

# ITHET 2015

14th International  
Conference on  
Information  
Technology Based  
Higher Education and  
Training



June 11-13, 2015, Caparica, Lisbon - Portugal

## Welcome Message

It is our pleasure to welcome all participants to ITHET'2015, the 14th International Conference on Information Technology Based Higher Education and Training, 11-13 June, 2015, Caparica, Lisbon, Portugal.

ITHET'2015 is organized by UNINOVA, and is sponsored by the Faculty of Sciences and Technology of Nova University of Lisbon, and Boğaziçi University, and technically co-sponsored by EAEEIE - European Association for Education in Electrical and Information Engineering, IEEE Education Society, IEEE Industrial Electronics Society, and IGIP - International Society for Engineering Pedagogy.

UNINOVA [Institute for the Development of New Technologies] is a private not-for-profit Research Organization admitted in 1988 as a full member of IASP [International Association of Science Parks] in recognition of the outstanding activities and initiatives pursued by the institute in close co-operation with Portuguese industry and Faculty of Sciences and Technology of Nova University of Lisbon.

ITHET'2015 features an excellent technical program. We are fortunate to benefit from having two invited speakers: Teresa Restivo, from Faculty of Engineering of University of Porto, and João Correia de Freitas, from Faculty of Sciences and Technology of Nova University of Lisbon. The 6th International Workshop on Interactive Environments and Emerging Technologies for eLearning (IEETeL 2015) will be held in conjunction with ITHET'2015, during the second day.

The quality of the program is a combination of quality submissions and diligent work of the members of the International Program Committee. We would like to acknowledge all authors of submitted papers and all members of the Program Committees, who dedicated their time to the review of the submitted papers.

Last, but not the least, we would like to acknowledge the contribution of all members of the several committees that contribute to putting together such exciting program. We are also grateful to all members of the Local Organizing Committee who generously has spent their time to help in the organization of the event.

The success of any conference depends on the quality of the program and participation of people. We thank you all for being here. We trust that you will find the technical program intellectually stimulating and your stay in Lisbon and Caparica really enjoyable.

June, 2015

*Luís Gomes and Okyay Kaynak, General Co-Chairs*

*Anikó Costa and Robin Braun, Technical Program Committee Co-Chairs*

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Okay Kaynak	(Turkey / China)

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## Special Session Chairs

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Rogério Campos Rebelo  
Thiago Pereira

# Conference Venue & Social Events

The conference will be held at “Hotel Ever Caparica” in Caparica, south of Lisbon, the capital of Portugal. Lisbon has a population of one million inhabitants, is a modern city, which has a lot to offer both in terms of history, culture and social life. It stands on the westernmost point of the European continent, where the Tagus River flows into the Atlantic Ocean. Its Atlantic climate, with some Mediterranean influences, is probably the mildest of all European capitals. The hotel has 352 rooms including 12 suites and 7 specially equipped rooms for the handicapped and private balconies with magnificent views. With superb view over the sea, 20 minutes from Lisbon centre, 2 restaurants. This hotel has the unique characteristic that can be simultaneous for business and leisure.

## Address:

Av. General Humberto Delgado, n°47  
2829-506 Costa de Caparica  
Almada – Portugal  
(38.641357° N 9.23667° W)

