

## Coimbra Group Seminar

### *Innovation in Learning and Teaching in Science, Technology, Engineering and Mathematics (STEM) fields*

**Granada, 14 November 2019**

**Salón de Grados, School of Architecture, Campo del Príncipe, Granada**

#### Objectives

- To share good practices in institutional management and support services for innovation in learning and teaching
- To share useful and sustainable teaching and training experience implemented at Coimbra Group universities
- To promote the development of innovative ideas and good practices in learning and teaching in the field of STEM
- To establish new approaches and action lines for teaching and learning in Higher Education the new European scenarios of Erasmus, Horizon Europe and the Agenda 2030

#### Participants

The seminar is open to the entire academic communities (students and staff) of all Coimbra Group Universities. It will be particularly useful for:

- Institutional coordinators and support officers for services related to innovation in learning and teaching and
- Teachers who are looking for or would like to share innovation in teaching and learning in STEM fields.

#### Programme

| Thursday, 14 October 2019 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| 09:00                     | Registration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 09:15                     | <b>Opening and welcome</b><br><b>Inmaculada Ramos Tapia</b><br><i>Director General of Universities. Regional Government of Andalusia</i><br><b>Dorothy Kelly</b><br><i>Vice-Rector for Internationalization. University of Granada</i><br><b>M<sup>a</sup> Teresa Pozo Llorente</b><br><i>Director for Quality, Teaching Innovation and Planning. University of Granada</i><br><b>José María Manzano Jurado</b><br><i>Director of the School of Architecture. University of Granada</i><br><b>Giulia Licini</b><br><i>Chair of the STEM Working Group of the Coimbra Group of Universities. University of Padua</i> |
| 10:15                     | Keynote lectures: Innovation in Learning and Teaching. Challenges and developments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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|       | <p><b>Women in STEM: Why so few in Higher Education?</b><br/> <b>Nuria Rico Castro</b>, Department of Statistics and Operational Research, <i>University of Granada</i></p> <p><b>Innovative Teaching Approaches to attract, engage, and maintain women in STEM: W-STEM project</b><br/> <b>Francisco José García-Peñalvo</b>, <i>Department of Computer Science and Automation, University of Salamanca</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 11:15 | Coffee Break with poster exhibition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 11:45 | <p><b>Round Table: Institutions of Higher Education as generators of innovation and good practices in learning and teaching: Organization of services for their development and support</b></p> <p><b>Jorge Expósito López</b><br/> <i>Director for Training, Innovation, and Teaching Staff Assessment. University of Granada</i></p> <p><b>Giulia Licini</b><br/> <i>Department of Chemical Sciences. University of Padua</i></p> <p><b>Francisco José García-Peñalvo</b><br/> <i>Department of Computer Science and Automation. University of Salamanca</i></p> <p><b>Krisztina Lénárt</b><br/> <i>Head of the Education Development and Talent Support Department, Eötvös Loránd University, Budapest</i></p> <p><b>Dorota Malec</b><br/> <i>Vice-Rector for University Development. Jagiellonian University. Cracow</i></p> <p><b>Jean-François Rees</b><br/> <i>President of the School of Biology, Université catholique de Louvain</i></p>                                                                                                                                                                  |
| 13:00 | Lunch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 14:00 | <p><b>Guided tour to the School of Architecture</b><br/> <b>Ricardo Hernández Soriano</b><br/> <i>Director for Built Heritage. University of Granada</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 15:15 | <p><b>Showcasing experiences in innovation and good practices in learning and teaching in STEM fields</b></p> <p><b>Short communications (10 min)</b></p> <p><b>[1] Combining Select-and-Fill-In Concept Maps and Peer Instruction in a New Evaluation Tool for Large Groups of Learners</b><br/> <b>Manuela Guisset, Guillaume Lobet and Jean-François Rees</b><br/> <i>Faculty of Sciences / Bioengineering &amp; Louvain Learning Lab, Université catholique de Louvain, Belgium</i></p> <p><b>[2] Students in the Process of Exam Quizzes Building</b><br/> <b>Jacek Urbaniec</b><br/> <i>Head of the eLearning Centre, Jagiellonian University, Cracow</i></p> <p><b>[3] Teaching4Learning: Promoting Innovative Teaching in Italian Higher Education. The case of University of Padua.</b><br/> <b>Concetta Tino</b><br/> <i>Department of Philosophy, Sociology, Pedagogy and Applied Psychology (FISPPA), University of Padua</i></p> <p><b>[4] Active learning and teaching methods in Science lectures</b><br/> <b>Vidita Urbonienė</b><br/> <i>Institute of Chemical Physics. Vilnius University</i></p> |

