Sessions – Titles, Authors and Chairs

OPENING SESSION

PLENARY SESSION 1 - ENGINEERING FOR A HUMANITARIAN WORLD
Invited Speakers: Kamel Ayadis, Luiz Carlos Scavarda do Carmo, Xila Liu

SESSION M1A - REDISCOVERING THE FOUNDATIONS – Engineering and the Humanities (I)
Chair: Cornelia Connolly (University of Limerick, Ireland)

HUMANISTIC ASPECTS IN THE EDUCATION OF ENGINEERS
Andrzej Jakubiak

THE NEWCOMERS: HUMANITIES IN ENGINEERING EDUCATION
Maria Teresa Russo

ENGINEERING STUDENTS IN NEEDED COMMUNITIES: AN ENGINEERING EDUCATION TOOLS
Samuel Marcio Toffoli, Douglas Lauria, Maria Inês Piffer, Antonio Luis de Campos Mariani

INTRODUCING HUMANITIES ASPECTS THROUGH ENGLISH LANGUAGE TEACHING IN ENGINEERING CURRICULA
Anne McKay

DO ENGINEERING STUDENTS NEED SUSTAINABLE DEVELOPMENT COURSES?
Fernando Torgal, Said Jalali

INTERVENTIONS TO PROMOTE DEGREE COMPLETION IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS
Sylvia Sorkin, Penelope ReVelle, Andrew Beiderman, Tejan Tingling

SESSION M1B - REDISCOVERING THE FOUNDATIONS – Technology and Society
Chair: Marek Dollár (Miami University, USA)

THE DRAWING LIKE A MODIFICATION OF LIFE WAY
Marina Unica Díaz Morales, Marizilda Menezes dos Santos

TEACHING DRAWING IN ENGINEERING COURSES IN SANTA CATARINA STATE – BRAZIL
Clovis Neumann

ENVIRONMENT, INDIGENOUS TECHNOLOGY VIS-À-VIS STATUS OF TEACHERS IN ENGINEERING EDUCATION: AN EMPIRICAL SURVEY OVER INDIAN TECHNO-PEDAGOGIC FABRIC
Rajarshi Roy, Anjana Paira

NECESSARY KNOWLEDGE FOR SOCIAL RESPONSIBILITY OF SCIENTISTS AND ENGINEERS
Henk Zandvoort

SCIENCE FICTION IN ENGINEERING INSTRUCTION: THE FINAL FRONTIER?
Albert Segall

PET- A BRAZILIAN TUTORIAL EDUCATION EXPERIENCE
Joao Hiluy, Joao J. Hiluy, Sonia A. Castelo Branco

SESSION M1C - PARTNERSHIP – International Collaboration
Chair: Melora Sundt (University of Southern California, Rossier School of Education, USA)

STRATEGIES FOR ENGINEERING EDUCATION UTILIZING GLOBAL PROJECT MANAGEMENT PROTOCOL
Bahman Motlagh, Michele Shahir-Motlagh, Ronald Eaglin

DEVELOPMENT OF THE MASTERS OF SCIENCE DEGREE IN ENVIRONMENTAL MANAGEMENT AND ENGINEERING AT THE EURASIAN NATIONAL UNIVERSITY, KAZAKHSTAN: A GLOBAL PARTNERSHIP
Tim J. Ward, Abdymanapov Sarsengali Abdygalievich, Andrew Wilson, Shaikhin Serik Murzakhmetovich, Greg Gleason
INTERNATIONAL EDUCATIONAL PROJECT MANAGEMENT: COORDINATOR'S EXPERIENCE
  Tomáš Zeman, Jaromír Hrad, Petra Samková
EDUCATIONAL PROJECT COUNTDOWN
  Petra Samková, Jaromír Hrad
FROM IVORY TOWER TO FANTASY CASTLE - A DESIGN CASE STUDY OF INDUSTRIAL COLLABORATION
  Randle Turner, Freidemann Schaber, Stewart Betts
FIRST GLOBAL CLINICS IN BIOTECHNOLOGY: A GLOBAL PARTNERSHIP BETWEEN INDUSTRY AND ACADEMIA
  Rosa Buxeda, Anthony Bright, Lorenzo Saliceti-Piazzia, Thomas Kelleher, Anthony Tran

SESSION M1D - PARTNERSHIP – University/Industry/Government and International Collaboration
Chair: Charles Bland Tomkinson (University of Manchester, UK)

  ESTABLISHING A COUNTRY-WIDE IMAGE DISPLAY PROGRAM FOR ENGINEERING EDUCATION
    Long-Sun Huang, An-Bang Wang, San-Liang Lee, Neng-Chung Hu, Yeong-Shin Tarng
  ICT IN THE ENGINEERING AND MANAGEMENT
    Juan Villalvazo-Naranjo, David Limón-Núñez, Luis-Hector Quintero-Hernández
  THE INVESTMENTS OF THE PECS WORLD HERITAGE AND THE RECONSTRUCTION OF PMMK AS STUDENT PROJECT WORK
    József Mecsi, Tibor Kukai
  INTERNATIONAL EDUCATION COOPERATION IN THE AREA OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE
    Pavel Santarius, Petr Krejci, Zdenka Chmelikova, Ivo Vondrak
  INTERNATIONAL QUALITY UP WITH CDIO INITIATIVE
    Juha Kontio

SESSION M1E - PARTNERSHIP – Networking
Chair: Luis M. Sanchez Ruiz (Universidad Politecnica de Valencia, Spain)

  DEVELOPING AN INTERDISCIPLINARY AND MULTINATIONAL SOFTWARE ENGINEERING CURRICULUM
    Wojciech Grega, Andrew J. Kornecki, Miroslav Sveda, Jean-Marc Thiriet
  EDUCATIONAL PROJECT PARTNERSHIP: PROBLEMS AND WAYS OF SOLUTION
    Elena Kuzmicheva, Olga Dolinina
  A NOVEL ENGINEERING SYSTEMS APPROACH FOR BIOENGINEERING EDUCATION: THE MIT–PORTUGAL COLLABORATION
    JunJay Tan, Dava Newman, Joaquim Cabral, Manuel Mota, Manuel Nunes da Ponte
  CELSIUS NETWORK
    Marisa De Giusti, Ariel Lira, Ariel Sobrado, Fernando Inafuku
  HOW LANGUAGE LEARNERS CAN DEVELOP COMMUNICATION SKILLS IN ENGLISH: AN ANALYSIS OF THE STRUCTURAL AND INTERACTIONAL ASPECTS OF TELECONFERENCES IN THE IDEELS TELEMATICS SIMULATION PROJECT
    Penny MacDonald, David Perry
  IT EDUCATION AND COMPETITIVENESS IN DEVELOPING COUNTRIES: THE NEW SCENARIO IN ARGENTINA
    Uriel Cukierman, Juan Palmieri, Jose Virgili