**Tel:** (351) 212 918 900

**Fax:** (351) 212 918 919

**E-mail:** [frontdesk.caparica@everhotels.com](mailto:frontdesk.caparica@everhotels.com)

**WWW:** <http://everhotels.com/caparica/hotel-overview.html>



## How to arrive at the conference (from Airport)

**By car:** The journey takes about 22 minutes to travel about 23.1 km. (see map below).

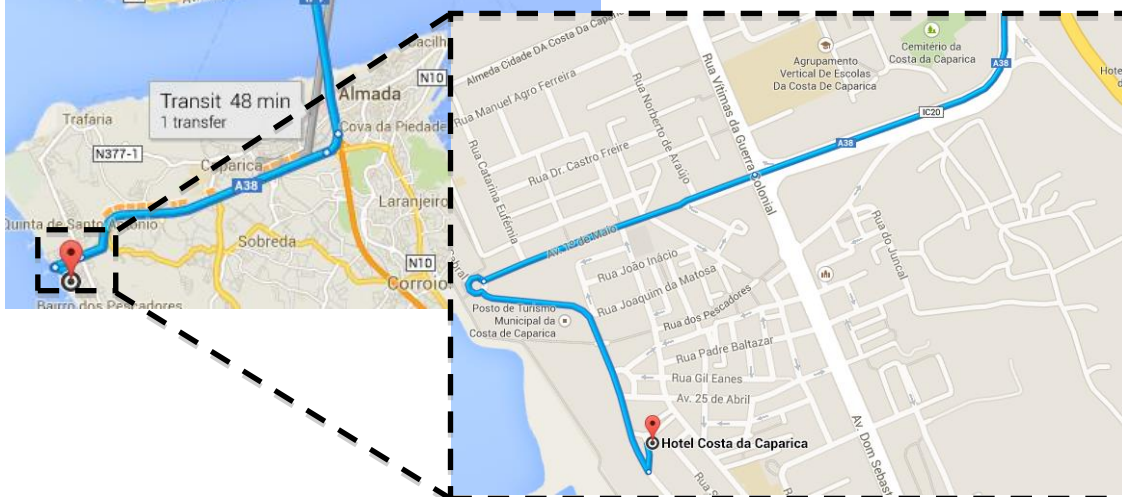
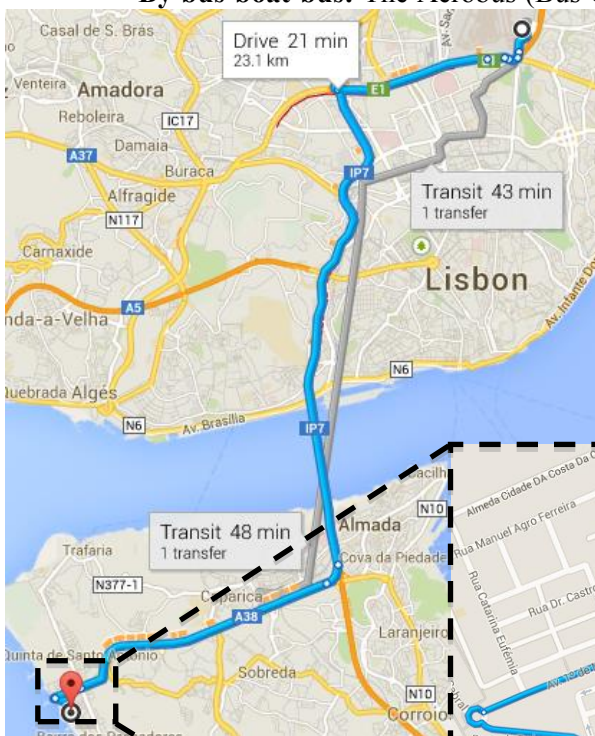
**By taxi:** During the day, it should cost roughly 30 €. Please be aware that you only pay what is marked, which includes luggage, plus toll back to Lisbon (1.35 €). During the night, it should cost roughly 40 €

**By bus-boat-bus:** The Aerobus (Bus Carris n° 91) leaves every 20 minutes, from 7.00 to 23.00. It goes to "Cais do Sodré" (Sodré's Quay) where there are boats to Cacilhas. The boat's Company is "Transtejo". At the other side of the Tagus River (Cacilhas) you catch the bus from Company TST n° 124 to “Costa da Caparica”.

**By public transportation:** One possible option: Subway till “Roma” station. In “Roma” station catch a Fertagus Train till Pragal. From there, Bus 124 from “TST” (“Transportes Sul do Tejo”), direction “Costa da Caparica”.

For more possible options please visit:

<http://transporlis.sapo.pt>

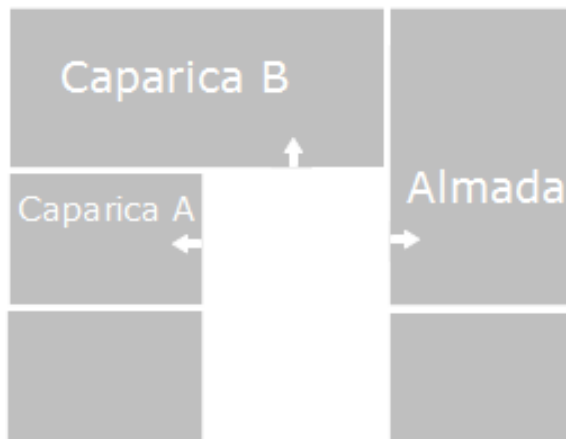


## Conference Rooms

The conference will take place in the ground floor of the Hotel Ever Caparica. The Hotel has 352 rooms including 12 suites and 7 especially equipped rooms for handicapped and private balconies with magnificent views.