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|              | <p><b>[5] Wandering micro:bits in the public education of Hungary</b><br/> Andor Abonyi-Tóth<br/> Faculty of Informatics, Eötvös Loránd University, Budapest</p> <p><b>Flash Presentations (5 min)</b></p> <p><b>[1] SPOCs: An Outstanding E-Learning Tool</b><br/> Alicia Domínguez-Martín<br/> Department of Inorganic Chemistry. University of Granada</p> <p><b>[2] Design and elaboration of didactic resources for teaching and learning of Mathematics in Primary Education</b><br/> Esperanza López Centella<br/> Department of Didactics of Mathematics. University of Granada</p> <p><b>[3] An interdisciplinary participatory research as a teaching-learning strategy in the Bachelor of Medicine. Cohort study of lung development in students of Medicine</b><br/> Pedro Romero Palacios<br/> Department of Medicine. University of Granada</p> <p><b>[4] Interactive teaching in the Analytical Chemistry laboratory using QR codes</b><br/> Miguel Erenas Rodríguez<br/> Department of Analytical Chemistry. University of Granada</p> <p><b>[5] Accessing to statistics learning without limitations: A virtual self-learning environment for statistics</b><br/> Ana María Lara Porras<br/> Department of Statistics and Operational Research. University of Granada</p> <p><b>[6] The "Horizontal Metaphor" methodology as a tool for captivating architects into structural analysis</b><br/> Fernando Gómez Martínez<br/> Department of Structural Mechanics and Hydraulic Engineering. University of Granada</p> <p><b>[7] Teaching transmission line innovation: An experience in the field of Electrical Engineering</b><br/> Jesús Francisco Fornieles Callejón<br/> Department of Electromagnetism and Physics of Matter. University of Granada</p> <p><b>[8] An online repository for hands-on experiments for Experimental Physics classes</b><br/> Artur Schmitt<br/> Department of Applied Physics. University of Granada</p> <p><b>[9] Student-guided visits to the School of Architecture of the University of Granada: A new tool for active learning</b><br/> Delfi Bastos González<br/> Department of Applied Physics. University of Granada</p> <p><b>Questions and feedback</b></p> |
| <b>17:00</b> | <p><b>Poster exhibition (with coffee)</b><br/> The authors will be able for questions and further information.</p> <p><b>[1] Web-based writing system "Multilingual Scientific Essay"</b><br/> Rosario Arroyo González<br/> Department of Didactics and School Organization. University of Granada</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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|  | <p><b>[2] An interactive laboratory for a competence development in Analytical Chemistry</b><br/> Isabel María Pérez de Vargas Sansalvador<br/> Department of Analytical Chemistry. University of Granada</p> <p><b>[3] Fruit flies and inheritance: A case of project-based learning</b><br/> Rafael Navajas Pérez<br/> Department of Genetics. University of Granada</p> <p><b>[4] Innovation in teaching Applied Mathematics at the University of Granada</b><br/> Pedro González Rodelas<br/> Department of Applied Mathematics. University of Granada</p> <p><b>[5] Project-based learning for promotion of teamwork and communication techniques</b><br/> María Clavero Gilabert<br/> Department of Structural Mechanics and Hydraulic Engineering. University of Granada</p> <p><b>[6] The historical collection of the Department of Zoology as teaching resource</b><br/> Francisca del Carmen Ruano Díaz<br/> Department of Zoology. University of Granada</p> <p><b>[7] The virtual museum of Zoology and its evolution</b><br/> Francisca del Carmen Ruano Díaz<br/> Department of Zoology. University of Granada</p> <p><b>[8] Preliminary results of the project “Orientation and capacitation of Chemical Engineering students to facilitate their job insertion”</b><br/> María Ángeles Martín Lara<br/> Department of Chemical Engineering. University of Granada</p> <p><b>[9] Using gamification and cases-based learning through the Classcraft tool to improve collaborative work in neurological physical therapy class</b><br/> Irene Cabrera Martos<br/> Department of Physiotherapy. University of Granada</p> <p><b>[10] Use of plastinated organs as a support tool for your microscopic study</b><br/> Cristina Elena Trenzado Romero<br/> Department of Cell Biology. University of Granada</p> <p><b>[11] Gamification and game-based learning for the development of STEAM skills in kindergarten, primary and secondary education. Updating initial teacher training</b><br/> Alicia Fernández Oliveras<br/> Department of Didactics of Experimental Sciences. University of Granada</p> <p><b>[12] Teaching innovation in designing resources to evaluate competencies with PBL in the Nursing Degree</b><br/> Carmen Enrique Mirón<br/> Department of Inorganic Chemistry. University of Granada</p> <p><b>[13] Application of the Flipped Classroom methodology in Higher Education: analysis of perceptions of future teachers</b><br/> Inmaculada Aznar Díaz<br/> Department of Didactics and School Organization. University of Granada</p> <p><b>[14] Training in the early detection of gender violence through simulated clinical experience</b><br/> Nicolás Mendoza Ladrón de Guevara</p> |
