

ICEE 2012 - Turku, Finland  
**TOPICAL SESSION SCHEDULE / UPDATE 2012-08-03, 07:00 AM EET**



## TOPICAL SESSION SCHEDULE

**TURKU, FINLAND / 30.7. - 3.8.2012**

### Tuesday 31.7.2012 13.00-14.00 / PARALLEL SESSION 1

Session	Mathematics in education	Technologies for teaching and learning	Engineering education systems	Global challenges of engineering education
Room	<i>Delta</i>	<i>My</i>	<i>Omega</i>	<i>Sigma</i>
Chair	<b>Gregory Baker</b>	<b>Olli Mertanen</b>	<b>Tapio Salakoski</b>	<b>Johan Lilius</b>
13:00-13:20	16. Päivi Porras: Profiles of Engineering Students in Mathematics	19. Albert Albers, Toan Nguyen and Norbert Burkardt: Improving Hands-On Education by Introducing a Mechanical Components Model Suitcase	83. Elina Kontio, Nina Lehtinen and Juha Kontio: A Study on Health Informatics Education in Finland	39. Dante Augusto Barone, Marcia Cançado Figueiredo, Gabriel Lamb Wink and Lucas Jardim: New challenges for engineers: design and implementation of a mobile system dedicated to improve oral health conditions
13:20-13:40	43. Catherine Skokan: Analysis of the Impact of Placing Engineering, Mathematics, and Computer Science Graduate Students in the K-12 Classroom	33. Jorge Cantero, Jose Luis Saorin, Norena Martín and Manuel Contero: Digital Tangibles Interfaces as an alternative of Tangible Models for its use in a Virtual Learning Environment in Engineering	104. Peter Bofah and Mohamed Chouikha: A Novel Approach to Introduce Research in Undergraduate Engineering Curriculum	78. Jaana Holvikivi: From theory to practice: adapting the engineering approach
13:40-14:00	113. Jennifer Czocher: Mathematical Modeling and Engineering Majors	37. Mario Leindl, Eduard Oberaigner and Marianne Mataln: A modern course in vibration of rods and beams	149. Maria Charalampidou, Spyridon Mouroutsos and George Pavlidis: Learning advanced telemetry and telecontrol systems in the laboratory	215. Enrique Ballester Sarrias, Manuel Gasch Salvador, Laura Contat Rodrigo, Isabel Gasch Molina, Maria Dolores Navarro Mas and Luis Manuel Sanchez Ruiz: Implementation of a new teaching-learning system in the BEng degree in Mechanical Engineering towards its EHEA adaptation