The conference takes place in three rooms:

- Room Caparica A
- Room Caparica B
- Room Almada



The **Conference administrative** functions will be held at room **Caparica A**. Rooms **Caparica B** and **Almada** will be used for oral presentations. **Plenary sessions** will take place in room **Caparica B**.

Lunches are included in the registration fee. They take place at the conference venue.



Coffee-breaks will be held at the conference rooms hall.

“Bar Jardim” whereas the lunches will take place at the eighth floor of the hotel, in a restaurant called Atlântida.

## Welcome Reception Location

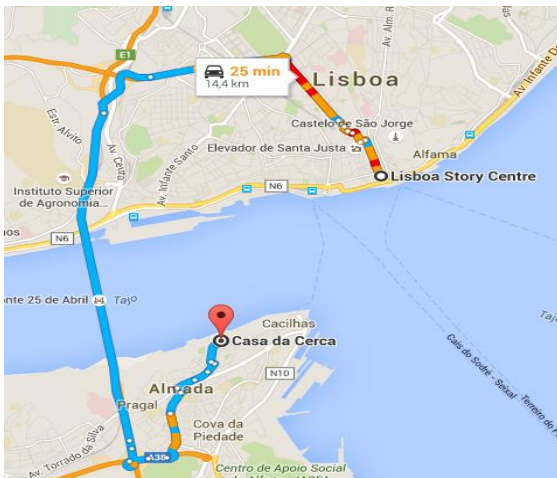
Welcome reception will take place in *Casa da Cerca*, located at approximately 10Km from the Hotel, and 14 Km from Lisbon Historic Center. Casa da Cerca is located on top of a cliff in the north end of the Ancient Almada Center, with a remarkable view of the Tagus river. It is considered an architectural gem of the eighteenth century civil architecture in the city of Almada.

The bus starts at 18:30 from Hotel.

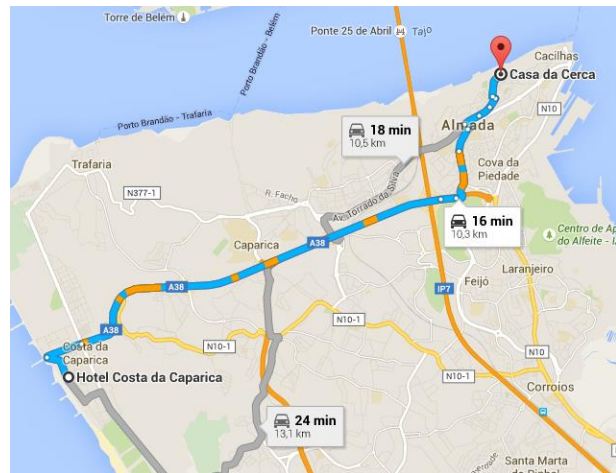
**Address:** Rua da Cerca, 2800-050 Almada, Portugal.

Tel: 21 272 49 50

**Coordinates:** (38° 41' 1.154''N, 9° 9' 33.318'' W)



Casa da Cerca – Lisbon Historic Center



Casa da Cerca – Conference Hotel

## Conference Dinner Location

With a splendid view over Lisbon, the Saint Jorge Castle (Castelo de São Jorge in Portuguese), is an ancient monument occupied by the Romans, Visigoths and Moors before being transformed into a Royal Palace by the XIV century. Visitors can climb the towers and walk along the castle walls to appreciate the magnificent views of Lisbon as well as admire the Tagus River running in its splendour. The castle of Saint Jorge has eleven towers and a dry moat.

