ACUERDO DE COOPERACIÓN PARA EL DESARROLLO DE UN PROGRAMA DE DOCTORADO INTERNACIONAL EN CIENCIAS DE LA TIERRA Y DEL MAR

entre

La **Universidad de Cádiz,** C/ Paseo Carlos III, nº 9 – 11003, Cádiz, España (en lo sucesivo: UCA), representada por su Rector en funciones, **Prof. Francisco Piniella Corbacho,**

y

La **Universidad de los Estudios de Ferrara**, Via Ludovico Ariosto, 35 - 44121 Ferrara, Italia, (en lo sucesivo: UniFe) representada por su Rectora, **Prof. Laura Ramaciotti,**

en lo sucesivo denominadas las 'Partes' o 'Instituciones Asociadas', siendo cada una individualmente denominada la 'Parte' o la 'Institución',

Donde:

1. Es de interés de ambas Instituciones establecer y desarrollar un Programa de intercambio académico; UniFe y UCA acuerdan que el principal objetivo de este acuerdo es promover procedimientos conjuntos para la obtención del grado de Doctor, así como desarrollar conjuntamente un Programa de Doctorado en Ciencias de la Tierra y del Mar (EMAS), en el marco de sus Programas de estudios de doctorado. Es intención de las Partes asegurar un alto nivel de educación, así como una investigación de alta calidad en el campo de las Ciencias de la Tierra y del Mar.
2. UniFe y UCA acuerdan que la cooperación que gobierne este acuerdo estará alineada con las disposiciones de la Carta Europea del Investigador, así como con la legislación italiana y española.
3. De la parte italiana, esto incluye la siguiente normativa:
   - Artículo 4 de la Ley nº 210 de 3 julio de 1998;

COOPERATION AGREEMENT WITH REGARD TO THE CONDUCT OF AN INTERNATIONAL JOINT DOCTORAL STUDY PROGRAMME IN EARTH AND MARINE SCIENCES

between

The **University of Cadiz,** C/ Paseo Carlos III, nº 9 – 11003, Cadiz (hereinafter called Cadiz University) of Cadiz (Spain), represented by its acting Rector, **Prof. Francisco Piniella Corbacho,**

and

Università degli Studi di Ferrara, Via Ludovico Ariosto, 35 - 44121 Ferrara, Italy, (hereinafter called 'Ferrara University') represented by its Rector, **Prof. Laura Ramaciotti,**

hereinafter called the 'Parties' or 'Partner Institutions', and each individually a 'Party' or an 'Institution',

Whereas:

1. It is in the interests of both the Institutions to establish and develop an academic exchange Programme; Ferrara University and Cadiz University agree that the main objective of this agreement is to manage jointly procedures to award Ph.D. degrees and jointly run a Ph.D. research Programme in Earth and Marine Sciences (EMAS) within their existing doctoral study Programmes. The intent of the Parties is to ensure a high level of education and high-quality academic research in the field of Earth and Marine Sciences.
2. Ferrara University and Cadiz University agree that the cooperation governed by this agreement is in conformity with the provisions of the European Charter for Researchers and the Italian and the Spanish legislation;
3. On the Italian side, this includes the following regulations:
   - Article 4 of Law No. 210 of 3 July 1998;

- Decreto nº 226 del Ministerio de Educación, Instituciones de Educación Superior e Investigación de 14 de diciembre de 2021: Normativas por las que se establecen los procedimientos para la acreditación de escuelas y cursos de doctorado, así como los criterios para el establecimiento de cursos de doctorado por parte de los organismos acreditados.
- Normativas sobre Investigación Doctoral emitido por la Universidad de Ferrara de conformidad con el Decreto del Rector nº 448/2022 Prot. Nº 144017 de 25 de marzo de 2022.

4. De la parte española, esto incluye la siguiente normativa:
   - Real Decreto 822/2021, de 28 de septiembre, por el que se establece la ordenación de las enseñanzas universitarias oficiales. BOE Real Decreto 822/2021 consolidado.
   - Real Decreto 99/2011, de 28 de enero, por el que se regulan las enseñanzas oficiales de doctorado. BOE Real Decreto 99/2011 consolidado.
   - Real Decreto 967/2014, de 21 de noviembre, por el que se establecen los requisitos y el procedimiento para la homologación y declaración de equivalencia a titulación y a nivel académico universitario oficial y para la convalidación de estudios extranjeros de educación superior, y el procedimiento para determinar la correspondencia a los niveles del marco español de cualificaciones para la educación superior de los títulos oficiales de Arquitecto, Ingeniero, Licenciado, Arquitecto Técnico, Ingeniero Técnico y Diplomado.
   - Real Decreto 195/2016, de 13 de mayo, por el que se establecen los requisitos para la expedición del Suplemento Europeo al Título Universitario de Doctor.

- Decree No. 226 of the Ministry of Education, Higher Education Institutions, and Research of 14 December 2021: Regulations laying down the procedures for the accreditation of offices and doctoral courses and criteria for the establishment of doctoral courses by accredited bodies.
- Regulations on Doctoral Research issued by Ferrara University pursuant to the Rector's Decree No. 448/2022 Prot. n. 144017 of 25 March 2022.

4. On the Spanish side, this includes the following regulations:
   - Real Decreto 822/2021, de 28 de septiembre, por el que se establece la ordenación de las enseñanzas universitarias oficiales. BOE Real Decreto 822/2021 consolidado.
   - Real Decreto 99/2011, de 28 de enero, por el que se regulan las enseñanzas oficiales de doctorado. BOE Real Decreto 99/2011 consolidado.
   - Real Decreto 967/2014, de 21 de noviembre, por el que se establecen los requisitos y el procedimiento para la homologación y declaración de equivalencia a titulación y a nivel académico universitario oficial y para la convalidación de estudios extranjeros de educación superior, y el procedimiento para determinar la correspondencia a los niveles del marco español de cualificaciones para la educación superior de los títulos oficiales de Arquitecto, Ingeniero, Licenciado, Arquitecto Técnico, Ingeniero Técnico y Diplomado.
   - Real Decreto 195/2016, de 13 de mayo, por el que se establecen los requisitos para la expedición del Suplemento Europeo al Título Universitario de Doctor.

