

**Faculty: Science and Technology**  
**First level degree in Biologia della Nutrizione**  
**Class: L-13 Biology**

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## **1. Introduction**

The main objective of the course leading to the degree in Biologia della Nutrizione for first level students in class L13 is to provide a broad and sound cultural background in the life sciences and their applications in nutrition-related fields. The outcome of the course is a professional figure able to successfully integrate into research labs, performing analytical functions and control in the agri-food production, or performing functions of nutritional surveillance and assessment of body composition.

The credits obtained with this first level degree are prerequisites for enrolment in the Second level degrees related to Biology (LM6); in particular the course prepares students specifically for the second level degree in Biological Sciences Curriculum Nutrition and functional food.

## **2. Qualifying Educational Objectives**

Graduates of the degree course in Biologia della Nutrizione of the University of Camerino are able to:

- critically understand the basic content in the various fields of biology and apply the scientific method of inquiry to specific problems;
- understand the role of food on physiological functions, physical and mind performance;
- perform quality controls;
- apply the know-how and skills acquired to provide technical and professional support to productive and technological activities, laboratories and services, with particular reference to the food to ensure compliance with standards security, to protect and promote the health of consumers;
- apply the know-how and skills acquired to the production and preservation of foods of animal and vegetable;
- adapt the know-how and skills acquired at specific issues such as evaluation of nutritional needs and energy of an organism;
- work with defined degrees of autonomy and assessment in the workplace and in subsequent training courses;
- communicate and manage information with regard to concepts, problems and solutions related to the Biology of Nutrition;

- use the English language to exchange general information and in the specific area of Biosciences;
- use the skills acquired during the course of study to engage with defined degrees of autonomy subsequent training and/or activities of its specialized work environments.

To achieve the objectives indicated above, the Biologia della Nutrizione degree program includes formative activities that should enable the student to:

- acquire sufficient basic elements of mathematics, statistics, computer science, physics and chemistry;
- acquire:
  - the theoretical basis and the appropriate operating elements pertaining to the biology of microorganisms, plants and animals (including humans);
  - the morphological, functional and molecular aspects of the biology;
  - the mechanisms of heredity and development;
  - the food controls necessary for standards of safety,
  - the actions to protect and promote the health of consumers;
- acquire knowledge about the role of nutrition on physiological functions;
- provide the training in different disciplines, laboratory activities for not less than 25 total CFU;
- study outside the university as an apprentice in a related industry, a public institution or a laboratory, in Italy or abroad, in the context of international agreements.

### **3. Employment areas for graduates and career opportunities**

Graduates with the Biologia della Nutrizione degree have the opportunity to gain positions in:

- food industries performing HACCP analysis;
- assistant in biomedical and agri-food analysis laboratories;
- assistant in the determination of optimal diets for community and sporting groups.

- in nutritional surveillance programs and assessment of body composition.
- in research laboratories;
- in the field of diffusion of scientific culture.
- in the field of nutritional education

The Degree in Biologia della Nutrizione affords admission to the state boards for membership in Section B of the Biologist's Professional Register.

## **4. Teaching organization**

### **4.1 European Credit Transfer and Accumulation System (ECTS)**

To earn the degree in Biosciences and Biotechnology, the student must gain 180 credits, with 60 credits representing the average study workload in one academic year for a full-time student having a suitable starting preparation. According to the European Credit Transfer and Accumulation System (ECTS) one credit is equal to 25 working hours which could include lectures, practical laboratory courses and individual study required to reach the learning outcome. The ratio between the time spent for tutored activities and the time spent for individual studies should usually be about 1:3. One ECTS usually corresponds to a 8-hour frontal lecture or a 12-hour practical session. Moreover a credit should correspond to a 25-hour workload for a student preparing the final exam and the internship (stage). ECTS of training activities selected from other degree courses will be calculated according to university's degree course handbook.

### **4.2 Assessment**

All activities concerning ECTS must be assessed. The assessment is expressed by specific committees chaired by the staff in charge of the training activities. Courses can be either individual or integrated with a corresponding laboratory module. In case of complementary courses there will be one single exam. Course examinations are usually carried out in written and/or oral form. In case of integrated courses specific tests may be required in addition to the written and oral examination. Unless otherwise indicated, training activities are assessed by a grade expressed in 30<sup>ths</sup> with the possibility of the additional recognition of "lode" (with honors). To gain credits for internships a report on the performed activities countersigned by the teacher is required. In this case the assessment would be either pass (idoneo) or fail (non idoneo).