The journey will take about 30 minutes from Conference Hotel (Ever Caparica)

**Address:** R. de Santa Cruz do Castelo

1100-129 Lisboa Portugal,

**Coordinates:** (38° 42' 50.072'' N, 9° 8' 0.513'' W)



**Bus leaves from hotel at 18:30**



## Invited Speakers – Plenary Talks

**Thursday 11<sup>th</sup>, 9:30h-10:30h**

**Keynote 1:** Prof. Teresa Restivo, FEUP - Faculty of Engineering of Universidade do Porto, Portugal



**Title:** Online Experimentation in line with the Internet of Things

**Abstract:** The aim of this talk is to travel around the huge possibilities brought by the online experimentation in the areas of education, industrial and medical training, and research and knowledge dissemination in line with the frequently referring Internet of Things. Online experimentation is based on emergent technologies, like remote access to experimentation, virtual 2D and 3D experimentation, augmented reality applications, sensorial devices for remote or virtual reality interaction and other additional tools such as serious games and live videos, available through web platforms with possible associated intelligent tutoring functionality.

A comprehensive review of all these types of online experimentation will be illustrated in order to discuss their potentialities in so many daily activities.

In 2011 the Portuguese Consortium of Online Experimentation was founded. In this talk the consortium will be also generally referred to consider its level of richness in very diverse domains.

**Friday 12<sup>th</sup>, 11:15h-12-15h**

**Keynote 2:** Prof. João Correia de Freitas, Faculty of Science and Technology of Nova University of Lisbon, Portugal



**Title:** e-Learning with Moodle at FCT/UNL: are we there yet?

**Abstract:** The use of ICT at FCT/UNL for teaching and learning as a structured and supported approach started back in 1994 as a spin-off of the college involvement on the national project of ICT in Primary and Secondary Education. The e-campus project built upon the then novel campus wide LAN and pioneered providing shared internet access to teacher and students with a few basic services (directory, email, ftp, gopher, listserv and news). These naturally developed to campus wide open connection as wide band links and world wide web developed at a fast pace. A new quantum leap on our educational use of ICT was the pilot installation of Moodle (a widely use learning management system) in 2004, 10 years later, which was later and since 2008 somehow adopted as "sort-of-" official system. After 20 years of starting the adoption of ICT, where do we stand on the use of Moodle as a strategy for the enrichment of the higher education environment at FCT/UNL? Are we there yet?

# Technical Program

Thursday, June 11, 2015

Session	Title
9:00 – 9:30 Room Caparica B	<b>Opening Session</b>
9:30 – 10:30 Keynote 1 Room Caparica B	<b>Prof. Teresa Restivo</b> , FEUP - Faculty of Engineering of University of Porto, Portugal  <i>Online Experimentation in line with the Internet of Things</i>
10:30 – 11:00	<i>Coffee Break</i>
11:00-12:15 Session Assessment Room Caparica B	<b>Chair: João Martins</b> <b>Session: Assessment: The impact of technology on assessment</b>
	On-line Air Quality Assessment Virtual Laboratory
	<i>Catalin Cornel Patrascu, Doru Vatau and Flaviu Mihai Frigura-Iliasa</i>
	Difference of pedagogical approaches for Chinese and French master students in a French-Chinese microelectronics joint master diploma
	<i>Olivier Bonnaud</i>
	An assessment for learning framework with peer assessment of group works <i>Laurent Moccozet and Camille Tardy</i>
11:00-12:15 Innovation I Room Almada	<b>Chair: João Rosas</b> <b>Session: Innovation: Innovative uses of technology - I</b>
	Workshop Rapid Prototyping – a new approach to introduce digital manufacturing in engineering education
	<i>Stefan Junk and Rebecca Matt</i>
	Expert System for Laboratory Testing and Training in the Field of the Influence of Power Equipment on Telecommunication Lines Based on Virtual Instrumentation <i>Laurentiu Padeanu, Doru Vatau, Flaviu Mihai Frigura-Iliasa and Martian Mot</i>
	Contextual Learning Analytics Apps to Create Awareness in Blended Inquiry Learning <i>Andrii Vozniuk, María Jesús Rodríguez-Triana, Adrian Holzer, Sten Govaerts, David Sandoz and Denis Gillet</i>
12:15-14:00	<i>Lunch</i>