**CANCELED**

## TOPICAL SESSION SCHEDULE / UPDATE 2012-08-03, 07:00 AM EET

Tuesday 31.7.2012 14.10-15.10 / PARALLEL SESSION 2					
Session	Business, innovation and entrepreneurship	Mathematics in education	Technologies for teaching and learning	Engineering education systems	Global challenges of engineering education
Room	<i>Gamma</i>	<i>Delta</i>	<i>My</i>	<i>Omega</i>	<i>Sigma</i>
Chair	<b>Angelo Duarte</b>	<b>Catherine Skokan</b>	<b>Jose Luis Saorin</b>	<b>Updated: Elina Kontio</b>	<b>Juha Kontio</b>
14:10-14:30	252. Tatiana Corejova and Juraj Kavecky: Education to the Technology Entrepreneurship in Engineering Study Programs in the Slovak Republic	161. Dag Wedelin and Tom Adawi: Bridging theory and practice: An inquiry-based course in mathematical modelling	52. Carlos Carbonell Carrera and Jose Luis Saorin: Spatial Data Infrastructure as learning environments for spatial skills development in engineering education	150. Tero Reunanen, Juha Valtanen and Riitta Windahl: Evolutionary Approach to Modern Creative Engineering Studies in Turku University of Applied Sciences	11. Martin Jaeger and Desmond Adair: A Student's Perception of Ethics during his Final Year Project "Ethics on a Construction Project" in the Middle East
14:30-14:50	256. Sakari Pieskä and Mika Luimula: How to Promote Innovations through Applied Research in Collaboration with SMEs?	207. Jenna Tague, Jennifer Czoher and Gregory Baker: Mathematical Literacy for Engineering Majors	93. Riku Haavisto, Johannes Holvitie, Erkki Kaila, Teemu Rajala, Mikko-Jussi Laakso and Tapio Salakoski: Designing a game mode for online learning environment	165. Jiri Jan: Differing Concepts of Biomedical Engineering Education	179. Nancy Healy and Lynn Rathbun: Developing Globally Aware Scientists and Engineers in Nanoscale Science and Engineering
14:50-15:10	269. Jerker Björkqvist, Luigia Petre, Karl Rönholm and Dragos Truscan: Integrating Innovation Driving Activities in a Master Level Project Course	254. Jim Morgan, Robert Capraro and Mary Margaret Capraro: Science, Technology, Engineering and Mathematics (STEM) Education: Methods to Improve PSAT Scores Using a STEM Focus	87. Chun-Ming Huang, Chih-Chyau Yang, Yi-Jun Liu, Chun-Chieh Chiu, Chun-Chieh Chu, Wei-De Chien, Yen-Chun Lu, Hung-Lieh Chen, Chun-Pin Lin and Chien-Ming Wu: A New Embedded System Prototyping Service for Taiwan Academia	168. Hamadou Saliah-Hassane, Maarouf Saad and Willie K. Ofosu: Smart Educational Learning Devices for Online Laboratories	216. Enrique Ballester Sarrias, Marina Puyuelo Cazorla, Laura Contat Rodrigo, Manuel Gasch Salvador and Luis M. Sanchez Ruiz: Comparative analysis of students performance in pre-EHEA and EHEA structured BEng degrees in Industrial Design Engineering

## TOPICAL SESSION SCHEDULE / UPDATE 2012-08-03, 07:00 AM EET

Tuesday 31.7.2012 15.30-16.30 / PARALLEL SESSION 3					
Session	Business, innovation and entrepreneurship	Global competences, accreditation and quality	Technologies for teaching and learning	Engineering education systems	Global challenges of engineering education
Room	<i>Gamma</i>	<i>Delta</i>	<i>My</i>	<i>Omega</i>	<i>Sigma</i>
Chair	<b>Mika Luimula</b>	<b>Juhani Soini</b>	<b>Carlos Carbonell Carrera</b>	<b>Jiri Jan</b>	<b>Nancy Healy</b>
15:30-15:50	157. Svein Thore Hagen and Harald Hasleberg: Entrepreneurship in higher education, a successful program at Telemark University College	54. Anouk Desjardins, Évelyne Doré, Raymond Desjardins and Dominique Chassé: Technical Writing Course Designed for the Realities of an Engineer	220. Enrique Ballester Sarrias, Laura Contat Rodrigo, Juan Antonio Monsoriu Serra and Luis M. Sanchez Ruiz: E-learning: contributions from the School of Design Engineering ETSID at Valencia (Spain)	177. Luciana Coelho, Jose Grimoni and Osvaldo Nakao: Comparison of Graduate Courses in Teacher Training Schools of Engineering	50. Juha Kontio and Motomu Takeshige: Enhancing cultural awareness and mobility between Japan and Finland
15:50-16:10	171. Markus Forstén, Ari Putkonen, Osmo Eerola and Tristan Robinet: Learning Strategic Management Skills with Business Simulation Game	137. Radim Farana, David Fojtík and Marek Babiuch: Team Education Support of the Technical Subjects at the Faculty of Mechanical Engineering	221. Luis M. Sanchez Ruiz, José-A. Morano and M.-Dolores Roselló: Fitting Mathematics to EHEA in Aerospace Engineering at the School of Design Engineering ETSID in Valencia (Spain)	205. Emmanuel Glakpe and Selete Avoke: A Comparative Analysis of the Pre-Engineering Curricula of Three International Educational Systems	119. Dan Zhang, Laurie Cuthbert, Yashu Ying, Eleanor Pritchard and Steve Ketteridge: Students' Perspectives on Teamwork Learning in Engineering Education in China
16:10-16:30	218. Pasi Rajala and Matti Syrjälä: Innovations to product, co-operation between Innotools and Saimaa University of Applied Sciences	146. Tero Reunanen and Riitta Windahl: Rocketing Professional Competence of Engineering Students at TUAS (Turku University of Applied Sciences)			175. Louis Nadelson, Anne Seifert, Sandra Nadelson and Melinda Hamilton: Teaching By Design: Preparing K-12 Teachers to Use Engineering Design across the Curriculum