SESSION M1F - SPECIAL SESSION S13 – Technology Enhanced Engineering Education
Chair: Malgorzata S. (Gosha) Zywno (Ryerson University, Canada)

  INTEGRATED SENSORS: EXPANDING THE BOUNDARIES OF MICROSYSTEM DESIGN FOR MULTIDISCIPLINARY CUSTOMERS
    Francisco Javier Ramirez-Fernandez, João Francisco Justo, Walter Salcedo, Elisabete Galeazzo, Nathalia Peixoto
  TO THE QUESTION ABOUT THE COGNITIVE PROCESSES IN THE SYSTEM "OPERATOR-COMPUTER COMPLEX"
Arkadiy Slobodyanuk, Andjey Gavdzhik, Aliciya Gavdzhik

QUESTIONS AND ISSUES IN REALIZING THE ENGINEERING STUDIES IN SPRINT MODEL

Elżbieta Grześciczyk

THE COLLABORATIVE WORK AND PRODUCT DEVELOPMENT: A DIDACTIC EXPERIENCE IN UNDERGRADUATE COURSES

Roberta Pereira Nunes Nunes, Marcos Martins Borges, Romir Soares de Souza Filho

DEVELOPMENT OF LEARNING OBJECTS FOR THE SUPPORT OF PRODUCT DESIGN AND MANUFACTURING PROCESSES KNOWLEDGE CONSTRUCTION

Marcos Martins Borges, Roberta Pereira Nunes

SECOND HARMONICALLY PUMPED MOSFET MIXER WITH ZERO-IF

Osman Palamutçuoğlu, Mehmet Kayhan

SESSION M1G - SPECIAL SESSION S14 – Online Experimentation in Engineering Education
Chair: Bernardo Wagner (Germany)

PROFESSIONAL LEARNING FROM REMOTE SITES
Bernardo Wagner

CHALLENGES IN REMOTE LABORATORY SUSTAINABILITY
Christophe Salzmann, Denis Gillet

DEVELOPMENT OF TECHNOLOGY ENHANCED VIRTUAL LABORATORIES FOR ENGINEERING EDUCATION BASED ON MATHEMATICAL MODELS
Konstantinos Th. Mavrommatis, Alexander Babich

DEFINING AND PERFORMING EXPERIMENTS IN VIRTUAL LABORATORIES
Sebastián Dormido Bencomo, Francisco Esquembre Martínez, Gómez Farias Castro

E-LEARNING AND RESOURCE SHARING USING A CHEMICAL PROCESS SIMULATOR APPLIED IN ENGINEERING EDUCATION – A FEEDBACK
Viet Hai Nguyen, Konrad Szafnicki

MOBILE SYSTEM FOR VIDEO STREAMING OF LECTURES
Jaroslav Hájek, Tomáš Vrba

A CASE STUDY ON THE PATH FROM ACADEMIC PRACTICES TO COMMERCIALIZATION IN STUDENT PROJECTS
Gunnar Andersson, Sissel Larsen, Frode Aamodt

SESSION M1I – ENGINEERING EDUCATION IN THE PORTUGUESE SPEAKING COUNTRIES (I)

ORDEM DOS ENGENHEIROS DE ANGOLA
Representative from Ordem dos Engenheiros de Angola

CONFÉ – CONSELHO FEDERAL DE ENGENHARIA, ARQUITECTURA E AGRONOMIA
Representative from CONFÉ

ORDEM DOS ENGENHEIROS DE CABO VERDE
Representative from Ordem dos Engenheiros de Cabo-Verde

SESSION M2A - REDISCOVERING THE FOUNDATIONS – The Basic Sciences
Chair: Ana Maria Pavani (Pontifícia Universidade Católica do Rio de Janeiro, Brazil)

TEACHING FUNDAMENTAL SCIENCE IN UNDERGRADUATE ENGINEERING COURSE
Josef Röjter

EULER’S TABLES, THE ORIGINS OF STRUCTURAL ANALYSIS, AND SCIENCE’S LINGUA FRANCA IN THE AGE OF REASON
Anísio Andrade, Filipa Medeiros, Nair Soares, Paulo Providência

WHY DOES ONE NEED TO BE TAUGHT ENGINEERING LOGIC?
Alexander Klimenko

RECRUITING AND RETAINING STUDENTS INTO ENGINEERING SCIENCES: THE ROLE OF INTRODUCTORY COURSES
Marie Dahleh

NUGGETS OF MECHANICAL ENGINEERING – REVISIT OF THE FREE-BODY DIAGRAM ANALYSIS AND FORCE FLOW CONCEPT
Jay Tu
SESSION M2B - REDISCOVERING THE FOUNDATIONS – Electricity, Electronics and Control  
Chair: George Banky (Swinburne University of Technology, Australia)

MOVING AVERAGE AND SAVITZKI-GOLAY SMOOTHING FILTERS USING MAHCAD  
Guinon Jose Luis, Ortega Emma, Garcia-Anton Jose, Perez-Herranz Valentin

REVISITING MATRIX THEORY AND ELECTRIC CIRCUIT ANALYSIS  
Rogelio Palomera-Garcia

IMPLICATIONS OF JP2K CODING STANDARD FOR MRI IMAGE BASED ON A FEATURE OF REGION OF INTEREST IN TELEMEDICINE  
Pervez Akhtar, Muhammad Iqbal Bhatti, Tariq Javid Ali, Muhammad Abdul Muqeet

ANALYZING BREADTH AND DEPTH OF ELECTRICAL ENGINEERING PROGRAM IN GCC REGION UNIVERSITIES  
Qurban Memon

NEW COMPETENCIES FOR CONTROL ENGINEERS TO MEET THE MARKET DEMANDS IN CONTROL SYSTEMS  
Mariana Hentea, Harpal Dhillon

SESSION M2C - NEW APPROACHES AND TOOLS – e-Learning (I)  
Chair: António José Mendes (University of Coimbra, Portugal)

LEARNING ROADMAPS FOR HIGHER EDUCATION  
Miguel Oliveira, J. Artur Serrano, A. Manuel de Oliveira Duarte

INTEGRATION OF E-LEARNING ELEMENTS WITH ENGINEERING EDUCATION  
Renata Wagnerová, Lenka Landryova

USING AN ELECTRONIC VOTING SYSTEM TO ENHANCE LEARNING AND TEACHING  
Mark Russell

DOES WEB-BASED AUTOMATIC FEEDBACK IMPROVE LEARNING BEHAVIOR AND EXAMINATION GRADES? AN EXPERIMENTAL STUDY  
Reidar Kvadsheim, Mari Mehlén, Harald Øyen Kittang

LEARNING OBJECTS: AN APPROACH IN ENGINEERING EDUCATION IN A COGNITIVE PERSPECTIVE.  
Régio Pierre da Silva, Tânia Luisa Koltermann da Silva, Fábio Gonçalves Teixeira

SESSION M2D - REDISCOVERING THE FOUNDATIONS – Mechanics  
Chair: Chandra Bhuta (School of Architectural, Civil and Mechanical Engineering, Victoria University, Australia)