- Real Decreto 1002/2010, de 5 de agosto, sobre expedición de títulos universitarios oficiales.

En lo sucesivo, las Partes acuerdan lo siguiente en el marco del acuerdo:

Artículo 1 – Objeto del Acuerdo

1. Las Partes acuerdan establecer un marco conjunto de doctorado interuniversitario e internacional, con el objetivo de alcanzar un doble grado de doctor en Ciencias de la Tierra y del Mar (EMAS), que a partir de este momento se denominará el 'Programa', que será desarrollado y realizado por ambas Instituciones Asociadas.
2. El Proyecto de Doctorado y los objetivos del 'Programa', las líneas de investigación, así como su funcionamiento, con mención específica a las actividades de formación e investigación y las estructuras científicas y operativas puestas a disposición por los Socios se detallan en el Anexo.
3. El 'Programa' se habrá de ajustar a la legislación española e italiana, la regulación desarrollada en el marco del Proceso de Bolonia, así como las regulaciones internas de la Universidad de Ferrara y la Universidad de Cádiz.
4. Al 'Programa' se pueden unir otras instituciones Socias, siempre y cuando desarrollen investigación de alta calidad en el campo de las Ciencias de la Tierra y del Mar; su admisión será aprobada por el Comité Conjunto de Coordinación. Las condiciones para esta admisión al Programa deberán ser definidas en acuerdos concretos.

Artículo 2 – Participantes en el Programa

1. El Programa está dirigido a candidatos altamente cualificados, provenientes de países tanto europeos como no europeos, y que reúnan los criterios de admisión establecidos en las regulaciones de ambas Instituciones.
2. Las Universidades de Ferrara y Cádiz serán responsables de la admisión de los estudiantes de

- Real Decreto 1002/2010, de 5 de agosto, sobre expedición de títulos universitarios oficiales.

Now, therefore, the Parties agree as follows, entering into this agreement:

Article 1 – Subject Matter

1. The Parties agree to establish a joint, interuniversity, and international doctoral scheme as a framework to achieve a double PhD degree in Earth and Marine Sciences (EMAS), hereinafter called the 'Programme', to be developed and conducted by both the Partner Institutions.
2. The Doctoral Project and the objectives of the 'Programme', the research topics, and the functioning of the 'Programme' with specific reference to the training and research activities, the operational and scientific structures made available by the Partners are detailed in Annex A.
3. The 'Programme' shall be based on, and developed in accordance with, the requirements of the Spanish and the Italian domestic legislation as well as regulations concerning the Bologna Process and internal rules and procedures in force at Ferrara University and Cadiz University.
4. The 'Programme' may also be joined by other institutions as Partners if they carry out high quality research in the field of Earth and Marine Sciences and are approved by the Joint Coordination Committee. Detailed conditions for new Partners joining the Programme shall be defined in separate agreements.

Article 2 – Programme Participants

1. The Programme is addressed to highly qualified candidates from all the European and non-European nations who meet the admission criteria established by regulations in force at the Partner Institutions.
2. Ferrara University and Cadiz University shall be responsible for the admission of Ph.D. students

doctorado que participen en el Programa, en los términos que se especifican más adelante y acordados por ambas Partes.

3. La selección de los participantes en el Programa se basará en el currículo académico del estudiante, su nivel de idioma y el cumplimiento del resto de requerimientos acordados por las Instituciones Partes.
4. La admisión al Programa quedará restringida a estudiantes que ya estén matriculados en un Programa de doctorado de una de las Instituciones Asociadas. Los candidatos serán admitidos en el Programa atendiendo al Proyecto de Tesis, evaluado por el Comité Conjunto de Coordinación.
5. El Comité Conjunto de Coordinación informará a las Instituciones Partes del número y los nombres de los estudiantes seleccionados en el Programa. Cada Institución matriculará en su Programa de doctorado a todos los estudiantes seleccionados.
6. Las Partes acuerdan no cargar con tasas adicionales de matrícula por la participación en el Programa de doctorado.
7. Las Partes acuerdan la admisión de al menos 5 candidatos en total según los términos del acuerdo. El número y la lista de los candidatos admitidos al Programa serán definidos cada año por el Comité Conjunto de Coordinación, a finales de octubre.
8. En relación a la movilidad del estudiante de doctorado, las Partes acuerdan que el currículo del Programa deberá incluir un mínimo de 9 meses de movilidad internacional, de los cuales al menos 6 deberán realizarse en la otra Institución Parte.

Artículo 3 – Actividades de formación previstas en el Programa en Ciencias de la Tierra y del Mar - EMAS

1. El Programa académico (detallado en el Anexo), incluye la adquisición por parte de los estudiantes, de experiencia científica específica disciplinar e interdisciplinar de alta calidad, con el objetivo de llevar a cabo un proyecto de investigación en una temática del Programa, que finalizará con un

participating in the Programme on terms specified below and agreed by the Parties.