<b>14:00-15:40</b> <b>Session Virtual</b> <b>Room Caparica B</b>	<b>Chair: Inmaculada Fita Fernandez</b> <b>Session: Virtual: Virtual laboratories, classrooms</b>
	3D Virtual Reality Experiments To Promote Electrical Engineering Education <i>Manuel Valdez, Carlos Ferreira, Fernando Maciel Barbosa and Maria João M. Martins.</i>
	Improving virtual learning environments by development and integration of 3D models of real devices <i>Georgi Hristov, Diyana Kyuchukova, Svilen Borisov and Plamen Zahariev</i>
	Analysis of the usage of virtual classrooms in the National Polytechnic School of Ecuador: Teachers' perception <i>Myriam Peñafiel, Luz-Marina Vintimilla, Patricio Pozo and Sergio Luján-Mora.</i>
	Structured Text Simulator for PLC in Learning Environment <i>Luis Brito Palma, João Almeida Rosas, João Pecorelli and Paulo Sousa Gil</i>
<b>14:00-15:40</b> <b>Session Innovation II</b> <b>Room Almada</b>	<b>Chair: Stefan Junk</b> <b>Session: Innovation: Innovative uses of technology - II</b>
	Use of Linked Data to Enhance Open Educational Resources <i>Rosa Navarrete and Sergio Luján-Mora</i>
	Personality Type Indicator Models in Serious Games <i>Gonca Gökçe Menekşe, Nergiz Cagiltay and Erol Ozcelik</i>
	ETL^2 - Educational Tool for Learning ETL - Solving inadequacy problems of industry oriented tools in Data Warehouse teaching <i>Rui Oliveira and José Vitor Ramos</i>
	Practical activities in network courses for MOOCs, SPOCs and eLearning with Marionnet <i>Camille Coti, Jean-Vincent Loddo and Emmanuel Viennet</i>
<b>15:40-16:10</b>	<i>Coffee Break</i>
<b>16:10-17:25</b> <b>Session Others I</b> <b>Room Caparica B</b>	<b>Chair: Anthony Ward</b> <b>Session: Others I</b>
	Relevance of MOOCs for Training of Public Sector Employees <i>Sandra Sanchez-Gordon, Tania Calle-Jimenez and Sergio Luján-Mora</i>
	Knowledge, Technology and Innovation (KTI): Opportunities, Issues and Challenges of KTI transfer between Norway and the Balkans countries <i>Sule Yildirim Yayilgan, Aurilla Arntzen, Gry Helene Stavsen, Milena Ljubicic, Bjorn Solvang, Richard Meadow and Fisnik Dalipi</i>
	Promotion of self-learning by means of Open Educational Resources and Semantic Technologies <i>Janneth Chicaiza, Nelson Piedra, Jorge Lopez-Vargas and Edmundo Tovar</i>

<b>16:10-17:25</b> <b>Session</b> <b>Innovation III</b> <b>Room Almada</b>	<b>Chair: Laure Petrucci</b>
	<b>Session: Educational Resources and Semantic Technologies III</b>
	Transforming Teaching and Learning with Innovative Use of Technology – Case Study <i>Samra Mujacic, Samira Mujkic, Muhdin Mujacic and Tea Hasanovic</i>
	Teaching Strategy on VHDL Course Based on Participative Learning <i>Jose Miguel Montanana Aliaga, Lenin Lemus, Arnulfo Alanis Garza and Jose</i> <i>Vicente Benlloch Dualde.</i>
	Teaching Computer Networks Using Virtual Machines <i>Lenin Lemus, José-V. Benlloch-Dualde, Jose Miguel Montanana Aliaga,</i> <i>Miguel A. Mateo Pla and Julio Pons Terol</i>
<b>18:30-20:30</b>	<b>Welcome reception</b>