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### 4.3 Lecture and exam calendar

Teaching activities will start on 5<sup>th</sup> October 2009, with the exception of the pre-courses for new undergraduate students, which will start on 1<sup>st</sup> October 2009. They are divided into 2 semesters according to the following calendar:

|                               |  |    |                                |
|-------------------------------|--|----|--------------------------------|
| I Semester Teaching Activity  | 1 <sup>st</sup> October 2009 (1 <sup>st</sup> Year)<br>5 <sup>th</sup> October 2009 (2 <sup>nd</sup> and 3 <sup>rd</sup> Year) | to | 29 <sup>th</sup> January 2010  |
| I Exam session                | 1 <sup>st</sup> February 2010  | to | 26 <sup>th</sup> February 2010 |
| II Semester Teaching activity | 1 <sup>st</sup> March 2010   | to | 11 <sup>th</sup> June 2010     |
| II Exam Session               | 14 <sup>th</sup> June 2010   | to | 30 <sup>th</sup> July 2010     |
| III Exam Session              | 31 <sup>st</sup> August 2010   | to | 1 <sup>st</sup> October 2010   |

Course information related to time and place of lectures is available on-line at:  
<http://www.unicam.it/studenti>.

The calendar of exam sessions for each course is available at:  
<https://didattica.unicam.it>

Students who want to take an exam must register on-line (<https://didattica.unicam.it>).

The exam program is the last teaching program carried out for the same course. Therefore the program carried out during the course will generally be valid for 12 months from the end of teaching activities.

### 5. Final exam

The final exam (esame di laurea) consists in a public discussion of a written report describing the internship experience, with the goal of evaluating both the overall preparation of the student and the quality of the work carried out during the internship period. The report must be prepared under the guidance of a professor appointed by the Chairman. The student is admitted to the internship experience only upon completion of 120 CFU and to the final examination only upon completion of 180 CFU.

The final grade, expressed in 110<sup>th</sup> with the possibility of the additional recognition of "lode" (with honors), evaluates the student's curriculum and his scientific preparation achieved at the end of his course of study. The exam will be taken in front of a special Committee constituted in accordance with the University rules.

To determine the final grade, the Committee first evaluates both public presentation and written report, assigning a grade out of 30. Then the Committee determines the final grade using the following procedure:

- the weighted average of all the grades obtained in the various courses, including the grade just obtained for the final report, and training activities carried out during the three-year degree, is calculated using the Credit Units as the weighting factor;

- the weighted average is transformed into a percentage
- this percentage is multiplied by a coefficient associated with the duration of the student's academic career (three years: 1.09; four years: 1.07; five or more years: 1,05);
- to this is added the product of 0.05 times the number of credits attained "con lode";
- the result of this calculation is represented as an integer percentage, by adding 0.5 and then retaining only the integer part;
- the committee is allowed to add up to 2 units to the calculated grade, in the case of special activities in the student's curriculum.
- if the calculated grade is equal to or greater than 111, the committee may confer the label "lode" with a unanimous vote.

## **6. Tutoring, vocational guidance and internship**

The Class Advisory Board will assign to each student a tutor to provide individual guidance throughout the student's university career. During the course of each semester, the tutoring coordinator will organize regular group meetings to discuss problems which may arise in any of the training activities. Students are encouraged to contact instructors by e-mail to request additional explanations on topics covered in class. Furthermore, the Class Advisory Board will provide vocational guidance to students in the third and final year of the program. The internship scheduled for the III year, after the acquisition of 120 CFU, should be performed in an industrial, hospital or research institution laboratory, chosen with the assistance of the Stage and Placement office. A written report describing the internship experience must be presented at the end of the stage.

## **7. Mobility and Internalization**

The University of Camerino has underwritten agreements with foreign Universities and Institutions making possible for students to participate to exchange programs, such as Erasmus and Erasmus placement. In this regard, the second level degree in Biological Sciences has underwritten agreements with the following European Universities:

| Country        | University                       | Language           | Activity       |
|----------------|----------------------------------|--------------------|----------------|
| Portugal       | Istituto Politécnico de Santarém | Portuguese/English | Courses/Thesis |
| United Kingdom | Westminster University (London)  | English            | Courses/thesis |

Information related to the internationalization is available on-line at:  
[http://web.unicam.it/international/mobility/mob\\_rel\\_int\\_eng.asp](http://web.unicam.it/international/mobility/mob_rel_int_eng.asp)

Further information can be obtained from the representative to the Internalization.

## **8. Degree programs and curricula**

The degree program in Biologia della Nutrizione is divided in core courses (132 CFU) and elective courses (16 CFU). The remaining credits are devoted to: courses aimed at increasing proficiency in English (9 CFU), practical laboratory courses (12 CFU), the stage (8 CFU) and the final exam (3 CFU). Possible elective courses are listed below. Note that a student may submit for approval by the Class Advisory Board individual curriculum for the following academic year, proposing learning goals other than those proposed in the standard curriculum. The deadline for the presentation of the individual curricula is the 15<sup>th</sup> of October of the academic year to which the curriculum refers. The organization of the standard curriculum with the list of the disciplines and subjects, the division into modules, and the number of credits awarded is presented in the table below.