3. The selection of Programme participants shall be based on Ph.D. students' academic records, their language proficiency, and their fulfilment of other requirements set by the home Institution and agreed by the Partner Institutions.
4. Admission to the Programme is restricted to students already enrolled to a national Ph.D. Programme at one of the Partner Institutions. Candidates will be admitted to the Programme on the basis of research proposals evaluated by the Joint Coordination Committee.
5. The Joint Coordination Committee will inform all partners about the number and the names of the students selected for the joint Programme. Each Institution will enrol to the Programme all the students selected.
6. The Parties agree that no additional tuition fee shall be charged for the participation in the Programme.
7. The Parties agree to provide for the admission of at least 5 candidates for the terms of this agreement. The number and the list of candidates admitted to the Programme will be defined from the Joint Coordination Committee every year, within the end of October.
8. With regard to Ph.D. student mobility, the Parties agree that the curriculum of the Programme will include, a minimum of nine months of international mobility, with at least six months of active study and research at each of the Partner Institutions.

Article 3 – Educational activities planned for the Earth and Marine Sciences Programme - EMAS

1. The academic Programme, as detailed in Annex A, includes the acquisition by the students of specific scientific expertise, both disciplinary and inter-disciplinary of high qualification, aimed at developing a research project on specific topic that must result in the writing of a research thesis that

documento de Tesis que contribuya a un avance en el conocimiento o en las metodologías en el ámbito de estudio elegido.

2. Las actividades de formación e investigación, desarrolladas bajo la supervisión de los Directores de Tesis, serán objeto de revisión, al menos una vez al año, por parte del Comité Conjunto de Coordinación, el cual, con un juicio razonado, deliberará sobre la admisión del estudiante en el siguiente año del Programa, así como de la defensa de la Tesis.
3. Tras la evaluación positiva de las actividades de formación e investigación, y su admisión en el siguiente año, cada estudiante deberá matricularse y pagar las tasas correspondientes en su Institución.
4. Con el objetivo de facilitar a los futuros doctores su inserción en el mercado laboral, el doctorando podrá beneficiarse de asistencia de Instituciones Asociadas, agencias públicas de educación e investigación y de empresas, asegurándose que identifican oportunidades de investigación, estancias, patrocinios y ofertas de trabajo. Las Instituciones Asociadas podrán contribuir al desarrollo de actividades específicas, así como definir los temas de Tesis. En caso de que el estudiante de doctorado desarrolle parte de su investigación en una Institución Asociada, ésta deberá aportar un Co-Director de Tesis, indicando su nombre al Director.
5. Los aspectos científicos, de organización y educativos del Programa, son competencia del Comité Conjunto de Coordinación, el cual, con sus reglas internas, de acuerdo con el Art. 1 del presente Acuerdo, definirá el itinerario de actividades a desarrollar durante los tres años de doctorado, el número de horas/créditos a realizar de manera obligatoria, así como los métodos de verificación de las competencias adquiridas, al menos una vez al año.
6. Para poder obtener el grado de Doctor en ambas instituciones, el estudiante deberá realizar al menos 60 créditos (1 crédito = 1 hora) de formación en

contributes to advancement of knowledge or methodologies in the chosen field of the study.

2. The educational and research activity, developed under the guidance of the Supervisors, is annually subjected to at least one review by the Joint Coordination Committee, which, with reasoned judgment, deliberates to admit the PhD student to the following year of the Programme, and to the discussion of the final dissertation.

3. Upon positive evaluation of the annual educational and research activities, and admission to the following year, each doctoral student must register and pay the "annual tuition fees" to his “Home Institution”.
4. To facilitate the integration of the future doctors into the labour market, the doctorate can benefit from the assistance of Associated Partners, public agencies of education and research, and production companies, ensuring that they identify research, internships, sponsorships and work opportunities. The Associated Partners can contribute to the development of the specific activities and to the definition of the topics of the thesis. In case that a PhD student carries out part of its research activities with an associated institution, the latter shall provide to the PhD student a supervisor, indicating his/her name to the Supervisor.
5. The scientific, organizational, and teaching responsibility of the Programme competes at the Joint Coordination Committee, which by its internal rules, in accordance with art. 1 of the Agreement, defines the plan of activities articulated along the three years of the course, the number of hours/credits of compulsory attendance as well as the types and methods of verification, at least once per year, of the acquired preparation.

6. In order to achieve the Doctoral Degree from both Institutions awarding the Doctorate title, the student must acquire at least 60 credits (1 credit =

investigación, debiendo producir artículos científicos, asistir a cursos, estancias, congresos, talleres, etc.; de ellos, al menos 200 horas (20 créditos) tendrán que realizarse en cursos específicos ofertados por UCA, UNIFE y/o otras Instituciones Asociadas. Los cursos deberán ser elegidos de común acuerdo con el Director de Tesis, con el objetivo de adquirir una formación adecuada por parte del estudiante de doctorado. El Comité Conjunto de Coordinación evaluará y reconocerá las horas de cada actividad de formación. Una vez que el Comité Conjunto de Coordinación evalúe las actividades y que se produzca el reconocimiento oficial de las actividades, así como las posibles lagunas formativas a cubrir para que se pueda proceder a la presentación final de la Tesis, se iniciará el procedimiento previsto por cada Institución Parte.

7. Además, para la admisión en el procedimiento de depósito y defensa de la Tesis, el estudiante deberá haber publicado dentro de los tres años del programa (o en su defecto, presentar la aceptación de publicación) al menos un artículo en una revista de reconocido prestigio internacional de alto impacto (lista SCI). El contenido del artículo deberá estar relacionado con la investigación desarrollada en el marco de su proyecto de Tesis y deberá ser el primer autor o segundo si su Director es primer autor. El Comité Conjunto de Coordinación evaluará el número de horas por las que se podrá convalidar cada artículo publicado y las reconocerá oficialmente.