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**Wednesday 1.8.2012 8.30-9.30 / PARALLEL SESSION 4**

Session	Business, innovation and entrepreneurship	Global competences, accreditation and quality	Technologies for teaching and learning	Engineering education systems	Global challenges of engineering education
Room	<i>Gamma</i>	<i>Delta</i>	<i>My</i>	<i>Omega</i>	<i>Sigma</i>
Chair	<b>Osmo Eerola</b>	<b>Radim Farana</b>	<b>Jukka V. Paatero</b>	<b>Hamadou Saliah-Hassane</b>	<b>Breno Carmo</b>
08:30-08:50	70. Michele Angelo, Nilton Dantas, Angelo Loula, Matheus Pires and Angelo Duarte: Entrepreneurship in a Curriculum Redesign of Computer Engineering	151. Kalliopi Skarli: Mapping out Global Competences: a comparative case study	94. Johannes Holvitie, Riku Haavisto, Erkki Kaila, Teemu Rajala, Mikko-Jussi Laakso and Tapio Salakoski: Electronic exams with automatically assessed exercises	226. Teemu Santanen and Sirpa Sandelin: Study course cooperation model for enterprises and SAMK - Case Offshore	65. Josef Rojter: Peeling an Onion: Marketing Engineering Courses Through New Course Pedagogy?
08:50-09:10	89. Tony Wahlroos, Juha Nurmio, Anne Norström and Jukka Kaitaranta: SUSBIO – developing the biogas process for future engineers	152. Maria Rostasova, Tatiana Corejova and Alena Chrenkova: Creation of Quality Assurance in Lifelong Learning in the Slovak Republic <b>CANCELED</b>	97. GK Suraishkumar: Active Learning through Video Lectures	230. Petri Sainio and Seppo Virtanen: Structured Learning Journal Based Method for Lecture Courses in Engineering Education	116. Anne Donnelly, Sandra Russo, Nikki Kernaghan, Samesha Barnes and Jane Jacobi: SEAGEP science and engineering in the global context project and assessment of its effects
09:10-09:30	154. Jose Teixeira and Joni Salminen: Open-Source as Enabler of Entrepreneurship Ambitions among Engineering Students – A Study Involving 20 Finnish Startups	198. Juha Kontio, Patric Granholm, Heikki Valmu, Janne Mäntykoski, Karl Kruusamäe, Marija Aukstuoliene, Loreta Savulioniene, Peter Munkebo Hussmann and Kristina Edström: Supporting Programme Development with Self- and Cross-evaluations – Results from an International Quality Assurance Project	133. Tommi Metso and Kristiina Meltovaara: Facilitating & enhancing innovation competences and student involvement: an example of introducing real life problem solving as well as technologies to teaching product development and planning	238. Giuliano Donzellini and Domenico Ponta: Teaching Digital Design in the FPGA age	35. Janne Roslöf: Lecturers' Perspectives on the Educational Background of Engineering Students

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**Wednesday 1.8.2012 9:40-10:40 / PARALLEL SESSION 5**

