FORM FOR SUBMISSION OF MODULE FOR A EUROPEAN JOINT MASTERS

1.	**Module Title:** Geomatics and GIS
2.	**Module Code:**
3.	**Maximum Number of Students:** N/A
4.	**Total ECTS Credits:** 2 ECTS
5.	**Month:** Second year, first or second semester
6.	**Notional Learning Hours (Please fill a number in box)**: **(a) Contact Time - e.g in the classroom, or fieldwork** **(b) Private Study - reading time, preparing and taking assessments** **Format of Teaching:** Lectures 6 Hours (a) Other (computer workshops) 8 Hours (a) Other (tutorials) Hours Other (private study) 36 Hours (b) **Teaching Strategy:** Learning by doing. Theoretical basics are discussed and focused in practical exercises with aquatic pollution real data.
7.	**Convener:** Alfredo Fernández
8.	**Institution:** University of Cadiz
9.	**Level (Please tick Y):** Master
10.	**Language(s) of Tuition**: English
11.	**Pre-requisites**: Basic computer skills and knowledge of coastal dynamics
12.	**Co-requisites:** none
13.	**Programme(s) for which module is core:** Erasmus Mundus Joint Master Degree in Water and Coastal Management (WACOMA)
14.	**Module Description - The Purpose or Aims:** Teach students to analyse the spread of pollutants in marine environment
15.	**Learning Outcomes:** GIS project development applied to marine environment pollution study

16.	**Summary of Course Content:** **Lectures:** Describe use of GIS as a practical tool for modeling marine environment along with data needed in marine environmental investigation, in order to show hydrodynamics of coastal circulation patterns in Cadiz Bay through numerical simulations **Data analysis:** Pollution dynamics in Andalusian fishing grounds
17.	**Key Skills Taught:** Geographical analysis using GIS software (QGIS, ArcGIS)
18.	**Assessment Methods:** Student implication when attending lectures and solving practical exercises
19.	**Assessment Criteria:** A successful candidate should have or be able to do the following: ***Threshold:*** The student actively participated in the lectures, as well as in the analysis of data ***Good:*** The student actively participated in the lectures, as well as in the analysis of data. Moreover, the student was able to reproduce the knowledge he/she had gained from the lectures and reading the basic texts supplied within the course. ***Excellent:*** The student actively participated in the lectures, as well as in the analysis of data. Moreover, the student was able to reproduce the knowledge he/she had gained from the lectures and reading the basic texts supplied within the course, and to critically apply this knowledge to real research questions.
20.	**Resource Implications of Proposal and Proposed Solutions**: ***Lectures:*** Students access to course documentation is provided through Moodle platform and video projector ***Data analysis:*** Practical exercises are developed in computer rooms with computers, licensed software and open source software. Data obtained from official sources are implemented in order to fit teaching purposes ***Books:*** Albrecht, Jochen (2007). Key Concepts and Techniques in GIS. SAGE Publications. Wise, S. (2013). GIS Fundamentals. CRC Press. Kennedy, M.D., Dangermond, J. and Goodchild, M. (2013). Introducing Geographic Information Systems with ArcGIS. Wiley. **Specific Resource Implications for Students**: None
21.	**Does this module replace existing provision? If so, please indicate modules to be replaced:** The module fits in the area of “transferable soft skills”

22.	**Start Date:** Second year, first or second semester
23.	**Is it intended that the module be available every year?** Yes