Artículo 4 – Preparación y Defensa de la Tesis Doctoral

1. Los candidatos deberán depositar la Tesis Doctoral al finalizar el tercer año de su participación en el Programa. En situaciones excepcionales, el Comité Conjunto de Coordinación podrá extender la fecha de depósito hasta un máximo de un año.
2. El Tribunal de Tesis estará compuesto por dos Doctores de ambas Instituciones y al menos uno (UCA) / dos (UNIFE) Doctores ajenos a las

10 hours) of formation to research by producing research papers and attendance to courses, stages, congress, workshop, etc.; among these, a minimum of hours (20 credits) should be acquired in specific courses proposed by UCA, UNIFE and/or other associated institutions. The courses would be chosen upon advice of the Supervisor with the aim to achieve and adequate formation to the PhD student. The Joint Coordination Committee will evaluate and recognize the number of hours to be associated to each course and activity. Once the evaluation of the Joint Coordination Committee be available, the official recognition of the activities as well as the formative gap to be filled to proceed to the final presentation of the thesis, the procedure in force in each Partner Universities of the Consortium will be formalized.

7. Moreover, for the admittance to the final examination, within the three years of the course the PhD student should present at least an original research paper, published or accepted for printing by an international, high impact journal (included in the SCI list or in other internationally reckoned scientific journal list). The work must derive from his/her doctorate study. The Ph.D. student must be first author or second if the supervisor is first. The Joint Coordination Committee will evaluate the number of hours that can be associated with each paper and will officially recognize them.

Article 4 – Preparation and Defence of the Ph.D. thesis

1. The candidates should submit their Ph.D. theses no later than at the end of the third year of their participation in the Programme. In exceptional situations the Joint Coordination Committee may extend the deadline by no more than one year.
2. The Joint Examination Committee shall consist of two eligible Pd.D. academics from both Partner Institutions plus at least one (Cadiz) / two (Unife)

Instituciones, de acuerdo a las regulaciones nacionales de ambas Instituciones Socias.

3. La Institución donde la Tesis Doctoral sea defendida tendrá que disponer de todos los medios técnicos que permitan la participación por videoconferencia de Doctores de la otra Institución como miembros del Tribunal de Tesis.
4. La Tesis Doctoral se realizará bajo la supervisión de un Director de Tesis y un co-director. El Director tendrá que pertenecer a la Institución que seleccionó al estudiante de doctorado, mientras que el co-director será nombrado por la otra Institución Parte. Director y co-director desarrollarán el plan de investigación y de estudio del estudiante de doctorado, de acuerdo a las regulaciones nacionales de ambas Instituciones Partes.

5. La Tesis Doctoral tendrá que escribirse y defenderse en inglés y tendrá que incluir un resumen en italiano y/o en español.
6. La Tesis Doctoral se someterá a evaluación previa a la defensa por al menos dos revisores externos a las Instituciones Socias, de acuerdo a las regulaciones nacionales en ambas Instituciones Socias.
7. Las Partes acuerdan otorgar un doble Grado de Doctor: Doctor en “Earth and Marine Sciences” (UNIFE) y Doctor en “Ciencias y Tecnologías Marinas” (UCA) a aquellos candidatos que completen el Programa y aprueben la defensa de la Tesis Doctoral.
8. Cada Institución Parte otorgará un título de Doctor firmado por el representante legal de cada Institución, de acuerdo a las regulaciones nacionales de ambas Instituciones.
9. Las Instituciones Partes expedirán conjuntamente el Suplemento Europeo al Título (SET), el cual contendrá el currículo detallado del estudiante desarrollado durante su Doctorado. Las partes podrán concretar algunos contenidos del SET que serán objeto de un convenio separado.

Ph.D. academics outside both institutions, in accordance with the national regulations in force at both Partner Institutions.

3. The Institution where the Ph.D. thesis is defended may set up a videoconference to allow academics from the other Institution to participate as members of the Joint Examination Committee in the defence.
4. The Ph.D. thesis shall be prepared under the direction of the supervisor and the co-supervisor. The supervisor shall be a researcher from the Institution that recruited the Ph.D. student, whereas the co-supervisor shall be appointed by the other Partner Institution. The supervisor and the co-supervisor shall jointly develop the research plan and the study curriculum for the Ph.D. student, in line with the applicable regulations in the Partner Institution countries.
5. The Ph.D. thesis shall be written and defended in English and accompanied by a summary in Italian and/or in Spanish.
6. The Ph.D. thesis shall be evaluated by at least two reviewers external to the Partner Institutions, in accordance with the rules and criteria in force in the Partner Institution countries.

7. The Parties agree to grant a double PhD degree: Doctor in “Earth and Marine Sciences” from Unife and Doctor in “Ciencias y Tecnologías Marinas” from Cadiz, to the candidate who completes the Programme and successfully defends the Ph.D. thesis.
8. Each Partner Institution shall issue its own Ph.D. diploma signed by the legal representative of that Institution, in accordance with national regulations.

9. The Partner Institutions shall jointly issue the European diploma supplement personal certificate containing a detailed curriculum of the student as developed during the Ph.D. course. The form of the certificate shall be defined in a separate agreement.

Artículo 5 – Obligaciones de las Partes y Gestión del Programa

1. Las Partes serán responsables de la coordinación y gestión del Programa. Se consultarán entre ellas cada vez que lo consideren oportuno, para garantizar la calidad del Programa y para resolver cualquier dificultad que aparezca durante el desarrollo del Programa.