TIME AND ENTROPY IN THE FOUNDATIONS OF MECHANICS  
Roberto Assumpção

AN INTERACTIVE ONLINE COURSE ON ENGINEERING STATICS  
Anna Dollár, Paul Steif

AN INNOVATIVE METHODOLOGY FOR THE CHARACTERISTIC MINING ON THE CONCEPTUAL MECHANISM DESIGN  
Dar-Zen Chen, Chou-Chih Yu

METHODOLOGY TO USE MULTIMEDIA APPLICATIONS AND MOBILE DEVICES WHEN TEACHING STRUCTURAL ANALYSIS.  
João Batista Bottentuit Junior, Rafael Doriño Negretr, Clara Pereira Coutinho

SIMULATION OF A SHIP WITH PARTIALLY FILLED TANKS ROLLING IN WAVES BY APPLYING MOVING PARTICLE SEMI-IMPLICIT METHOD  
Jen-Shiang Kouh, Hung-Pin Chien, Chun-Chung Chang, Yen-Jen Chen

SESSION M2E - NEW APPROACHES AND TOOLS – e-Learning (II)  
Chair: Angelo J. Perna (New Jersey Institute of Technology, USA)

ENHANCED LEARNING THROUGH BLENDED LEARNING. EDUCATIVE INNOVATION AT UNIVERSITAT DE VALENCIA  
Paloma Moreno Clari, Vicente Cerverón Lleó

DEVELOPMENT OF AN INTELLIGENT ANSWERING MACHINE BASED ON LMS KNOWLEDGE
SESSION M2F - WHAT DEGREES FOR WHAT JOBS? – The Bologna Process (I)
Chair: Vojislav Ilic

THE BOLOGNA PROCESS FOR AUSTRALIA?
Vojislav Ilic

ANALYZING THE OBSTACLES FOR THE ACADEMIC AND ORGANIZATIONAL CHANGE IN UNIVERSITIES
Mónica Edwards, Luis M. Sánchez-Ruiz, Enrique Ballester-Sarrias

STUDENTS’ GUIDE AS A TOOL FOR ADAPTING TO EUROPEAN HIGHER EDUCATION AREA (EHEA) CHALLENGES
Isabel Tort Ausina, Concepción López González, Rosa Martínez Sala, Jesús Mené Aparicio

WILL THE FIVE-YEAR ENGINEERING DEGREE SURVIVE IN ARGENTINA?
Alberto Dams, Carlos Godfrid, Carlos Alberto Raffo

POTENTIAL ROLE OF WELL-ROUNDED CASE STUDIES IN THE ENGINEERING EDUCATION
Peter Scharle

THE BOLOGNA PROCESS: WHAT SHOULD AND SHOULD NOT BE DONE
Fernando Torgal, Said Jalali

SESSION M2G - NEW APPROACHES AND TOOLS – Libraries and Information Management
Chair: Jerzy Moscinski (The Silesian University of Technology, Poland)

THE ROLE OF DIGITAL LIBRARIES IN HIGHER EDUCATION
Ana Pavani

CELSIUS BLOODHOUND - AUTOMATIZING SEARCHING AND FETCHING RECORDS FROM LIBRARY SERVERS
Marisa De Giusti, Gonzalo Villarreal

KNOWLEDGE INTEGRATION IN CIVIL ENGINEERING: A MODEL FOR INFORMATION STRUCTURE
Maria Aparecida Cintra, Ricardo Naveiro

USE OF INFORMATION RESOURCES IN WRITING UP DISSERTATION: A CITATION ANALYSIS
Szu-chia S. Lo

AN ASSESSMENT INFORMATION SYSTEM FOR A K-12 HANDS-ON PROGRAM: THE PEQUENOS CIENTÍFICOS CASE
José Tiberio Hernandez, Carlos Alberto Olier Henao, Mauricio Duque

DISTANCE LEARNING PLATFORM AT SILESIAN UNIVERSITY OF TECHNOLOGY
Piotr Klosowski

SESSION M2H - NEW APPROACHES AND TOOLS – Lifelong Learning in Engineering
Chair: Denis Gillet (Swiss Federal Institute of Technology, Lausanne, Switzerland)

NEXT GENERATION OF ONLINE TUTORIALS: FINDING TECHNICAL INFORMATION AT PURDUE UNIVERSITY
Amy Van Epps, Megan Nelson, Michael Fosmire, Bruce Harding

A SYSTEM FOR PERIODIC EVALUATION OF CONTINUED EDUCATION PROGRAMS WITH THE AID OF THE QFD METHODOLOGY
Paulo Kaminski, Eduardo Ferreira

SECOND CHANCE LEARNERS, SUPPORTING ADULTS LEARN COMPUTER PROGRAMMING
SESSION M2I – ENGINEERING EDUCATION IN THE PORTUGUESE SPEAKING COUNTRIES (II)
ORDEM DOS ENGENHEIROS DE MOÇAMBIQUE
Representative from Ordem dos Engenheiros de Moçambique
ORDEM DOS ENGENHEIROS DE PORTUGAL
Representative from Ordem dos Engenheiros de Portugal

PLENARY SESSION 2 - ENGINEERING AT THE CROSS-ROADS OF PROFESSIONS AND CULTURES
Invited Speakers: George Stephanopoulos, Marçal Griolo, Nigel Cross

SESSION T1A - REDISCOVERING THE FOUNDATIONS – Environment and Health
Chair: Aisling O’Sullivan (University of Canterbury, New Zealand)

BALANCING MIDDLE EARTH: INTEGRATING ECOLOGICAL SUSTAINABILITY AND EFFECTIVE RESEARCH INTO A PROFESSIONAL ENGINEERING DEGREE IN NEW ZEALAND
Aisling O’Sullivan, Michael O’Donoghue
ENVIRONMENTAL ENGINEERING CURRICULUM AT THE TECHNICAL UNIVERSITY OF CRETE, GREECE
Dionissios Mantzavinos, Evan Diamadopoulos
ENVIRONMENTAL IMPACT ASSESSMENT TEACHING IN ENVIRONMENTAL ENGINEERING
Luis Enrique Sánchez, Ana Claudia Neri, Jose Aquiles Baesso Grimoni
ENGINEERING – A HEALTHCARE PROFESSION IN THE TWENTY FIRST CENTURY
Eugene Coyle, James Condron, John McGrory, Mike Murphy, Damon Berry
USING PRODUCT LIFECYCLE MANAGEMENT TOOLS AND STRATEGIES TO PREVENT MEDICATION ERROR WITHIN A HOSPITAL SETTING
Daretta Henry

SESSION T1B - REDISCOVERING THE FOUNDATIONS – New Competencies: Soft Skills, Attitudes, and Values (I)
Chair: Kathleen M. Leonard (University of Alabama in Huntsville, USA)