## Friday, June 12, 2015

Session	Title	
09:00-10:15 Session Innovation IV Room Caparica B	<b>Chair: Sergio Luján Mora</b>	
	<b>Session: Innovation: Innovative uses of technology - IV</b>	
	Communicating and Smart Objects: multidisciplinary topics for the innovative education in microelectronics and its applications <i>Olivier Bonnaud and Laurent Fesquet</i>	
	A Learning System of Quadratic Functions based on Scaffolding Support <i>Tatsuya Ishida, Yuki Hirai and Keiichi Kaneko</i>	
	Using Kiva.org to Develop Critical Student Employability Skills <i>Pedro Coelho and Mamie Griffin Phd</i>	
	<b>Chair: : Marco Temperini</b>	
09:00-10:15 Session IETeL I Room Almada	<b>Session: IETeL - tools and technologies I</b>	
	Analysis of Student's Reflections upon the Efficacy of their Note-taking Activities in a Blended Learning Course <i>Minoru Nakayama, Kouichi Mutsuura and Hiroh Yamamoto</i>	
	Use of Evernote for the Creation and Management of e-Portfolios in Higher Education <i>Adolfina Perez Garcias and Victoria I. Marín</i>	
	Application of interactive videos in education <i>Line Kolås</i>	
	<b>Chair: João Martins</b>	
	<b>Session: Posters</b>	
10:15-10:45 Session Posters: Room Almada	The Multidisciplinary Project As An Integrator Element In The Teaching-Learning Process <i>Edson Pedro Ferlin.</i>	
	Application of ICT in Distance learning curricula in engineering at Warsaw University of Technology <i>Elżbieta Piwowarska, Bogdan Galwas and Marcin Godziemba-Maliszewski</i>	
	A Program Visualization System using 3D Still Graphics <i>Takahiro Suetomo and Koji Kagawa</i>	
	Role of narbs in tracking opinions about health issues <i>Ananda Mitra and Trent Cockerham</i>	
	Smartphones as pocket labs for DIY experimental physics <i>Joel Chevrier</i>	
	10:45-11:15	<i>Coffee Break</i>

11:15– 12:15 Keynote 2 Room Caparica B	<b>Prof. João Correia de Freitas</b> , Faculty of Sciences and Technology of Nova University of Lisbon <i>e-Learning with Moodle at FCT/UNL: are we there yet?</i>
12:15– 14:00	Lunch
14:00 - 15:40 Session Curriculum Room Caparica B	<b>Chair: Pedro Coelho</b> <b>Session: Curriculum</b>
	Text-mining Approach for Verifying Alignment of Information Systems Curriculum with Industry Skills
	<i>Sheng Xun Law, Swapna Gottipati and Venky Shankararaman</i>
	Multidisciplinarity In The Computer Engineering Program With An Integrated Project Course
	<i>Edson Pedro Ferlin.</i>
	Intelligent e-learning system model for maintenance of updates courses
	<i>Fatiha Elghibari, Rachid Elouahbi, Fatima Elkhouchi, Sanae Chehbi and Imane Kamsa.</i>
	Using Job Advertisements to inform curricula design for the Key Global Technical Challenges <i>Bidyut Baruah, Anthony Ward and Adeyosola Gbadebo</i>
14:00 - 15:40 Session IEETeL - SBTL Room Almada	<b>Chair: Malinka Ivanova</b> <b>Session: IEETeL - social-based tools and technologies</b>
	Adaptive and Intuitive Interactions with Socially-Competent Educational Robots
	<i>Maya Dimitrova, Hiroaki Wagatsuma, Gyanendra Nath Tripathi and Guangyi Ai</i>
	How to develop and maintain an on-line community of co-learners: A social media classroom <i>Daniel Buzzo and Philip Phelps.</i>
	Towards a quantitative evaluation of the relationship between the domain knowledge and the ability to assess peer work <i>Maria De Marsico, Andrea Sterbini and Marco Temperini</i>
	Exploiting Wikipedia for Discovering Prerequisite Relationships Among Learning Objects <i>Fabio Gasparetti, Carla Limongelli and Filippo Sciarrone</i>
15:40-16:10	Coffee Break
16:10 - 17:25 Session Others II Room Caparica B	<b>Chair: João Paulo Barros</b> <b>Session: Others II</b>
	Widening participation in EIE programmes across Europe for students with disabilities <i>Ian Grout, Grindei Laura, Anthony Ward, Snowden Penn, Busk Marner Christina and Tatjana Welzer</i>
	A study on the possibility to use Raspberry Pi as a console server for remote access to devices in virtual learning environments <i>Diyana Kyuchukova, Georgi Hristov, Plamen Zahariev and Svilen Borisov.</i>
	Decrypting Cryptography <i>Étienne André and Laure Petrucci</i>