2. Cada Parte deberá:
   a. Seleccionar a los candidatos del Programa.
   b. Mantener los registros del Programa.
   c. Supervisar el correcto funcionamiento del Programa;
   d. Asegurar una alta cualificación de los miembros de la Comisión Académica Conjunta;
   e. Proporcionar aulas, laboratorios y espacios de trabajo a los estudiantes de Doctorado, según se requiera durante el desarrollo del Programa;
   f. Incluir información sobre el Programa en su página web y en el material promocional de la Institución;
   g. Asegurar que los estudiantes de Doctorado tengan acceso a las instalaciones, material de biblioteca y bases de datos, en los términos que establezca cada Institución;
   h. Designar Socios del Programa;
3. Las Partes deberán crear un Comité Conjunto de Coordinación compuesto por al menos dos miembros de cada Institución, designados por cada Institución Socia, que deberá actuar de manera coordinada con las Escuelas de Doctorado de ambas Instituciones. Un miembro tendrá el papel de presidente, mientras que el Segundo actuará como secretario.
4. Las decisiones deberán ser tomadas conjuntamente por los representantes de las Instituciones en el Comité Conjunto de Coordinación. A las reuniones del Comité podrán asistir otros académicos invitados, así como

Article 5 – Duties of the Parties and Programme Management

1. The Parties will be responsible for the overall coordination and management of the Programme. They will consult each other whenever they deem it appropriate to guarantee the quality of the Programme and in order to resolve any difficulties connected with the appropriate conduct of the Programme.
2. Each of the Parties shall:
   a. Carry out recruitment for the Programme.
   b. Keep the required Programme records.
   c. Supervise the appropriate conduct of the Programme;
   d. Ensure that highly qualified academic staff is admitted in the Ph.D. board;
   e. Provide teaching rooms, equipped laboratories and working spaces for the Ph.D. candidates as required for the conduct of the Programme;
   f. Include information about the Programme on its website and in the promotional materials of the Institution;
   g. Ensure that the Ph.D. students have access to the facilities, library collections, and databases on the terms in effect at the Institution;
   h. Appoint Programme Partners;
3. The Parties shall establish a Joint Coordination Committee composed of at least two academics representing each Institution, appointed by each Partner Institution, who shall act in consultation with the Doctoral Schools of both the Partner Institutions. One academic will have the role of officially representing the institution while the second one may act as secretary.
4. Decisions shall be jointly taken by the representatives of the Parties on the Joint Coordination Committee. Meetings of the Committee may also be attended by other invited academics or administrative personnel of the

personal de administración de las Instituciones. El Comité Conjunto de Coordinación tendrá que reunirse al menos dos veces al año. Las reuniones podrán realizarse telemáticamente.

Artículo 6 – Fondos

1. Cada una de las Partes deberá tomar las medidas necesarias para obtener la mejor financiación posible para el intercambio de los estudiantes.

Artículo 7 – Promoción del Programa y uso del Nombre/Logo

1. Cada Parte acuerda que su logo, escudo y nombre podrán ser utilizados para la promoción del Programa, de acuerdo con sus respectivas legislaciones sobre derechos de propiedad.

2. Ambas partes acuerdan promocionar el Programa en sus catálogos, páginas webs y a través de cualquier otro medio de promoción.

Artículo 8 – Derechos de Propiedad Intelectual

1. Cada Parte acuerda y reconoce que todos y cada uno de los derechos de propiedad intelectual o cualquier otro derecho de propiedad respecto a la producción científica, materiales, métodos de investigación o enseñanza, procedimientos, procesos, y/o experiencias de aprendizaje en relación a o en conexión con el Programa y cualquiera de sus partes, será y deberá permanecer como propiedad única de su titular, y salvo lo expresamente establecido en este documento, nada en este acuerdo tiene como objetivo transferir la propiedad o crear derechos de licencia bajo derechos de propiedad intelectual u otros derechos de propiedad.
2. Los materiales de aprendizaje, producción científica, materiales, métodos de investigación procedimientos, procesos o programas en los que una Parte tenga derechos de propiedad intelectual y que se divulguen con la otra Parte de conformidad con este acuerdo, podrán ser usados por la otra Parte con el único objetivo de cumplir

Institutions. The Joint Coordination Committee shall as a rule meet twice a year. Its meetings can also take place using means of electronic communication.

Article 6 – Funding

1. Each of the Parties hereto shall take necessary action in order to obtain the best possible financial support for the exchange students.

Article 7 – Programme Promotion and Name/Logo Use

1. Each of the Parties hereto agrees that its logo, coat of arms, and name can be used for the promotion of the Programme in compliance with the national legislation on intellectual property rights in both countries.
2. Both Parties agree to promote the Programme in their catalogues, on their websites, and through other appropriate ways.

Article 8 – Intellectual Property Rights

1. Each of the Parties acknowledges and agrees that any and all the intellectual property rights or other proprietary rights in respect of any literature, materials, research, or teaching methods, procedures, processes, and/or the learning experience in relation to or in connection with the Programme and any parts thereof are and shall remain the sole property of its owner and, save as expressly set out herein, nothing in this agreement is intended to transfer ownership or create any licensed rights under any such intellectual property rights or other proprietary rights.

2. The learning materials and any other literature, materials, research methods, procedures, processes, or programmes in which a Party has intellectual property rights relating to or in connection with the Programme and which are disclosed to the other Party pursuant to this agreement may be used by the other Party solely

con sus obligaciones en el marco del acuerdo y durante su duración, y sin ningún otro fin, y de conformidad con la legislación nacional sobre derechos de propiedad intelectual vigente en cada país.

3. En la Universidad de Cádiz, los derechos de propiedad intelectual serán protegidos de acuerdo a la legislación española, así como de las regulaciones de carácter interno de la propia Institución.
4. En la Universidad de Ferrara, los derechos de propiedad intelectual serán protegidos de acuerdo a la legislación italiana, así como de las regulaciones de carácter interno de la propia Institución.

Artículo 9 – Sistema de Garantía de Calidad

Las Instituciones cooperarán para establecer un procedimiento integral que asegure la buena calidad del Programa conjunto. Los procedimientos y guías sobre la calidad del Programa Europeo de Educación Superior deberán ser aplicados.

Artículo 10 – Disputas

1. En lo no previsto por este acuerdo se aplicará la legislación vigente en cada país, en particular en lo relativo a los estudios de doctorado.

