



# UNIVERSITÀ DEGLI STUDI DI PALERMO

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| DEPARTMENT              | Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                  |
| ACADEMIC YEAR           | 2021/2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                  |
| MASTER'S DEGREE (MSC)   | CONSERVATION BIOLOGY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                  |
| INTEGRATED COURSE       | SAMPLING METHODS - INTEGRATED COURSE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                  |
| CODE                    | 21755                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                  |
| MODULES                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                  |
| NUMBER OF MODULES       | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                  |
| SCIENTIFIC SECTOR(S)    | BIO/05, BIO/03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                  |
| HEAD PROFESSOR(S)       | MARRONE FEDERICO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Professore Ordinario | Univ. di PALERMO |
| OTHER PROFESSOR(S)      | MARRONE FEDERICO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Professore Ordinario | Univ. di PALERMO |
|                         | GUARINO RICCARDO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Professore Associato | Univ. di PALERMO |
| CREDITS                 | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                  |
| PROPAEDEUTICAL SUBJECTS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      |                  |
| MUTUALIZATION           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      |                  |
| YEAR                    | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                  |
| TERM (SEMESTER)         | 1° semester                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                  |
| ATTENDANCE              | Not mandatory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                  |
| EVALUATION              | Out of 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                  |
| TEACHER OFFICE HOURS    | <p><b>GUARINO RICCARDO</b></p> <p>Monday 15:00 17:00 Sede del Consorzio Universitario, corso Vittorio Emanuele, 92, 93100 Caltanissetta</p> <p>Wednesday 09:00 12:00 Il ricevimento ha luogo presso lo studio del docente, ubicato in Via Archirafi, 20 - piano 5°. Si specifica che è buona prassi contattare il docente prima del giorno di ricevimento. Il docente è pienamente disponibile a concordare giorni ed orari diversi da quello specificato, previo appuntamento. Per appuntamento, scrivere a: <a href="mailto:riccardo.guarino@unipa.it">riccardo.guarino@unipa.it</a></p> <p><b>MARRONE FEDERICO</b></p> <p>Monday 10:00 11:00 Via Archirafi 18, primo piano, stanza I8</p> <p>Tuesday 15:00 17:00 Sede del Consorzio Universitario, corso Vittorio Emanuele, 92, 93100 Caltanissetta</p> <p>Wednesday 10:00 11:00 Via Archirafi 18, primo piano, stanza I8</p> <p>Friday 10:00 11:00 Via Archirafi 18, primo piano, stanza I8</p> |                      |                  |

**DOCENTE:** Prof. FEDERICO MARRONE

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| <b>PREREQUISITES</b>      | To achieve the educational objectives, a basic knowledge of Zoology and Botany is required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>LEARNING OUTCOMES</b>  | Knowledge and understanding<br>Knowledge of the different sampling methods of animal and plant organisms.<br>Understanding of the different use, meaning and applicability of each method.<br>Applying knowledge and understanding<br>Ability to choose and apply the correct sampling method.<br>Making judgements<br>Ability to critically analyse and interpret the data coming from the application of different sampling and monitoring techniques.<br>Communication<br>Ability to motivate the choice of a sampling technique and to report on the outcomes of its application with reference to the objectives of the sampling itself.<br>Lifelong learning skills<br>Ability to refer to literature in order to adapt sampling approaches to specific goals and to the environmental conditions of the sampling itself.                                                                                                                                                                                                                                                                 |
| <b>ASSESSMENT METHODS</b> | The learning is assessed through an interview. The candidate has to properly answer three to six oral questions dealing with all the programme. The assessment aims at evaluating 1) the knowledge and understanding of the subject, and 2) the acquisition of interpretation expertise and independent judgment. The candidate has to show an adequate knowledge, acquisition of interpretative skills, capacity of connecting and processing the arguments, as well as a relevant presentation capacity. The final grade will be expressed in thirtieth and the interview will be judged as "insufficient" when the student will demonstrate difficulty to focus on the proposed topics, a shallow knowledge of the arguments, and limited exposure ability. As the degree of details of the proven knowledge increases, the positivity of the grade will increase proportionally. The maximum score is obtained in case of excellent mastery and critical interpretation of the subject of the course, along with good communication skills proved by the use of proper scientific language. |
| <b>TEACHING METHODS</b>   | The class will be based on traditional lectures (32 hours, 4 CFU) and practical classes (24 hours, 2 CFU), arranged in two modules.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

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| <b>MODULE</b><br><b>INLAND WATER FAUNA</b><br><br><i>Prof. FEDERICO MARRONE</i>                                                                                                                           |                               |
| <b>SUGGESTED BIBLIOGRAPHY</b>                                                                                                                                                                             |                               |
| Dispense fornite dal docente.                                                                                                                                                                             |                               |
| <b>AMBIT</b>                                                                                                                                                                                              | 20490-A scelta dello studente |
| <b>INDIVIDUAL STUDY (Hrs)</b>                                                                                                                                                                             | 47                            |
| <b>COURSE ACTIVITY (Hrs)</b>                                                                                                                                                                              | 28                            |
| <b>EDUCATIONAL OBJECTIVES OF THE MODULE</b>                                                                                                                                                               |                               |
| The module aims at providing a basic knowledge of Palearctic freshwater animal diversity, with a special focus on Sicilian fauna, and of sampling and identification techniques for selected animal taxa. |                               |

## SYLLABUS

| Hrs | Frontal teaching                                                  |
|-----|-------------------------------------------------------------------|
| 2   | Introduction                                                      |
| 2   | Introduction to Sicilian inland water and their biota             |
| 6   | Inland water invertebrates - characteristics and sampling methods |
| 6   | Inland water vertebrates - characteristics and sampling methods   |
| Hrs | Practice                                                          |
| 12  | Sampling and identifying inland water invertebrates               |

**MODULE  
FLORA AND VEGETATION**

*Prof. RICCARDO GUARINO*

**SUGGESTED BIBLIOGRAPHY**

B. Cerabolini (ed.), 2015 - Relazione finale del Programma di monitoraggio scientifico di Specie Vegetali e Habitat della Direttiva 92/43/CE - GESTIRE LIFE11NAT/IT/044

Dispense fornite dal docente

|                               |                               |
|-------------------------------|-------------------------------|
| <b>AMBIT</b>                  | 20490-A scelta dello studente |
| <b>INDIVIDUAL STUDY (Hrs)</b> | 47                            |
| <b>COURSE ACTIVITY (Hrs)</b>  | 28                            |

**EDUCATIONAL OBJECTIVES OF THE MODULE**

The module aims to provide basic knowledge on the flora and vegetation of Sicily, on the main methods of sampling and identification of vascular plants, on the main methods of analyzing the data collected in the field.

**SYLLABUS**

| <b>Hrs</b> | <b>Frontal teaching</b>                                                                                                                                 |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2          | Introduction: the concepts of "flora", "vegetation", "species / area relationship" and their use in biodiversity assessment and habitat identification. |
| 4          | Introduction to the flora and vegetation of Sicily, with particular reference to the habitats of the EU Directive 92/43                                 |
| 4          | Floristic survey - methods of field sampling and data analysis                                                                                          |
| 6          | Vegetational survey - characteristics and methods of sampling and data analysis                                                                         |
| <b>Hrs</b> | <b>Practice</b>                                                                                                                                         |
| 12         | Collection and identification of vascular plants, vegetation sampling                                                                                   |