Session	Integrating research and education	Global competences, accreditation and quality	Technologies for teaching and learning	Learning environments	Global challenges of engineering education
Room	<i>Gamma</i>	<i>Delta</i>	<i>My</i>	<i>Omega</i>	<i>Sigma</i>
Chair	<b>He Lingsong</b>	<b>Maria Rostasova</b>	<b>Emmanuel Glakpe</b>	<b>Domenico Ponta</b>	<b>Anne Donnelly</b>
09:40-10:00	59. Antti Hakkala and Seppo Virtanen: University-Industry Collaboration in Network Security Education for Engineering Students	214. R. Keith Stanfill and Susannah Howe: Roughly Right and Fast: Back-of-the-envelope Calculations for Estimation, Problem Bounding, and Design Decisions	95. Johannes Holvitie, Riku Haavisto, Teemu Rajala, Erkki Kaila, Mikko-Jussi Laakso and Tapio Salakoski: A Robot exercise for learning programming concepts	15. Liisa Kairisto-Mertanen and Olli Mertanen: Innovation pedagogy – a new culture for education	240. Marcelle Herescu, Edson L. Pereira, Giuliano S. Olguin and Patricia H. L. S. Mota: Initiatives to promote Science & Technology careers and their impact on IT's sector and on developing countries
10:00-10:20	60. Alpo Salmisto: Case Study: The Progressive Inquiry Learning Method in Course Real Estate Business and Management	255. Thyagarajan Srinivasan and David Carey: A Course in Instrumentation Automation	124. Ananda Maiti, Subhasis Mahata and Chinmay K Maiti: Low-Cost Remote Semiconductor Devices Laboratory with NI Switch	48. David Pundak and Arie Maharshak: Engineering Students' Dilemma – Work vs. Loan	261. M. Taghi Mostafavi: Engineering the Science and Engineering Education
10:20-10:40	62. Mika Jokinen, Karlo Villa and Minna Tuovinen: Towards self-steered studies by working in R&D projects	34. Tony Eng, Rudolph Mitchell and Sylvia Barsion: Assessment of Short-Term Post-Impact of Students' Learning Experience in an Oral Communication Course at MIT for EECS Majors		49. David Pundak, Orit Herscovitz and Miri Schaham: Engineering Students - Reading Habits and Fragile Knowledge	272. Sally Organ and Carol Morris: Open and Distance Learning for Engineering; Opportunities and Challenges

**CANCELED**

## TOPICAL SESSION SCHEDULE / UPDATE 2012-08-03, 07:00 AM EET

**Wednesday 1.8.2012 13:00-14:00 / PARALLEL SESSION 6**

Session	Integrating research and education	Student mentoring and tutoring	Technologies for teaching and learning	Learning environments	Engineering in future society
Room	<i>Gamma</i>	<i>Delta</i>	<i>My</i>	<i>Omega</i>	<i>Sigma</i>
Chair	<b><i>Alpo Salmisto</i></b>	<b><i>Rosetta Ziegler</i></b>	<b><i>Chinmay K Maiti</i></b>	<b><i>Liisa Kairisto-Mertanen</i></b>	<b><i>Josef Rojter</i></b>
13:00-13:20	117. Jarkko Paavola: Framework for Integration of Teaching and R&D in BSc Level Education - Case study on challenging long-term R&D effort	128. Reijo Asp and Kristiina Meltovaara: Enhancing student participation in engineering education: an alternative approach to practical work sessions	142. Tamás Molnár: Parzival meets modern architecture	51. Nikolay Mikhaylov: Virtual Development Lab: Concept, Implementation, Evaluation	76. Jyri Naarmala and Olli Mäkinen: The Age of Information and De Facto Ethics
13:20-13:40	139. Marianne Mataln, Mario Leindl and Eduard R. Oberaigner: Employment of OpenFOAM in Teaching and Research	110. María Consuelo Sáiz-Manzanares, María Jesús González-Fernández, Eduardo Montero, Fernando Aguilar and José Antonio Barón: Metacognitive knowing and solving problem: Case study on solving-problem in engineering thermodynamics	155. Helena Mälkki and Jukka V. Paatero: Promoting professional skills and holistic view in engineering education	67. Tapani Ojanperä: Enhancing Student Motivation by means of Software Programming Projects	178. Nancy Healy and Joyce Allen: Workforce Development in Nanoscale Science and Engineering - Training Teachers to Educate Future Nanoscale Scientists and Engineers
13:40-14:00	225. Jouko Lehtonen and Meiju Räsänen: Inventions as an environment for learning	120. Joseph Coccozza and Diana Sabogal: Establishing a Tradition of Mentoring	160. James McClellan and Gregory Krudysz: Concept-Based Tutoring System for on-Line Problem Centered Learning	71. Hanna Hänninen and Taina Hovinen: Chemical Analysis Service: Learning in Projects	249. Jyrki Laitinen and Timo Pieskä: Novel approach to organize higher education in regional units