2. Las Partes se comprometen a resolver de buena voluntad cualquier disputa que surja en virtud de este acuerdo.

Artículo 11 – Términos y Duración de este Acuerdo

1. Este acuerdo entrará en vigor en la fecha de firma y deberá estar en vigor durante un período de tres años y podrá ser revisado o renovado (hasta un máximo de tres años adicionales) por acuerdo mutuo de las Partes. En ausencia de renovación, el acuerdo perderá su vigencia.
2. Cada Parte puede cancelar este acuerdo mediante comunicación escrita a la otra Parte, con al menos 180 días de antelación. En tal caso, se

for the purposes of performing its obligations under, and during the period of, this agreement and for no other purpose, and in compliance with national legislation on intellectual property rights in force in either country.

3. Within Cadiz University, intellectual property shall be protected in accordance with the Spanish legislation and the Institution's internal regulations.

4. Within Ferrara University, intellectual property shall be protected in accordance with the Italian legislation and the Institution's internal regulations.

Article 9 – Quality Assurance

The Institutions shall cooperate in order to set an integrated approach to assure a high quality of the joint Programme. European Higher Education Area quality assurance standards and guidelines shall be applied.

Article 10 – Disputes

1. Matters not regulated in this agreement shall be governed by the laws in force in the respective countries, in particular with regard to each Party's internal regulations concerning doctoral studies.
2. The Parties undertake to resolve any dispute arising under this agreement amicably.

Article 11 – Terms and Duration of this Agreement

1. This agreement shall come into force as of the date of its signature and shall remain in force for a period of three years and may be revised or renewed by mutual consent of the Parties in the form of an amendment hereto, otherwise being null and void.
2. Either Party may cancel this agreement by written notice to the other Party given at least 180 days in advance. However, Ph.D. students who are

respetará el derecho de los doctorandos inscritos en el programa a su finalización.

3. Este acuerdo se ha escrito en inglés y español. Se imprimirán cuatro copias que serán firmadas; cada Parte se quedará con dos copias.

already enrolled in the Programme shall have the right to complete it in accordance with the provisions hereof.

3. This agreement was written in English. Four copies will be printed and signed; two copies for each Party to be stored.

Cádiz (España), fecha de firma digital

31223745A FRANCISCO PINIELLA (R: Q1132001G)
Firmado digitalmente por 31223745A FRANCISCO PINIELLA (R: Q1132001G)
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Prof. Dr. Francisco Piniella Corbacho
Rector Magnífico de la Universidad de Cádiz

Ferrara (Italy), date

Signature Not Verified
Firmato digitalmente da Laura Ramaciotti
Data: 01.07.2024 10:12:11 CEST
Organizzazione: UNIVERSITA' DEGLI STUDI DI FERRARA/00434690384

Prof. Laura Ramaciotti
President of the Ferrara University

ANEXO

Doctoral Project and objectives of the Programme

The EMAS Programme is aiming at providing high qualified scientific competences in Earth and Marine Science: mineralogy, petrology, geochemistry, palaeontology, stratigraphy and sedimentology, structural geology, applied geology and hydrogeology, geomorphology, physical oceanography, coastal dynamics, marine geology, economic geology and geophysics. These disciplines will also constitute integrative knowledge for Science and Technology for the Nature and Environment, Chemistry, Physics, Technology for Preservation and Restoring of Cultural Heritage, Engineering, Architecture and Agronomy.

The research topics of the EMAS Programme will be mainly addressed to a number of topics: mineral crystallochemistry, Earth's mantle petrology, magma genesis and related volcano-plutonic complexes, environmental geochemistry, stratigraphy and its applications to hydrocarbon and aquifers geology, the palaeobiology of marine ecosystems in relation to climatic and paleogeographic changes, rock mechanics and tectonic deformations; earthquake geology, slope stability, river and coastal dynamics, geophysical methods applied to evaluation of seismic site effects, physical oceanography and marine geology.

All these topics are also aimed at evaluating the natural and anthropogenically induced hazards (e.g., landslides, floods, coastal erosion, earthquakes, volcanic eruptions, tsunamis, climate change and environmental emergencies). The EMAS Programme provides a well-defined cultural background in the above topics that nowadays are relevant for both basic and applied research.

Research topics

https://www.unife.it/studenti/dottorato/it/corsi/riforma/earth

1. Applied Geology and Geomorphology. The research line "Applied Geology and Geomorphology" is addressed to improve the knowledge of the dynamic phenomena occurring on the Earth' surface due to climatic changes, at global and local scale, and to the effects of the progressive, heavy, anthropogenic activities. Correlated researches include analysis of slope stability, hydrogeological models, fluvial dynamics and climate forecasting in order to provide a better planning and management of the use of the territory, reducing the impact and the risk levels. The used tools are geological and geomorphological fieldwork and mapping, interpretation of aerial photos and satellite images, geographic information systems (GIS), field experimental activities, numerical modeling and laboratory analyses.

2. Coastal dynamics and management. This line covers those geological and oceanographical aspects most directly applied to the coastal processes and their consequences to the human activity. It includes fields such as the recent evolution and present trends of the coastline, coastal erosion processes and natural hazards on the coast,

quantification and modelling of coastal erosion, transport and sedimentation processes, due to wave and wind action, environmental mapping of littoral zones, coastal defense works, coastal pollution modelling, and in general, coastal planning and risk and impact assessment of a wide range of human activities in the coastal zone, such as tourism, offshore drilling, offshore aquaculture, etc. An outstanding aspect of this line is that related to the analysis of socio-political strategies for a correct coastal management, by combining data from littoral dynamics with the activities and aims of the social agents responsible for the use of coastal resources. A further aspect is the reconstruction of past historical storminess and the prediction of future scenarios induced by climate change. Coastal dynamics also plays a key role for the conservation and management of the underwater cultural heritage.