PROJECT LED EDUCATION IN ENGINEERING COURSES: COMPETENCIES TO INCLUDE
Natascha van Hattum-Janssen, Rosa Maria Vansconcelos
PRAGMATIC ASPECTS OF ENGLISH FOR ENGINEERING
Milena Krhutova
A LEONARDO DA VINCI PROJECT: BLENDED LEARNING METHODS IN VOCATIONAL EDUCATION, JUST IN TIME – REBLENDING
Claudia Hallikainen
INTEGRATING ENGINEERING DESIGN HEURISTICS INTO A FIRST YEAR ENGINEERING COURSE TO ENHANCE PROBLEM SOLVING AND TEAM BUILDING SKILLS
Kathleen Leonard
A POSSIBLE WAY OUT OF THE DILEMMAS OF THE SCIENCE-CORE REQUIREMENTS IN FIVE-YEAR ENGINEERING COURSES
Waldemar Hachich

SESSION T1C - REDISCOVERING THE FOUNDATIONS – Engineering and the Humanities (II)
Chair: Albert Segall (Penn State University, USA)
GENDER AND PROGRAM DIFFERENCES IN LEARNING STYLES OF STUDENTS IN TECHNOLOGY-FOCUSED VS. HUMANITIES PROGRAMS
Malgorzata Zywno, Mary Stewart

THE KHOUSE PROGRAMME REVISITED: BUILDING NEW COMPETENCIES IN THE KHOUSE COMMUNITY
Marisa Lucena, Miriam Lerner, Lucia Chibante, Vania Moreira

THE INDUSTRIAL DEMOCRACY AND IMPLEMENTING TOOLS FROM QUALITY CIRCLES TO RESOURCE GROUPS
Hong Wu, Frode Ramstad Johansen, Gunnar Andersson

CIVIL ENGINEER – ARCHITECT. THE EXPERIENCE OF THE UNIVERSIDADE DE SÃO PAULO-BRASIL
Francisco Ferreira Cardoso, Henrique Lindenberg Neto, Heliana Comin Vargas

SCIENTIFIC PERSPECTIVE FOR FUTURE RESEARCH WORK IN COMMUNICATION SYSTEMS FOR PEOPLE WITH NEURO-MOTOR DISABILITY
Anca Cehan, Irina Radinschi, Vlad Cehan

SESSION T1D - REDISCOVERING THE FOUNDATIONS – Management and Engineering
Chair: Artur Ferreira da Silva (Department of Information Systems and Computer Science, Instituto Superior Técnico, Technical University of Lisbon, Portugal)

INNOVATION AND ENTREPRENEURSHIP: MERGING ENGINEERING AND BUSINESS
Patrick Patterson, Ronald Mitchell

AN EXAMINATION OF LEADER REPORT ABOUT THE IMPROVEMENT OF LEADER’S DUTIES
Tetsuro Furukawa, Masakatsu Matsuishi, Shigeo Matsumoto, Kazuya Takemata, Taketo Yamakawa

EDUCATORS ARE FROM MARS, ENTREPRENEURS ARE FROM VENUS: THE GAP BETWEEN THEORY AND PRACTICE IN ENTREPRENEURSHIP EDUCATION
Jose Antonio Lerosa de Siqueira, Celso Masatoshi Furukawa

A CASE FOR ALTERNATIVE APPROACHES FOR BETTER EDUCATION IN OH&S IN CONSTRUCTION
Chandra Bhuta, Guomin (Kevin) Zhang, Conrad D'Cruz

A REAL-LIFE SUPPLY CHAIN GAME TO ENHANCE PROBLEM BASED LEARNING FOR INDUSTRIAL ENGINEERING STUDENTS
Jianguo Wang, Yew Chan Fong

SESSION T1E - REDISCOVERING THE FOUNDATIONS – Miscellaneous
Chair: James Uhomoibhi (University of Ulster, UK)

GROWING A CULTURE OF INTELLECTUAL INQUIRY IN ENGINEERING EDUCATION AND RESEARCH
Elisabeth McGrath, Keith Sheppard

ENGINEERING STUDENT ATTENDANCE AT LECTURES: EFFECT ON EXAMINATION PERFORMANCE
Patrick Purcell

CONSTRUCTING A FOREIGN LANGUAGE STANDARD FOR TECHNICALLY-ORIENTED UNIVERSITIES
Ludmila Neuwirthova

STUDENTS’ INTEGRATION IN A TECHNICAL DEGREE THROUGH A TUTORIAL PROGRAM
Isabel Tort Ausina, Fernando Fargueta Cerdá, Mª Luisa Navarro García, Inmaculada Tort Ausina

HARNESSING INTERNAL RESOURCES: STRENGTHENING ENGINEERING EDUCATION BY PARTNERING WITH AN EDUCATION SCHOOL
Melora Sundt, Michael Khoo

SESSION T1F - PARTNERSHIP – Student Mobility and Exchange
Chair: Henk Zandvoort (Dept of Technology, Policy and Management, Delft University of Technology, The Netherlands)
TEAMWORK AS A TOOL FOR SUCCESSFUL EXPERIENCE FOR EXCHANGE STUDENTS  
Anna Friesel

THE PEDAGOGIC IMPORTANCE OF INTERNATIONAL EXCHANGES OF STUDENTS AND TEACHERS  
Drago Hercog

IMPROVING STUDENT ACHIEVEMENT THROUGH OVERSEAS EXPERIENCE  
David Edwards

SOCRATES THEMATIC NETWORKS: CONTRIBUTIONS TO MUTUAL KNOWLEDGE AND RECOGNITION OF ENGINEERING EDUCATION IN EUROPE  
Claudio Borri, Elisa Guberti, Francesco Maffioli

ACCOMMODATING THE DIVERSE TECHNICAL INTERESTS OF FOREIGN EXCHANGE STUDENTS THROUGH PARTICIPATION IN MEMS AND MICRO-ROBOTIC RESEARCH PROJECTS  
Eniko Enikov, Bradley Nelson, Geon Seo

SESSION T1G - PARTNERSHIP – Staff Mobility and Exchange  
Chair: Yiming (Kevin) Rong (Worcester Polytechnic Institute, USA)

ACADEMIC PARTNERSHIPS WITH ASIAN UNIVERSITIES  
Paul Wheeler, Tamal Bose

FACULTY EXCHANGE, ONE APECT OF INTERNATIONAL COOPERATION IN ENGINEERING EDUCATION  
Omar Zia

AN INTERNATIONAL NETWORK FOR COLLABORATION IN ENGINEERING AND SCIENCE EDUCATION  
Roy Crosbie, Dietmar Moeller, David Murray-Smith, Hamid Vakilzadian, Bernard Schroer

THE FIRST 20 YEARS OF THE PUERTO RICO TRANSPORTATION TECHNOLOGY TRANSFER CENTER IN THE TRAINING OF ENGINEERS AND TRANSPORTATION OFFICIALS  
Benjamin Colucci, Felipe Luyanda, Alberto Figueroa