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**Wednesday 1.8.2012 14:00-15:00 / POSTER SESSION, Chair: *Mikko-Jussi Laakso***

47. Clement Onime, James Uhomoibhi and Sandro Radicella: Issues of infrastructure and capacity building for enhancing Engineering Education in Developing Nations: A focus on Africa	96. Annika Brandt, Elina Palonen, Ville-Veikko Mäkelä, Juhani Soini, Tony Wahlroos and Rina Wahlroos: Molecular diagnostics laboratory (MDL) – collaboration between students and SMEs	126. Chandrasekar.V Chandra, Jaan Praks, Ari Sihvola, Tuija Pulkkinen and Dmitri Moisseev: Radar Engineering and Radar Meteorology Education partnership between Colorado State University, Aalto University, and University of Helsinki: An experiment in content delivery and pedagogy	167. Martin Lamos and Jiri Jan: Analysis of simultaneous EEG/fMRI data as doctoral study research	239. Ricardo de Andrade, Marcos Antonio de Carvalho Guedes, Armando Antonio Maria Laganá, Kleber Nogueira Hodel and João Francisco Justo Filho: Didactic kit for the study of CAN bus
85. Eduardo Montero, María Jesús González-Fernández, Fernando Aguilar, Fatima E. M. Alaoui and Jesús Marcos García-Alonso: The use of streaming video to support engineering student's learning in energy topics	108. J. Bryan Burrows-McElwain, I.K. Dabipi and Christopher Hartman: Integrating Human Factors Research into Undergraduate Coursework in Aerospace/Aviation: A Case Study in Pilot Cockpit Distraction by a Portable Electronic Device (PED)	138. Kari Lindström and Kristiina Meltovaara: A strategic partnership: developing a new approach to University-Industry collaboration	193. Clara de Oliveira: Pedagogical Analysis from Aalto University School of Chemical Technology at Highlights of mOT Integrative Educational Methodology	245. Vojislav Ilic: Tesla Turbine as a Student Learning Tool
86. Youngtae Lee, Hanwoo Kim and Jinsoek Park: A Study on the Development of Program Outcomes Assessment tool using Reflection Journal	115. Irina Belinskaya, Elena Ovchinnikova, Alexander Kartochkin and Valeriy Belyakov: Ecological and cultural engineering education in agricultural engineering education	145. Teijo Lahtinen, Arttu Salmela and Henri Koukka: Enhancing Engineering Education and University-Industry Collaboration by Simulation Tools	224. Piotr Kłosowski: Functioning and Development of Distance Education at Silesian University of Technology	Late Abstract: 114. M. J. Savelski, S. Farrell and C.S. Slater: Introducing Concepts of Life Cycle Assessment in the Chemical Engineering Curriculum through the Evaluation of Pharmaceutical Syntheses and Biodiesel Manufacturing
88. Tony Wahlroos, Jarno Pusa, Anna Sulkakoski and Niina Punelpuro: The lab of courage: student participation in business projects	123. Insook Kim, Dongchoul Kim and Juho Kim: Effective Teaching Methods for Capstone Design Courses : Case study	156. Kristiina Meltovaara and Juha Leimu: Facilitating innovation competences: Integrating business and engineering	227. He Lingsong, Wu Bo and Zhou Liping: Mechanical Engineering Practice Educational Center Operating by both University and Industry	