3. Environmental geochemistry. This thematic will use the most innovative and technologically advanced techniques for the analyses of major, trace elements and isotopes in rocks, sediments, soils, water and air to be used as indicators of environmental changes. This research line provide a robust, knowledge to evaluate the impact on the environment caused by human activities, such as organic and inorganic civil, industrial, agricultural and zootechnical wastes for detecting and studying the properties of pollutants in marine and continental environment. Through a detailed analysis of soils and water, it also furnishes a tool to trace the provenance of plants and food, providing an useful tool against the mystification of highly renewed aliments. It develops innovative studies i) on the answer of the plants at different chemical composition of the soil; ii) to the effects of natural and anthropogenic GHG (Green House Gases) emission on climate and their outcomes on hazards of natural phenomena; iii) the study of metal pollution and distribution in soils and sediments, also in relation to abandoned and active mining areas; iv) geochemical prospecting for the exploitation of mineral raw materials and for the production of thematic maps; v) geochemical study of air particulate and fluid emissions and vi) geochemical study for the identification of the geoterritoriality and for preservation of brand products.

4. Geodesy and Geophysics. This line includes the application of geodetic and geophysical techniques to the study of the global marine environment and dynamics: high resolution models for the definition of the geoid, sea level determination through the use of remote sensing techniques, remote assessment of polar zones, etc. More specific lines are the geophysical analysis and modelling of marine and continental natural hazards, especially in the case of active volcanism: geothermometry, geomagnetism, high resolution seismics, gravimetry, modelling of active tectonic and volcanic processes.

5. Marine Geology, Stratigraphy and Sedimentology. This research line includes different geological aspects related to the modern marine environments and its fossil counterparts, with a main emphasis on sedimentology, stratigraphy, geodynamics and geological structures. It covers fields like the structure of continental margins and their tectonic and sedimentary evolution during the Mesozoic, Cainozoic, and with special attention to Quaternary times. The research mainly refers to the evolution of Mesozoic and Cenozoic carbonate platforms in circum Mediterranean area: Triassic of Dolomites; Jurassic, Cretaceous and Tertiary in northern and southern Italy, Spain and Caribbean area; Tertiary of south Alpine and Salento.

Other stratigraphic studies include the Mesozoic depositional successions of North and East Africa. Recently, new research line are activated on the fluvio-deltaic and alluvional plain successions of the Po Plain and Adriatic area. This line is based on the use of different sources of data: bathymetric surveys using single beam, multibeam and side scan sonar (bathymetry, seabed nature and features), geophysics (seismic profiling) and drilling, through the combination of which valuable information is obtained about the structure of the marine substratum and about palaeoceanographic processes which acted in the recent past and are currently acting on the sea-bed. In more shallow zones diving and sediment sampling is also used, together with other techniques which give data on the present processes acting on the sea floor. This line also includes several applied aspects like the identification of hydrocarbon indicators in continental margins, recent and present tectonic and volcanic activity in marine environments, or the recognition and mapping of seabed and benthic geohabitats of European interest, as well as the safety of offshore structures (oil rigs and pipelines).

6. Mineralogy and Crystal chemistry. This research line covers the applications of modern mineralogy and mineral crystallography to both fundamental and applied studies. Among these studies, the crystallochemical investigation of rock-forming minerals has many important petrological and geophysical implications. Crystal-structure analysis at non-ambient conditions provides a window to the Earth interiors and processes. Applied mineralogy topics include: i) the investigation of a wide range of geomaterials and their likes (asbestos, ceramics, geopolymers, cements, matrices for nuclear waste, materials for energy efficiency of buildings, etc); ii) the development of microporous materials, based on minerals and their synthetic analogs, for energy harvesting and storage, and for treatment and recovery of water resources; iii) the conservation studies of cultural and environmental heritage; iv) the study of processes involved in industrial production (e.g. in heterogeneous catalysis); v) the characterization of gems and similar materials. It also covers the analysis of specific mineralogical species as palaeoenvironmental indicators in recent, Quaternary and historical sedimentary records, mainly in lacustrine and marine sequences, where sedimentary continuity is usually higher and mineralogical processes occurring inside these water bodies are sensitive to climatic changes and/or to human interventions in the basins connected to them. This line also includes the interest of some minerals as technological basis for the carbon capture and storage and their role in the possible mitigation of the present global warming.

7. Paleontology and Paleoecology. This research line is addressed to develop studies on the knowledge of the evolution of Phanerozoic marine ecosystems by analysing the biodiversity of the palaeocommunities and their relationships with the global climate and geographic changes. Research themes focus on global events during the end-Permian mass extinction, the most severe extinction in the Phanerozoic, which changed the evolutionary trajectories of many marine invertebrates, and on the Triassic biotic recovery. The analysed taxonomic groups are mainly molluscs and brachiopods. Another research theme regards the adaptive radiations of larger bivalves characterised by unusual shells, which represent secondary adaptation to soft substrates. This research aims to assess the functional, microstructural and synecological aspects of these larger bivalves and related benthic

communities. The Cretaceous and Cenozoic are time intervals extremely dynamic as far as evolutionary and climatic global changes are concerned with several extreme warming greenhouse episodes. The research on taxonomic and abundance changes in planktonic foraminiferal assemblages, which have an important role in carbonate production along with geochemical analyses, aims to reconstruct the palaeoceanographic changes during the main climatic variations and to assess the possible influence to the evolution. The palaeoenvironmental analysis of Cenozoic carbonate and mixed siliciclastic-carbonate sedimentary successions aims to provide palaeoecological modelizations of larger foraminiferal and calcareous algal assemblages. These studies regard taxonomy of the dominant benthic components, related ichnocoenoses and palaeobiogeography. In order to decipher the complex benthic assemblages and related environmental constrains, present-day coralline red algal communities.