STAFF MOBILITIES - THE EXPERIENCE LECTURERS AND FUTURE OF THIS ACTIVITY  
Milada Hlaváčková, Dagmar Juchelkova

SESSION T1H - THE CHALLENGES OF RESEARCH – Electrical Engineering and Robotics  
Chair: Manfred Andrie (Cologne University for Applied Sciences, Germany)

SENSORLESS THREE-PHASE INDUCTION MOTOR DIRECT TORQUE CONTROL USING SLIDING MODE CONTROL STRATEGY LABORATORY SET-UP FOR MOTOR SPEED CONTROL TEACHING  
Marcos V. Lazarini, Ernesto Ruppert Filho

REAL–TIME SIMULATIONS OF ELECTRICAL MACHINE DRIVES WITH HARDWARE-IN-THE-LOOP  
Osama Mohammed, Nagy Abed, S Ganu

BRINGING RESEARCH ISSUES INTO LAB SCENARIOS ON THE EXAMPLE OF SOC TESTING  
Raimund Ubar, Artur Jutman, Sergei Devadze, Heinz-Dietrich Wuttke

PING: AN AFFECTIVE ROBOT USED IN LEARNING BY PLAYING  
G.-W. Wu, In-Hang Chung, Po-Tsung Ku, Lu-Tsou Yeh, Jwu E Chen

SEEDING ENQUIRY-BASED LEARNING IN ELECTRICAL AND ELECTRONIC ENGINEERING: CASE STUDY 2 – ROBOTICS  
Norman Powell, Alasdair Renfrew, Peter Hicks, William Truscott, Brian Canavan

iNEER WORKSHOP - PLANETARY-SCALE COMPUTING AND CYBERINFRASTRUCTURE FOR ENGINEERING AND SCIENCE EDUCATION  
Lueny Morell, Martina Trucco, Rick McGeer, David Chang

SESSION T2A - PARTNERSHIP – Practical Placement in Industry and Internships  
Chair: Peter Willmot (Loughborough University, UK)

PRACTICAL PLACEMENTS SUPPORTED BY EUROPEAN PROGRAMS
SESSION T2B - REDISCOVERING THE FOUNDATIONS – New Competencies: Soft Skills, Attitudes, and Values (II)
Chair: Sheryl A Sorby (Michigan Tech University, USA)

TEACHING SYSTEMS THINKING TO ENGINEERING UNDERGRADUATES
Joseph Sussman

AN INTER-DISCIPLINARY PROBLEM-BASED APPROACH TO EDUCATING ENGINEERS IN SUSTAINABLE DEVELOPMENT
Bland Tomkinson, Helen Dobson, Rosemary Tomkinson, Charles Engel

MECHANICAL ENGINEER AS A TECHNICAL PROBLEM SOLVER
Otakar Dokoupil

PARALLEL SOFTWARE ENGINEERING STUDENT PROJECTS
Juha Taina, Kimmo Simola

CONTROLLING TECHNOLOGY: ENGINEERING EDUCATION IS NOT A VIRTUAL REALITY GAME
George Gibbon

SESSION T2C - NEW APPROACHES AND TOOLS – Software and Computer Engineering
Chair: John Anthony Rossiter (University of Sheffield, UK)

BEHAVIOR PATTERN MINING DURING THE EVALUATION PHASE IN AN E-LEARNING COURSE
Bernardete Ribeiro, Alberto Cardoso

A NOVEL SOFTWARE ARCHITECTURE FOR PROJECT-ORIENTED E-LEARNING WITH LEARN2CONTROL
Marten Völker, Thomas Tometzki, Christian Blichmann, Ernesto Elias-Nieland, Sebastian Engell

TEACHING SOFTWARE ARCHITECTURE QUALITY BASED ON RUN-TIME METRICS
Renato Manzan de Andrade, Reginaldo Arakaki

APPLICATION OF SOFTWARE ENGINEERING TECHNIQUES TO THE ADVANCED LABORATORY OF THE COOPERATIVE COURSE
Jorge Luís Risco Becerra, Selma Shin Shimizu Melnikoff, José Eduardo Morello Lobo, Beatriz Terezinha Borsoi

THE TEACHING OF DATA STRUCTURES COURSE FOR COMPUTER SPECIALTY
Yanqin Zhu

EDUCATIONAL SIMULATION OF THE RISC PROCESSOR
Marc Jaumain, Michel Osée, Aliénor Richard, Alexis Vander Biest, Pierre Mathys

SESSION T2D - NEW APPROACHES AND TOOLS – Teaching Strategies
Chair: Andrezej Szlek (Silesian University of Technology, Poland)

EDUCATIONAL OBJECTIVES AS A SYSTEM TOOL OF ENGINEERING PEDAGOGY AND MANAGEMENT
Pavel Andres, David Vaněček, Dana Dobrovská, Antonín Pokorný
OPTIONAL ACTIVITIES AS A WAY TO IMPROVE STUDENT ENGAGEMENT AND ACADEMIC ACHIEVEMENT IN A LARGE ENGINEERING CLASS
Malgorzata Zywno

PRE-LECTURE ASSIGNMENTS - A METHOD FOR IMPROVING LEARNING IN ENGINEERING EDUCATION
Samuli Kolari, Carina Savander-Ranne

ISSUES IN CAPTURING THE CLASSROOM EXPERIENCE: LESSONS FROM THE TRENCHES
André Martins, Maria Rentróia-Bonito, Tiago Guerreiro, Joaquim Jorge

MODELS IN TEACHING – NEW POSSIBILITIES
Krzysztof Tytkowski

STUDENT’S AUTONOMOUS ACTIVITIES IN MULTIDISCIPLINARY REGISTERS LEARNING
Fernando Fargueta-Cerdá, Rosa Martínez-Sala, Inmaculada Tort-Ausina, Cristina Tudela-Andreu

SESSION T2E - NEW APPROACHES AND TOOLS – ICT and Multimedia Tools
Chair: Paulo Carlos Kaminski (Escola Politécnica da Univ. de São Paulo - Mechanical Engineering Department, Brazil)

AUDIO FEEDBACK FOR THE IPOD GENERATION
Anne Nortcliffe, Andrew Middleton

DISTANCE EDUCATION TOOLS FOR ENGINEERING
Lucy C. Morse

COLLABORATIVE NETWORKED TEACHING AT CEFET/RJ BRAZIL
Antonio José Pithon, Marina Rodrigues Brochado

LEARNING AND ICT IN UNIVERSITIES: FROM “COMMON” USES OF ICT TO A VARIETY OF LEARNING MODELS?
Patrick Badillo, Dominique Bourgeois

A CASE STUDY OF A NAVIGATOR’S SEA APITUDE USING BODY RESPONSE TO VISUAL SIMULATION
Koji Murai, Yuji Hayashi, Laurie Stone