## TOPICAL SESSION SCHEDULE / UPDATE 2012-08-03, 07:00 AM EET

**Wednesday 1.8.2012 15:00-16:00 / PARALLEL SESSION 7**

Session	Integrating research and education	Student mentoring and tutoring	Technologies for teaching and learning	Learning environments	Curriculum design
Room	<i>Gamma</i>	<i>Delta</i>	<i>My</i>	<i>Omega</i>	<i>Sigma</i>
Chair	<b>Jouko Lehtonen</b>	<b>Eduardo Montero</b>	<b>Phil Picton</b>	<b>Peter Willmot</b>	<b>Larissa Fradkin</b>
15:00-15:20	229. Eusebio Jiménez López, Víctor Martínez Molina, Cristhian Ramón Uzeta Obregón, Saúl René Ontiveros Moroyoqui, Luis Andrés García Velázquez, Gabriel Luna-Sandoval, Luciano Vela Martínez and Juan Delfín Vázquez: About a systematization of the design process of original equipment	131. Azizan Zainal Abidin, Rosetta Ziegler and Raija Tuohi: Discovering the learning styles of engineering and non-engineering students	194. Outi Laitinen, Seppo Kuikka and Pekka Alho: The automation engineering students' knowledge development in a simulated work environment	90. George Gibbon: The "Knows" and "Doing" in Engineering Education	55. Josef Rojter: Contextualizing Fundamental Sciences into Engineering Curriculum
15:20-15:40	263. Galeno José Sena, Marco Aurélio Alvarenga Monteiro, Leonardo Mesquita, Maria Cecília França De Paula Santos Zanardi, Fábio Esteves Silva and Carlos Eduardo Da Silva Amorim: Engineering Students Involved in Activities to Motivate High School Students for Engineering Courses	162. Anja Hänninen, Tomi Ylikorpi and Aarne Halme: Best Practices for Efficient Student Tutoring	233. Breno Carmo and Renata Pontes: Web 2.0 and Collaborative Learning: An Application on Industrial Engineering Course	21. David Barbe: Residency Programs for Entrepreneurial Undergraduate Engineering Students	79. Hans Schjær-Jacobsen, Imad Abou-Hayt, David Ashworth, Marc Podzinski Jensen and Mads Peter Schreiber: Industrial Design as an Innovative Element in Engineering Education
15:40-16:00					



## TOPICAL SESSION SCHEDULE / UPDATE 2012-08-03, 07:00 AM EET

**Friday 3.8.2012 08:30-09:30 / PARALLEL SESSION 8**

Session	Student mentoring and tutoring	Technologies for teaching and learning	Learning environments	Curriculum design
Room	<i>Delta</i>	<i>My</i>	<i>Omega</i>	<i>Sigma</i>
Chair	<b>M. S. Stachowicz</b>	<b>Aulikki Holma</b>	<b>George Gibbon</b>	<b>Clara de Oliveira</b>
08:30-08:50	190. Sonya Coleman, Anne Hinds, Eric Nichols and Heather Sayers: Improving First Year Retention in Computer Science by Introducing Programming in Schools	200. Lars Reng: Development of an Artificial Intelligence Programming Course and Unity3d Based Framework to Motivate Learning in Artistic Minded Students	91. Osmo Eerola: "My best course in engineering" - Developing a course in project planning and requirements engineering for undergraduate students	40. Jorma Nevaranta: Teaching Strategy as a Modular Service Product in Comprehensive Course Development
08:50-09:10	202. Marcos Borges, Victor Bicalho, Daiane Rampinelli and Ciro Sobrinho: Project-based learning: the SAE Aero Design experience	236. Phil Picton: Teaching ultrasonics using spreadsheets	130. Merja Mäkelä and Maija San: Energy engineers through distance learning - Cooperative teaching and learning approaches	66. Tokio Abe: A Curriculum Improvement of MIS Course in College
09:10-09:30	25. Aharon Gero: Outstanding Female High School Pupils' Perception of Electrical Engineering – What Has Changed?	244. Klaus Wuersig: Selection of appropriate Programming Languages for Engineering Applications	140. Peter Willmot, Michael Bramhall and Keith Radley: An academic's toolkit for innovative project reporting using audio visual media.	92. Claudia Daems: A Bridge between Engineering and Language Learning: Automation and German in an Online Course

