICAM structure, if the choice is well-founded and approved by the Faculty of Science and Technology Council (Torricchio Nature reserve, Natural Sciences Museum, Botanical Garden, etc.).

Verification of internship activities and periods of study abroad will be based on certifications and reports on activities carried out, presented by the tutor or reference professor and by the student,

or according to the modalities established by the Erasmus Project. The Class 27 and 82M Course of Studies Council will assign related CFUs.

- Tutorship

Tutorship activities are carried out together with those for Class 27. The coordinator follows activities regarding the recognition of previously or currently earned CFUs and work done to fill-up lacunae in the student's academic preparation.

- CFU value:

The university CFU corresponds to 25 hours of student work, divided as follows:

1 CFU = 8 hours of face-to-face lessons + 17 hours of individual study

1 CFU = 12 hours of exercises/laboratories/excursions + 13 hours of individual study

Attendance requirements

Students must attend at least 50% of each didactic activity (strictly including activities and exercises in the laboratory and in the field).

Courses given by other degree programs or activities or courses deemed necessary to fill-up a student's lacunae in preparation are excluded from this didactic organization and the attendance requirement (following, if necessary, the didactic organization of the related Courses of Study).

A student with lacunae to be filled-up must do so by December of the calendar year following their initial application. In the case of deficiencies in linguistic or information technology skills, even after the entrance test, this limitation may be deferred.

Students who fail to provide certification for attendance or to fill-up gaps in academic preparation as outlined above will have to repeat the academic year.

In addition, the Class Council may stipulate a minimum threshold number of CFUs that students must obtain to pass from the first to the second year, based on the model established by the Regional Entity for the Right to University Study (ERSU) for scholarship and/or room and board benefits.

Exams

Students may take exams in the pauses between academic periods, or in the months of June, July, August or September.

Graduation ceremony calendar

Month	Day	Year
JUNE	27	2008
JULY	25	2008
SEPTEMBER	-----	2008
OCTOBER	01	2008
NOVEMBER	21	2008
DECEMBER	19	2008
JANUARY	-----	2009
FEBRUARY	20	2009
MARCH	13	2009
APRIL	08	2009

Curriculum (program of studies)

The **LM-GANAP** course of studies confers 120 CFUs according to the following semester plan:

class 82M – Management of the Natural Environment and of Protected Areas		
First Year	Semester 1	CFU
Secs-P06 AGR/01 BIO/07	<i>Economy and sustainability for the management of the environment</i>	8
IUS/10 BIO/07	<i>Environmental Legislation and the typology of Protected Areas</i>	8
AGR/11 BIO/02 or BIO/05	<i>Special systematics*</i>	6
GEO/03/04/05	<i>Geological and geomorphological applications for territory planning</i>	6
	Semester 2	
Chim/12	<i>Environmental Chemistry</i>	6
MED/42 BIO/05/03	<i>Surveillance and monitoring of the environment</i>	6
AGR/05 BIO/03/05 SECS-S/02	<i>Assessment and evaluation of biodiversity</i>	9
BIO/05/03	<i>Management and protection of biological resources</i>	8
		57
Second Year	Semester 1	
BIO/03	<i>Biology of Plant Populations</i>	3
ING-INF/05 GEO/04 ICAR/06	<i>Territorial Informational Systems and Telesurveying</i>	6
ICAR/15	<i>Planning of the environment and of protected areas</i>	6
ING-INF/05 BIO/07 GEO/04	<i>Project, planning and procedures of environmental evaluation</i>	6
	Semester 2	
./.	<i>Student-chosen elective</i>	6
./.	<i>Experimental thesis and final examination</i>	30
./.	<i>Apprenticeships, internships, linguistic and information technology skills</i>	6
		63
* Drawn from class 27		

CI 82M - TABLE 2: COURSES AND MODULES YEAR 1						
N	Course	CFU total	Modul	CFU per SSD	Type of module & CFU given (a,b,c,d,e,f)	Score Pass/fail
1	Economy and sustainability for management of the env.	8	Rural & Environ. Economics	2 AGR/01 1 Secs-P06	2b 1c	score
			Management & Env. Sustainability	5 BIO/07	5b	score
2	Environmental Legislation and typology protected areas	8		5 IUS/10 3 BIO/07	5c 3b	score -
				3 AGR/11	3b	score
3	Special systematics	6	Entomology	3 BIO/02 (o 3 BIO05)	3b	score
			Bryology or Protozoology (verified choice)		3b	score
4	Geol. and geomorph applications for territory planning	6		1 GEO/03 2 GEO/04 3 GEO/05	1c 1b 3b	score
				CHIM/12	b	score
			Integrated	2 MED/42	2b	score
6	Surveillance and Monitoring of the Environment	6	Plant bioindicators	2 BIO/03	2b	score
			Animal bioindicators	2 BIO/05	2b	score
				1 SECS-S/02 2 BIO/05	1b 2b	score -
7	Assessment and Evaluation Biodiversity	9	Survey & census methods for animal diversity	1 SECS-S/02 2 BIO/05	1b 2b	score -
			Survey & census methods for Plant & forest system diversity	2 BIO/03 3 AGR/05	2b 3b	score -
				4 BIO/03 4 BIO/05	4b 4b	score score
8	Management & Protection of Biological Resources	8	Botanic-vegetational resources	4 BIO/03	4b	score
			Animal resources	4 BIO/05	4b	score

CI 82M - TABLE 2: COURSES & MODULES YEAR 2						
N	Course	CFU total	Mod.	CFU per SSD	Type of Modulei & credit	Score Pass/fail
9	Plant Population Biology	3		BIO/03	3b	score
10	Territorial Informational Systems and Telesurveying	6		3 ING-INF/05 2 GEO/04 1 ICAR/06	3a 2b 1b	score -
				ICAR/15	c	score
				1 ING-INF/05	1a	score
12	Project, planning & procedures of environmental Evaluation	6		3 GEO/04, 2 BIO/07	5b	score
13	Elective (student chosen)	6			d	score a/o Pass/fail
14	Other (apprenticeships, internships, linguistic and information technology skills)	6			f	score a/o Pass/fail
15	Experimental thesis & Final examination	30			e	score

Optional courses and program of studies

Students in the LM-GANAP degree program may submit for approval of the Class Council an individualized curriculum (program of studies), indicating the courses they wish to substitute in alternative to those stipulated by the standard curriculum, and providing their reasons. This should be done at the moment of enrolment or by September 30 of the academic year preceding that for the proposed curriculum.

In particular, in order to promote academic orientation toward themes of **sustainability and territory management**, the student may consider the 6-CFU courses on "Plant Biomasses for Energy" and "Principles of Restoration Ecology" (the latter in English), which will be activated if at least 3 students request them.

Other information

The **LM-GANAP** program of studies can be consulted at the academic centers, the Presidency of the Class, and the academic seat of the Class.

Coursework takes place in the traditional manner (face-to-face lessons, laboratories, etc.) at the academic center of the Faculty of Science and Technology, and at the Department of Environmental Sciences, Botany and Ecology Section.
There is a maximum of 75 openings for students.