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|       | <p>Department of Obstetrics and Gynaecology. University of Granada</p> <p><b>[15] Incorporation of the perspective of gender, equity and Human Rights in teaching and learning of sexual and reproductive health</b><br/>Nicolás Mendoza Ladrón de Guevara<br/>Department of Obstetrics and Gynaecology. University of Granada</p> <p><b>[16] Implementing an open source geographic information system in territorial planning workshops</b><br/>Francisco Emilio Molero Melgarejo<br/>Department of Urban and Spatial Planning. University of Granada</p> <p><b>[17] Virtual support assessment for the competencies of the final year project</b><br/>Maria Adelaida Álvarez Serrano<br/>Department of Nursing. University of Granada</p> <p><b>[18] Developing resources for teaching to students with Special Educational Needs (SEN) in Anatomy</b><br/>Laura Cabeza Montilla<br/>Department of Human Anatomy and Embryology. University of Granada</p> <p><b>[19] Application to generate exercises of Econometrics</b><br/>Rosa María García Fernández<br/>Department of Quantitative Methods for Economics and Business. University of Granada</p> <p><b>[20] Acquisition of new skills in cardiorespiratory physiotherapy: closer to reality</b><br/>Irene Torres Sánchez<br/>Department of Didactics and School Organization. University of Granada</p> <p><b>[21] Use of new technologies applied in the teaching of Anatomy area subjects</b><br/>Gloria Perazzoli<br/>Biomedical Research Centre (CIBM). University of Granada</p> <p><b>[22] Design and implementation of a network videogame as a platform for project-based learning: MATILDA (ModulAr Telematic topics related Development platform)</b><br/>Juan José Ramos Muñoz<br/>Department of Signal Theory, Telematics and Communications. University of Granada</p> <p><b>[23] Simulating interest in learning Biochemistry using blogUGR to successfully integrate students and teacher with society and current affairs</b><br/>María Isabel Rodríguez Lara<br/>Department of Biochemistry and Molecular Biology III and Immunology. University of Granada</p> <p><b>[24] Tutoring and academic/professional orientation for students of the Physics Degree at the University of Granada</b><br/>Estrella Florido Navio<br/>Department of Theoretical Physics and Cosmology. University of Granada</p> <p><b>[25] Teaching4Learning@Unipd. The case of University of Padova</b><br/>Concetta Tino<br/>Department of Philosophy, Sociology, Pedagogy and Applied Psychology (FISPPA). University of Padua</p> |
| 17:30 | <p><b>Workshops: Looking for the future</b><br/>Dynamic working groups will be set up in order to discuss and design proposals</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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|              | <p>for the future of teacher training and innovation in teaching and learning in Higher Education. Possible topics are (according to the interests of the participants):</p> <p>Group 1: Teacher training, new methodologies and resources</p> <p>Group 2: Sustainable development (Agenda 2030) in teaching and learning</p> <p>Group 3: other topics</p> |
| <b>18:30</b> | <p><b>Reporting from the workshops</b></p> <p>A speaker of each working group will present the conclusions and proposals for future projects and activities</p>                                                                                                                                                                                            |
| <b>19:00</b> | <b>Wrapping-up and conclusions</b>                                                                                                                                                                                                                                                                                                                         |
|              | <b>Farewell and closure</b>                                                                                                                                                                                                                                                                                                                                |

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