PITFALLS OF TECHNOLOGY ENHANCED EDUCATIONAL TOOLS FOR ENGINEERING EDUCATION
Sukhmander Singh

SESSION T2F - NEW APPROACHES AND TOOLS – Virtual Laboratories (I)
Chair: Antonio A. González Quevedo (University of Puerto Rico at Mayagüez, USA)

IMPROVEMENT OF QUALITY OF PREPARATION OF ENGINEERS IN ROBOTICS BY USING OF GRID-TECHNOLOGIES
Alexander Bolshakov, Olga Dolinina, Alexey Bolshakov, Alexander Lavrov

USING WEB-BASED LABORATORIES FOR CONTROL ENGINEERING EDUCATION
Sebastián Dormido Bencomo, Hector Vargas Oyarzun, José Sánchez Moreno, Raquel Dormido Canto, Natividad Duro Carralero

VIRTUAL LABORATORY ARRANGEMENT FOR MEASURING CHARACTERISTIC POWER SYSTEM QUANTITIES
Anastasia Safigianni, Pournaras Stavros

THE DEVELOPMENT OF REMOTE ACCESS COMPUTER-AIDED LABORATORIES AND THEIR USE AT TECHNICAL UNIVERSITIES
Alexander Zimin

WECLLAB IN CHEMICAL ENGINEERING BETWEEN FRANCE AND BRAZIL: VALIDATION OF THE METHODOLOGY
Marion Alliet Gaubert, Xavier Joulia, Antonio J. G. Cruz, Roberto Giordano, Galo Carrillo Le Roux

IT-ENHANCED LABORATORY EXPERIENCE WITHIN A MODERN UNDERGRADUATE ENGINEERING CURRICULUM
EL-Sayed Aziz, Sven Esche, Constantin Chassapis
SESSION T2G - SPECIAL SESSION S1. E-Learning for Architectural Design, Product Design and Engineering Design (I)
Chair: A.J. Felton (University of Wolverhampton, UK)

A VISUAL METAPHOR REPRESENTATION OF A DESIGN PROCESS MODEL
Graham Oakes, Amal Oraifige, Anthony Felton, David Heesom

THE ROLE OF SPATIAL VISUALISATION ABILITY IN ARCHITECTURAL CURRICULA - NEW TENDENCIES IN TEACHING GEOMETRY AND GRAPHICS
Ksenija Hiel, Radovan Stulic

APPLICATION OF CATALAN SURFACE IN DESIGNING ROOF STRUCTURES – AN IMPORTANT ISSUE IN THE EDUCATION OF A FUTURE ARCHITECT ENGINEER
Jolanta Tofil

MOVING TO RAPID CAD TRAINING
Xiandong Feng, Oliver Turley, David Heesom, Anthony Felton

FMS SIMULATOR
Jussi Horelli, Matti Väänänen

SESSION T2H - SPECIAL SESSION S3. Education and Training for the Forestry Based Industries
Chair: Carlos Negro (Spain)

PILOT PROJECT: TO LEARN BY TEACHING
Carlos Negro, Angles Blanco

AN ENGINEERING COURSE FOR FRESHMEN: SIMULATING A MANAGEMENT COMPANY
Therezinha da Costa, Isnard Martins, Marcos da Silveira

THE GAP BETWEEN ACADEMIC SKILLS AND THE SKILLS NEEDED FOR THE INDUSTRY
Fernando Torgal

POSTGRADUATE EDUCATION ON PULP AND PAPER ENGINEERING IN SPAIN
Angels Pèlach, Pere Mutjé, Antonio Torres, José F. Colom

DESIGN AND DEVELOPMENT OF A LOW COST PROGRAMMABLE LOGIC CONTROLLER WORKBENCH FOR EDUCATION PURPOSES
Abd Almotaleb Kheiralla, Osama Siddig, Ahmad A. Elhaj Mokhtarb, Montasir Esameldeen, Osama Abdalla

SESSION T3A - THE CHALLENGES OF RESEARCH – Emerging Engineering Areas
Chair: Graham Leonard Oakes (University of Wolverhampton, UK)

ENGINEERING EDUCATION AS AN AREA OF THE SCIENTIFIC KNOWLEDGE
Vanderli Fava Oliveira, Danilo Pereira Pinto

INTRODUCTION TO SYSTEMS APPROACH USING BIO-ENERGY RESOURCES AS A TOOL FOR FRESHMAN ENGINEERING EDUCATION
Kumar Mallikarjunan, Anand Lakshmikanth, Mary Leigh Wolfe, Vinod Lohani, Jeff Connor

USING OF THE TECHNOLOGY OF PARALLEL PROGRAMMING FOR SOLVING APPLIED PROBLEMS
Gulnar Balakayeva, Galymbek Seralin

THE PROGRESS OF THE STUDY BRANCH BIOMEDICAL TECHNOLOGY AT VSB TECHNICAL UNIVERSITY OSTRAVA VIA THE EUROPEAN SOCIAL FUND
Jindrich Cernohorsky, Hana Sochorova, Marek Penhaker, Petr Tiefenbach

THE TECHNICAL REHEARSALS IN THE PREPARATION OF THE OFFICIAL PARADE OF SAMBA SCHOOLS IN THE CARIOCA CARNIVAL: A CONTRIBUTION ON PERFORMANCE MANAGEMENT FOR THE ENGINEERING
Mirian Martins da Motta Magalhães, José Antonio Assunção Peixoto, Leydervan de Souza Xavier, Antonio Marcos Muniz Carneiro

SESSION T3B - THE CHALLENGES OF RESEARCH – Encouraging Creativity
Chair: Artur Ferreira da Silva (Department of Information Systems and Computer Science, Instituto Superior Técnico, Technical University of Lisbon, Portugal)
ATTITUDES AND VALUES IN ENGINEERING STUDENTS: THE HUMAN DEVELOPMENT SCALE
Mariana Ruiz Morales

CREATIVE ENGINEERING EDUCATION IN COLLABORATION WITH LOCAL COMMUNITY
Kazuya Takemata, Masakatsu Matsuishi, Shigeo Matsumoto, Tetsuro Furukawa, Taketo Yamakawa

A CREATIVITY COURSE FOR ENGINEERS
Victor Valqui Vidal

IMPROVING PROBLEM SOLVING AND ENCOURAGING CREATIVITY IN ENGINEERING UNDERGRADUATES
Jonathan Adams, Stefan Kaczmarsczyk, Phil Picton, Peter Demian

AN ATTEMPT TO GET MORE CREATIVITY TO THE TRAINING PROGRAMME OF ENGINEERS
Jukka Tuohi

SESSION T3C - THE CHALLENGES OF RESEARCH – Electrical Engineering
Chair: Iványi Miklós (Professor - University of Péc, Pollack Mihály Faculty of Engineering, Hungary)

ACCEPTANCE OF 3D VISUALIZATION METHODS BY LEARNING AND TRAINING IN THE AREA OF ELECTRICAL ENGINEERING
Angel Nikolaev Angelov, Tomasz Smieja, Zbigniew Styczynski