<b>16:10 - 17:25</b> <b>Session IEETeL -</b> <b>TTII</b> <b>Room Almada</b>	<b>Chair: Minoru Nakayama</b>
	<b>IEETeL - tools and technologies II</b>
	<b>Researching Data Privacy Models in eLearning</b>
	<i>Malinka Ivanova, Gabriela Grosseck and Carmen Holotescu</i>
	<b>A virtual organization based grid e-learning environment in the SFINGE project</b>
	<i>Marcello Castellano, Nicola Corriero, Marco Antonio Tangaro, Tiziano Del Vito, Angelo Roscino and Graziana Zaccheo</i>
	<b>Wiki Course Builder: a System for Retrieving and Sequencing Didactic Materials from Wikipedia</b>
	<i>Carla Limongelli, Fabio Gasparetti and Flippo Sciarrone</i>
<b>18:30</b>	<b>Conference Dinner</b>

## Saturday, June 13, 2015

Session	Title
09:25-10:15 Session Others III Room Caparica B	<b>Chair:</b> <b>Session: Others - III</b>
	That Flipping Classroom - Getting engineering students to be consciously competent on their own
	<i>Robin Braun and Zenon Chaczko</i>
	Developing Tailored-Made Online Materials for Academic Use <i>Blanka Klimova.</i>
10:15-10:45	Coffee break
10:45-12:00 Session Roles Room Caparica B	<b>Chair: Edmundo Tovar Caro</b> <b>Session: Roles: Changes in the roles and relationships</b>
	Marketing EIE programmes in higher education towards students from underrepresented groups <i>Jose V. Benlloch-Dualde, Ian Grout, Laura Grindei and Tony Ward</i>
	On the Introduction of Flipped Teaching Across Multi-Disciplinary Fields <i>Inmaculada Fita, Germán Moltó, Ana María Fita, José Francisco Monserrat and Eva Mestre</i>
	An experience in the blended learning in the course aimed at the development of IT competence <i>Elvira Strakhovich.</i>
10:45 - 12:00 Session Innovation V Room Almada	<b>Chair: F. Maciel Barbosa</b> <b>Session: Innovation: Innovative uses of technology - V</b>
	Using computer history as innovation for computer organization subjects <i>Xavier Molero, Ana Pont, Antonio Robles and Milagros Martínez</i>
	Learning time planning in a distance learning system using intelligent agents <i>Imane Kamsa, Rachid Elouahbi, Fatima El Khoukhi, Fatiha Elghibari and Sanae Chehbi</i>
	Local impacts of university in supporting creativity, invention and development of innovation <i>Tatiana Corejova and Maria Rostasova</i>
12:00 – 12:15	Closing Session
12:15 – 14:00	Lunch



# Acknowledgments

## Technical Co-Sponsors

- EAEIE European Association for Education in Electrical and Information Engineering  
IEEE Education Society  
IEEE Industrial Electronics Society  
IGIP International Society for Engineering Pedagogy



## Supporters



## Organizational Sponsors



# ITHET' 2015 Program Overview

11 June – Thursday

Caparica B Almada

12 June – Friday

Caparica B Almada

13 June – Saturday

Caparica B Almada

08:30	Registration						
09:00	Opening Session		09:00	Innovation IV	IEETeL - I	09:25	Others III
09:30	Invited Speaker Teresa Restivo		10:15		Posters		
10:30	Coffee-break					10:15	Coffee-break
11:00	Assessment	Innovation I	10:45	Coffee-break		10:45	Roles
			11:15	Invited Speaker João Correia de Freitas			Innovation V
12:15	Lunch		12:15	Lunch		12:00	Closing Session
14:00	Virtual	Innovation II	14:00	Curriculum	IEETeL - SBTL	12:15	Lunch
15:40	Coffee-break		15:40	Coffee-break			
16:10	Others I	Innovation III	16:10	Others II	IEETeL - TTII		
18:30	Welcome Reception Casa da Cerca		18:30	Conference Dinner St. Jorge Castle			