## TOPICAL SESSION SCHEDULE / UPDATE 2012-08-03, 07:00 AM EET

**Friday 3.8.2012 09:40-10:40 / PARALLEL SESSION 9**

Session	Assessment of learning outcomes	University-industry collaboration	Learning environments	Curriculum design
Room	<i>Delta</i>	<i>My</i>	<i>Omega</i>	<i>Sigma</i>
Chair	<b>Juha Leimu</b>	<b>James Uhomobhi</b>	<b>Sebastien Lafond</b>	<b>Claudia Daems</b>
09:40-10:00	61. Taru Penttilä, Liisa Kairisto-Mertanen and Adam Jagiello-Rusilowski: Validating social competencies as learning outcomes of innovation pedagogy –experiences in Finland and Poland	58. Seppo Niemi, Pekka Nousiainen and Mika Laurén: Skilled engineers through internal combustion engine research	141. Patrick Purcell: Innovations in the Civil Engineering curriculum at University College Dublin	173. Ville Taajamaa and Kati Vilonen: The future of engineering education?
10:00-10:20	82. Elena Trotskovsky, Nissim Sabag, Shlomo Waks and Orit Hazzan: Student Achievements in Solving Problems Using Models in Electronics	166. Daniel Bailey and Jonathan Adams: Northants Engineering Training Partnership (NETP), a model for sustainable, Industry - University Engagement	204. Marcos Antonio de Carvalho Guedes, Felipe Serafim Albaladejo, Armando Antonio Maria Laganá and João Francisco Justo Filho: Didactic kit for the study of intake air system in internal combustion engine	174. Roelof van Silfhout, Ian Cotton, Bruce Grieve, Alexander Lanzon, Alasdair Renfrew and Andrew Gibson: Introduction of student initiated and themed multi-student projects
10:20-10:40	106. Ibibia Dabipi, Christopher Hartman and J. Bryan Burrows-McElwain: Design of a Picavet System that Supports a Remotely Controlled Pan and Tilt Digital Camera Equipment	192. Timo Poranen, Toni Pippola, Matti Vuori, Ville Kairamo and Jarmo Tuominiemi: Teaching innovation projects in universities at Tampere	176. Walnorio Ferreira, Diogo Rossi, Vitor Gonçalves and Augusto Badke-Neto: Pedagogical approach for the Structural Stability	185. Larissa Fradkin: Issues surrounding teaching pre-calculus to engineering freshers

## TOPICAL SESSION SCHEDULE / UPDATE 2012-08-03, 07:00 AM EET

**Friday 3.8.2012 11:00-12:00 / PARALLEL SESSION 10**

Session	Assessment of learning outcomes	University-industry collab. & Curriculum Design	Multicultural engineering and mobility	Learning environments
Room	<i>Delta</i>	<i>My</i>	<i>Omega</i>	<i>Sigma</i>
Chair	<b>Taru Penttilä</b>	<b>Kristiina Meltovaara</b>	<b>Motomu Takeshige</b>	<b>Louis Nadelson</b>
11:00-11:20	111. Kadri Umbleja, Vello Kukk, Martin Jaanus, Andres Udal and Boris Gordon: Analyzes of Competence Based Approach to Learning	195. James Uhomoibhi and Margaret Ross: Engineering Professional Development and Economic Growth: Issues of Collaboration between Academic, Industry and Professional Organisations for the Benefit of Employment and Sustainability	53. Anna Friesel: Experiences with exchange students at the Copenhagen University College of Engineering working in international project teams	237. Riikka Kulmala and Marika Säisä: Promoting knowledge sharing and innovativeness in e-learning environment
11:20-11:40	9. Desmond Adair and Martin Jaeger: On Moving from Structured Oral Assessments to Computer-Aided Assessments for Vocational Training	241. Vinícius A. A. Melo, Geraldo M. Lopes, Giuliano S. Olguin and Patrícia H. L. S. Matai: Information Technology in the computer engineering curriculum analysis among undergraduate institutions	134. Patric Granholm, Aulikki Holma, Pia Lindgren and Olli Mäkinen: The Cosmos Project – an attempt to increase the employability of foreign students	270. Vladimir Nikulin and Victor Skormin: Worldwide-accessible 1.25 Gbps advanced laser communication laboratory
11:40-12:00	184. Lise Busk Kofoed and M. S. Stachowicz: Assessment of Students Project – Numbers, Letters, Words.	246. Mika Luimula and Janne Roslöf: Innovation Competences in Game Technology Education	144. Sebastien Lafond and Cecilia Brunel: Double Master Degree Programme: Enhancing Multicultural Engineering and Mobility between France and Finland	271. Adelson Carvalho, Dante Barone and Milton Zaro: MECATAS – Teaching and Learning Model for Control and Automation Engineering based on the Meaningful Learning Theory