### Year 1

| N | Course                             | CFU | Modules | CFU per SSD | Tipology (a,b,c,d,e,f,s) | Grade or Pass/Fail |
|---|------------------------------------|-----|---------|-------------|--------------------------|--------------------|
| 1 | Biologia Cellulare e microbiologia | 9   | mod 1   | 4 BIO/06    | a                        | grade              |
|   |                                    |     | mod 2   | 5 BIO/19    |                          |                    |
| 2 | Chimica generale e inorganica      | 8   |         | CHIM/03     | a                        | grade              |
| 3 | Matematica                         | 8   |         | MAT/07      | a                        | grade              |
| 4 | Statistica e informatica           | 7   | mod1    | 3 MAT/06    | a                        | grade              |
|   |                                    |     | mod 2   | 4 INF/01    |                          |                    |
| 5 | Fisica                             | 7   |         | FIS/03      | a                        | grade              |
| 6 | Chimica organica                   | 7   |         | CHIM/06     | a                        | grade              |
| 7 | Genetica generale                  | 5   |         | BIO/18      | a                        | grade              |
| 8 | Inglese                            | 9   |         | 6 L-LIN/12  | e                        | grade              |
|   |                                    |     |         | 3 L-LI /12  |                          |                    |
| 9 | Laboratorio di Biologia I          | 6   | mod 1   | 3 BIO/06    | c                        | pass/fail          |
|   |                                    |     | mod 2   | 3 CHIM/12   | a                        |                    |

### Year 2

| N  | Course                                    | CFU | Modules | CFU per SSD | Tipology (a,b,c,d,e,f,s) | Grade or Pass/Fail |
|----|---|-----|---------|-------------|--------------------------|--------------------|
| 10 | Biologia molecolare                       | 6   |         | BIO/11      | a                        | grade              |
| 11 | Biochimica                                | 7   |         | 6 BIO/10    | a                        | grade              |
| 12 | Istologia ed Anatomia                     | 9   | mod 1   | 4 BIO/06    | b                        | grade              |
|    |   |     | mod 2   | 5 BIO/16    |                          |                    |
| 13 | Fisiologia                                | 7   |         | BIO/09      | b                        | grade              |
| 14 | Tossicologia e patologia della nutrizione | 8   | mod 1   | 4 BIO/14    | c                        | grade              |
|    |   |     | mod 2   | 4 MED/04    |                          |                    |
| 15 | Biologia animale e vegetale               | 13  | mod 1   | 4 BIO/05    | b                        | grade              |
|    |   |     | mod 2   | 3 BIO/06    |                          |                    |
|    |   |     | mod 3   | 6 BIO/01    |                          |                    |
| 16 | Laboratorio di Biologia II                | 6   | mod 1   | 3 BIO/10    | b                        | pass/fail          |
|    |   |     | mod 2   | 3 BIO/09    |                          |                    |

### Year 3

| N  | Course  | CFU | Modules | CFU per SSD | Tipology (a,b,c,d,e,f,s) | Grade or Pass/Fail |
|----|---|-----|---------|-------------|--------------------------|--------------------|
| 17 | Genetica applicata e dei microrganismi        | 9   |         | BIO/18      | b                        | grade              |
| 18 | Parassitologia e microbiologia degli alimenti | 8   | mod 1   | 4 BIO/19    | b                        | grade              |
|    |   |     | mod 2   | 4 VET/06    | c                        |                    |
| 19 | Biochimica della nutrizione                   | 6   |         | BIO/10      | b                        | grade              |
| 20 | Igiene e tecnologie alimentari                | 8   | mod 1   | 4 MED/42    | b                        | grade              |
|    |   |     | mod 2   | 4 AGR/15    | c                        |                    |
| 21 | Insegnamenti a scelta dello studente          | 16  |         |             | d                        | grade              |
|    | Stage   | 8   |         |             | f                        |                    |
|    | Esame finale                                  | 3   |         |             | e                        |                    |

- a) basic course  
 b) core course  
 c) supplementary course  
 d) elective course  
 e) for the final exam and for knowledge of a foreign language  
 f) other (additional language skills, computer skills, internship/work experience stage etc.)

### Elective courses

| Course  | CFU |
|---|-----|
| Biochimica degli xenobiotici  | 4   |
| Biochimica delle trasformazioni alimentari                                    | 4   |
| Sicurezza Alimentare  | 4   |
| Strumenti bibliografici e basi di dati on-line per lo studio delle bioscienze | 4   |
| Endocrinologia comparata  | 4   |
| Sorveglianza nutrizionale e valutazione della composizione corporea           | 4   |
| Risorse ittiche del territorio  | 4   |
| Legislazione alimentare   | 4   |

## **9. Entry Requirements**

Admission to studies for the Degree in Biologia della Nutrizione requires the upper-level middle school diploma or equivalent foreign qualification. All students who enrol in Biologia della Nutrizione degree must attend an interview aimed at orienting students to remedial courses that may be necessary to overcome any lack of academic preparation, in particular in mathematics (in the fields of Algebra, Geometry and Trigonometry), physics and chemistry. The remedial courses are planned before the beginning of the lessons of the first year.