SEEDING ENQUIRY-BASED LEARNING IN ELECTRICAL AND ELECTRONIC ENGINEERING: CASE STUDY 1 – OPTOELECTRONICS
Norman Powell, Tony Peaker, William Truscott, Peter Hicks, Brian Canavan

CHANGING TOOLS AND METHODS IN ENGINEERING EDUCATION
Jerzy Moscinski

ELECTRICAL TWO-PORTS: A MAPLE APPROACH
Amir Hossein Khanshan

TROUBLESHOOTING EXERCISES USING CIRCUIT SIMULATOR SOFTWARE: SUPPORT FOR DEEP LEARNING IN THE STUDY OF ELECTRONIC CIRCUITS
George Banky, Kwong Wong

SESSION T3D - PARTNERSHIP – Challenges of Globalization
Chair: Claudia Hallikainen (Tampere Polytechnic – University of Applied Sciences – TAMK, Finland)

HIGHER EDUCATION IN THE GLOBALIZATION ERA
Wojciech Zielinski

FOSTERING INTERNATIONAL PARTNERSHIPS TO ENHANCE ENGINEERING EDUCATION AND RESEARCH: CASE STUDIES ON EFFECTIVE RELATIONSHIPS
Patricia Fox, D. Jan Cowan, Stephen Hundley, J.P. Mohsen, Kay Wilding

GLOBAL EXPERIENCES FOR AVIATION STUDENTS
Ronald Sterkenburg, Sergey Dubrovoski

THE MOTIVATION AND ROLE OF PERSONAL STRATEGY FOR STUDYING FOREIGN LANGUAGES IN TECHNICAL COLLEGES
Barbara Danilova, Oleg Moroz, Julije Svabova

THE THREE AXES OF ENGINEERING EDUCATION
E. Dan Hирleman, Eckhard Groll, Dianne Atkinson

SESSION T3E - WHAT DEGREES FOR WHAT JOBS? – Defining the Levels of Engineering Practice
Chair: Tim J. Ward (University of New Mexico, USA)

COOPERATIVE EDUCATION IN BRAZIL: COORDINATING WORK TERMS
Claudio Roberto De Freitas Pacheco

A GRADUATE CURRICULUM FOR ENGINEERING LEADERSHIP
Stephen McKnight, John Beaty, Philip Cheney, Michael Silevitch

TEACHING GEOTECHNICAL WORKS USING PROFESSIONAL PRACTICE
Teresa Santana, Ana Quintela

USING TREND ANALYSIS TO INFLUENCE NEW COURSE PRODUCTION
Phil Picton
INDUSTRIAL DESIGN EXPOSURE TO THE ENGINEERING STUDENTS IN INDIAN CONTEXT
Amarendra Das

SESSION T3F - WHAT DEGREES FOR WHAT JOBS? – The Bologna Process (II)
Chair: Vojislav Ilic

ECTS EVALUATION IN THE FACULTY OF COMPUTER SCIENCE OF THE POLYTECHNIC UNIVERSITY OF VALENCIA
Antonio Molina Marco, Andrés Terrasa Barrena, Eduardo Vendrell Vidal, Emilio Sanchis Arnal

ABILITIES REQUIRED FOR THE FORESEEABLE FUTURE AND THEIR DEVELOPMENT IN HIGHER EDUCATION OF SCIENCE AND ENGINEERING
Ryunosuke Kikuchi

RE-THINKING THE CURRICULA FOR ELECTRICAL ENGINEERING EDUCATION IN SERBIA – CASE OF THE AUTONOMY PROVINCE OF VOJVODINA
Djuro Kutlaca, Vojin Senk

SOME REFLECTIONS ON THE NEEDS OF MATHEMATICS EDUCATION FOR ENGINEERING STUDIES: THE CASE OF ISEP
Alcinda Barreiras

SESSION T3G - WHAT DEGREES FOR WHAT JOBS? – Assessment of Engineering Education (I)
Chair: Peter Knottenbelt (University of Johannesburg, South Africa)

ASSESSMENT TO IMPACT ENGINEERING RETENTION
Susan Haag

THE IMPROVEMENT OF THE ENGINEERING EDUCATION - ANALYSIS OF A CASE STUDY RELATED TO AN INQUIRY ABOUT STUDENTS’ PERCEPTION
António Betâmio de Almeida, Susana Sequeira

THE USE OF QUALITATIVE INDICATORS TO EVALUATE PROFESSORS FROM AN ENGINEERING COURSE OF A PUBLIC UNIVERSITY IN SÃO PAULO
Ana Cecília Pontes Rodrigues, Cecília Carmen Cunha Pontes, Dirceu da Silva

ENGINEERING GRADUATES’ ASSESSMENT OF ACADEMIC PREPARATION FOR NEXT STEPS
Patricia Schmolze, Francisco Chang, Melora Sundt

QUALITY ASSURANCE AND ASSESSMENT IN TECHNICAL EDUCATION SYSTEM: A WEB BASED APPROACH
Pallapa Venkataram, Anandi Giridharan

SESSION T3H - WHAT DEGREES FOR WHAT JOBS? – Assessment of Engineering Education (II)
Chair: Raimund Ubar (Tallinn University of Technology, Estonia)

COMPUTERIZED DYNAMIC ASSESSMENT
Nirmal Khandan

ASSESSMENT OF PROGRAM OUTCOMES BY USING POMAS
Sema Oktug

WORK IN PROGRESS –QUALITATIVE ANALYSIS OF THE DIFFERENT ASSESSMENT IMPLEMENTATION METHODS IN A SCHOOL OF ENGINEERING. PRELIMINARY RESULTS
Amparo Camacho, Javier Paez, Javier Visbal

DESIGNING INDICATORS TO MEASURE THE QUALITY OF ENGINEERING COURSES: THE CASE OF ESCOLA POLITÉCNICA DA UNIVERSIDADE DE SÃO PAULO
Osvaldo Nakao, José Grimoni

ELIMINATING CORRELATIONS AND REDUNDANCY IN ACADEMIC EVALUATION QUESTIONNAIRES THROUGH MULTIVARIATE ANALYSIS
José Carlos Grizendi, Francisco José Gomes
SESSION W1A - REDISCOVERING THE FOUNDATIONS – Mathematics
Chair: Krzysztof Tytkowsky (The Silesian University of Technology, Poland)

GEOMETRY - AIMS, TASKS AND METHODS
Stanislaw Sulwinski, Krzysztof Tytkowski

PHYSICAL MODEL IN DESCRIPTIVE GEOMETRY – GOOD IDEA?
Monika Sroka-Bizon

GEOMETRY AND ENGINEERING GRAPHICS IN ENGINEERING EDUCATION
ILLUSTRATED BY EXAMPLE OF ADVANCED 3D MODELING COURSE
Monika Sroka-Bizon, Krzysztof Bizon

