

Syllabus

2017/2018

Course	Course Code	Course Credits	Course Year
MANAGEMENT OF AQUATIC RESOURCES: FISHERIES	F7502Q018	6	2
Lecturer: Prof. del Rio-Rodriguez, Rodolfo E.			
Contents: Currents status of Aquaculture, Key aspects for the development of aquaculture, Aquaculture Systems, Aquaculture and the Environment			
References: Aquaculture, Resource use and the environment (2015), Boyd & McNevin, Wiley-Blackwell, First Edition Echinoderm aquaculture (2015), Brown & Eddy, Wiley-Blackwell, First Edition Fish Disease: Diagnosis and Treatment (2010), Noga, E. J., Wiley-Blackwell, Second Edition.-			
Aims: The present course examines key aspects and critical issues of marine aquaculture, as part of the primary production activity (aquaculture) with the largest growth rate among other food production techniques worldwide. Aquaculture nowadays supply fifty percent of fish products consumed in the world. The big challenge that aquaculture is facing concerns with sustaining and ever increasing demand circumscribed by environmental sustainability Therefore, the course aims to provides and overall knowledge of marine aquaculture, its potential in food security and the negative aspects/mitigations measures of the subject.			
Recommended a priori knowledge: Comparative anatomy, fish anatomy and physiology			
Teaching form: - Lessons: 3 credits - Tutorials: 3 credits Period: first semester			
More information: Website: www.marinesciences.unimib.it			
Examination type: - Written and/or oral examination			
Mark range: 18-30/30			
Syllabus: Course Part I MARINE AQUACULTURE 1. CURRENT STATUS OF AQUACULTURE			

MARINE SCIENCES - SCIENZE MARINE

- a. Definition of Aquaculture
 - b. A bit of History
 - c. Aquaculture in the world
 - d. Marine Aquaculture
 - e. Perspectives
2. KEY ASPECTS FOR THE DEVELOPMENT OF MARICULTURE
- a. Environment
 - b. Nutrition
 - c. Health
 - d. Site Selection
 - e. Best Management Practices
 - f. Legal Aspects to Observe
3. AQUACULTURE SYSTEMS
- a. Extensive, semi-intensive, intensive and super-intensive
 - b. Ponds, tanks, cages, raceways
 - c. Culture of selected marine species
 - i. Sea Bream
 - ii. Scallops, Oysters
 - iii. Sea cucumbers
 - iv. Support cultures (algae, micro-invertebrates)
 - d. Especial issue: *Biofloc* aquaculture
4. AQUACULTURE AND THE ENVIRONMENT
- a. The Ugly side of aquaculture and their remedies
 - i. Nutrient discharge vs regulations
 - ii. Antibiotics and other chemicals vs vaccination
 - iii. Fish meal vs soya and cell wall proteins
 - iv. Disease vs prevention and biosecurity
 - v. Genetic Impact on wild populations vs containment
 - b. Animal welfare
 - c. Especial issue: *The Integrated Multitrophic Aquaculture model*