8. Petrology and applied petrography. Thanks to the use of the most innovative an technologically advanced instruments for the whole rock and in situ analyses of elements and isotopes, this research line is dedicated to develop basic and applied studies on: a) magma genesis and evolution also in relation to volcanism and volcanic hazard; b) Earth mantle petrological, geochemical and geophysical characteristics; c) magma sources and petrological processes related to the various geodynamic environments; d) Classification and description of the main georesources (ore mining , metals, ornamental stones, ceramic products, industrial minerals, etc…), and their physico-chemical characterizations; e) petrographic and geochemical characterization of geological material of industrial interest; f) Petroarcheometry addressed to the historical and preservative study of lithoid materials and stones and degradation assessments; g) ore deposits and their origin, environmental impact of resource exploitation and use, ore and industrial minerals.

9. Tectonics and Geophysics. This thematic develops either basic and applied research focusing on both past and mainly present crustal stress fields and the associated deformation structures and tectonic features. Investigations are primarily based on field work and laboratory activities applying several geophysical methods (seismic, electric, electromagnetic, gravimetric), as well as modelling. Among the principal research topics are i) the study of different seismogenic sources and their seismotectonic characterization, ii) 3D reconstructions, carried out according to the needs and the specific goals, from the meters to the kilometers scale, iii) the characterization of the subsoil physical parameters for site effects estimation and ground water quality evaluation, iv) unravelling the temporal evolution of the stress and strain fields in crustal volumes, v) evaluation of the seismic hazard for risk mitigation. This line of research will mainly use a multidisciplinary approach based on, among others, morphotectonics, palaeoseismology, several applied geophysics techniques, remote sensing, geological and structural mapping.

10. Physical oceanography of coastal waters. Physics, dynamics and their impact on biogeochemistry of bays, estuaries, straits and shelf zone. Those are areas with steep gradients of ocean variables and characterized for complex processes of meso-, submeso- or smaller scales. Fronts, filaments, eddies are important structures shaping the coastal ocean.

Coastal currents of different origin, tides and internal waves, interactions with topography, gravity flows, upwelling/downwelling, estuarine processes, long-wave dynamics (storm-surges, tsunami), sea-breeze circulation or wind-waves are ubiquitous phenomena to be addressed using targeted theoretical approaches, observational campaigns, numerical models or satellite data.

11. Ocean circulation and climate. Focuses on the large-scale ocean dynamics and its impact on the Earth climate. The Meridional Overturning Circulation (MOC) acts as a major regulator of climate by transporting heat, carbon, and other properties through the World Ocean and by interacting with the atmosphere, cryosphere and lithosphere. Wind-driven upper circulation and deep ocean circulation are the two major components of MOC. On the smaller scale, processes such as mixing, tides, upwellings, convection, mesoscale and submesoscale eddies contribute to the large-scale pattern of ocean properties and dynamics through scale-interactions and also to shape the water masses distribution. To better understand the role of Oceans in global climate there is a need for enhanced observations, and proper representation of ocean circulation in coupled models on several spatial and temporal scales.

12. Operational oceanography. Operational Oceanography provides an accurate as possible description of the state of the oceans including its living resources, providing continuous forecasts of the future conditions of the oceans, and assembling data sets that can provide data for descriptions of past states. This requires systematic and long-term routine measurements of the oceans, both from in situ observations and satellite data, and numerical modelling to contribute to deliver essential services and products in real time, related to coastal hazards, pollution, marine food, marine trade and navigations, natural resources and energy. Improvements on observing systems, including leading edge observing platforms, numerical models, data assimilation and analysis techniques, ocean-state indicators or products and services constitute the focus of this cross-cutting research line.

13. Satellite oceanography. Remote sensing datasets play an important role in the oceanography research. Satellite information is crucial to the study of the physics and biology of the ocean, in the context of ocean circulation and climate. Active/passive sensors are used together with in-situ instrumentation. An important aspect is related to the validation of the satellite data using in-situ ground-truth information. Special attention is made to the coastal zones, where open ocean and inland waters meet.

Training and research activities

Operational and scientific structures made available by the Partners

Laboratories of: Spectrometry, Micropaleontology, Microscopy, Cartography and GIS, Wet Chemistry, Photogeology, Applied Geochemistry, Geophysics and Tectonics, Hydrogeology, Geomorphology, Paleontology, Sedimentology, Thin Sections, Diffraction and Fluorescence RX, Ionochromatography, Thermogravimetry, Fluid Inclusions, Spectrometry and Plasma Mass. Archaeometry, Physics of the Atmosphere, Radioactivity, Oceanographic Sensors,

Geodesy. Oceanographic vessel UCADIZ, single seat bathyscaphe, several professional UAVs for airborne and marine surveys.

Libraries: Potentially all of the University's library assets are of interest for the topics of the Course. The number of scientific journals that are related to the topics developed in the EMAS doctorate exceeds 20,000 units. All this heritage is easily accessible online by PhD students via their laptop or the one available in their room.

E-sources: The number of scientific journals that are related to the topics developed in the EMAS doctorate exceeds 20,000 units. All this heritage is easily accessible online by PhD students via their laptop or the one available in their room. Specific software for the analysis of oceanographic and geographical (GIS), seismic and bathymetric data for the morphodynamic modeling of the coasts.

Multiple programs both for 3D geological cartography and for the modeling of the surface and deep processes of the Earth. This software is continuously updated and used by the teachers of the college, and made available to the doctoral students.

The University computing and networks service manages computing resources and the updating of operating and application systems; assists users in installing and configuring hardware and software; takes care of the user and equipment registry. At least ten computer rooms are available between the two universities for a capacity of more than 150 students.

Each doctoral student is assigned a study for two people in the department, equipped with computer workstations and network connection, including wireless.