OFFSETTING THE OBJECTS USING SEGMENTATION
Amod Tiwari, A. Chatterjee, V. Phatak, S. G. Dhande

ENHANCING THE TEACHING & LEARNING OF DIFFERENTIAL EQUATIONS VIA
WRITING REFLECTIONS -A CASE STUDY
Azizan Zainal Abidin

CONTRIBUTION TO POSTCRITICAL NON-LINEAR BEHAVIOUR OF ELASTIC PLANE
TRUSSES DISCRETISED BY FEM - COMPARISON RESULTS OBTAINED BY “EXACT
METHODS” WITH NEWTON- RAPHSON METHOD
Milada Hlaváčková, Dagmar Juchelkova

SESSION W1B - REDISCOVERING THE FOUNDATIONS – New Competencies - Soft Skills
Chair: Anne Donnelly (University of Florida SEAGEP, USA)

DEVELOPING SOFT SKILLS IN ENGINEERING STUDIES – THE EXPERIENCE OF
STUDENT’S PERSONAL PORTFOLIO
Artur Silva, José Tribólet

THE TEAMWORK IMPACT ON LABORATORY SESSIONS AND ITS CONTRIBUTION
TOWARDS GRADUATE ATTRIBUTES
Daniela Ionescu

STUDENT PERCEPTIONS OF “SOFT” SKILLS IN MECHANICAL ENGINEERING
Rosetta Ziegler

SOCIAL AND SOFT SKILLS CONCEPT IN ENGINEERING EDUCATION
Gerhard Hillmer

THE ROLE OF HARD AND SOFT SKILLS ON ENGINEERING EDUCATION
Júlio Martins, Marinho Duarte, Sérgio Cunha, Bernardo Almada-Lobo, Antônio Torres
Marques

PLAYERS OF SOCIAL RESPONSIBILITY IN ENGINEERING PROFESSIONAL
EDUCATION IN BRAZILIAN - SCENARIO SINAES1 - NATIONAL SYSTEM FOR
SUPERIOR EDUCATION ASSESSMENT
Leydervan Xavier, José Antonio Peixoto, Lilian Martins da Motta Dias

SESSION W1C - REDISCOVERING THE FOUNDATIONS – Entry Level
Chair: Sema Oktug (Istanbul Technical University, Turkey)

A YEAR-LONG ENTRY-LEVEL COLLEGE COURSE SEQUENCE FOR ENHANCING
ENGINEERING STUDENT SUCCESS
Tony L Mitchell, Angelitha Daniel

PROMOTION OF ENGINEERING PROFESSION AND EDUCATION IN ELECTRONICS
Ilmars Slaidins, Marite Treijere

EFFECTIVE RETENTION STRATEGIES FOR ENGINEERING STUDENTS
Kerri Sleeman, Sheryl Sorby

REFLECTIONS ON THE "BASIC CYCLE" OF THE ENGINEERING STUDIES AT THE
ESCOLA POLITÉCNICA DA UNIVERSIDADE DE SÃO PAULO: CONTEMPORANEITY
AND PROBLEMS.
Haydée Svab, Giuliano Olguin, Henrique Gaspar, Clarice Aiello, Andre Antunha

COMPARING PRESENT OUTCOME DATA TO THAT UTILIZING BLOOM’S TAXONOMY
Enno Koehn, James Koehn

COOPERATIVE EDUCATION: A PROPOSAL TO INCREASE THE NUMBER OF
ADMITANCES OF STUDENTS INTO THE BRAZILIAN PUBLIC HIGHER EDUCATION
INSTITUTIONS
SESSION W1D - SPECIAL SESSION S2. New Tech in Math for Engineering and Other Sciences (I)
Chair: Peter Dux (University of Queensland, Australia)

NEW CHALLENGES, NEW APPROACHES: A NEW WAY TO TEACH MATHEMATICS IN ENGINEERING
Agustin De La Villa, Felix Alonso, Gerardo Rodriguez
APPLIED MATHEMATICS AND COMPUTATIONAL MODELING IN ENGINEERING
Zuzana Krivá, Karol Mikula
IMPLEMENTATION OF IDP TECHNIQUE BY THE USE OF MATLAB SOFTWARE AS A TOOL FOR THE CHEMICAL ENGINEERING EDUCATION
Paulo Roberto Alves Pereira, Ana Maria Frattini Fileti
INCREASING THE LEARNING OUTCOME IN MATHEMATICS BY USE OF COMPUTER PROGRAMS LIKE MATHEMATICA
Ivar Johannesen
UTILIZATION OF NEW TECHNOLOGIES IN SCIENCE TEACHING TO IMPROVE STUDENT LEARNING AT ENGINEERING INTRODUCTORY PHYSICS COURSES
Edson Pedro Ferlin
THE IMPACT OF WEB-BASED MATERIALS ON STUDENT LEARNING AND COURSE DELIVERY IN ENGINEERING MATHEMATICS
Kevin Golden, Stephen Lee

SESSION W1E - SPECIAL SESSION S5. Involving Engineering Schools and Universities in Technical and Scientific Education for School Outreach (I)
Chair: Benjamín Colucci (University Of Puerto Rico, USA)

EXPOSITORY PROGRAMS: AN EFFECTIVE APPROACH TO ENHANCE K-12 ENGINEERING EDUCATION
Juan Lopez-Garriga
ASSESSMENT OF HIGH SCHOOL STUDENTS’ EXPOSURE TO ENGINEERING VIA A SUMMER CAMP
Karinn Vernaza, Theresa Vitolo, Scott Steinbrink, Barry Brinkman, Frank Bogacki
INCREASING ENROLLMENT OF FIRST-TIME-FULL TIME FRESHMAN (FTFTF) IN STEM MAJORS
Joel Bloom, Kathryn Kelly
UNIVERSAL DESIGN IN COMPUTER SCIENCE EDUCATION AND SYSTEMS DEVELOPMENT
Kirsten Ribu, Miriam Nes
DEVELOPMENT AND IMPLEMENTATION OF A COMPREHENSIVE NANO-EDUCATION PROGRAM
Nancy Healy, Diana Palma
MANUFACTURING TECHNOLOGY IN MIDDLE SCHOOL CLASSROOMS: A COLLABORATIVE APPROACH
Constance Ziemian, John Aument

SESSION W1F - SPECIAL SESSION S10 – Professionalism and Ethics in Engineering Education
Chair: Tim J. Ward (University of New Mexico, USA)

ENGAGING TWENTY-FIRST CENTURY LEARNERS
Peter Willmot, Tony Sutton, Sarah Bamforth
ENGINEERING ETHICS
Helena Pálková, Veronika Svobodová
AVOIDING PLAGIARISM AND COLLUSION
Dana Dobrovská, Pavel Andres, David Vanecek, Antonín Pokorny
DEVELOPMENT OF A COURSE ON ENVIRONMENTAL SUSTAINABILITY, ETHICAL DECISION-MAKING AND COMMUNICATION SKILLS IN ENGINEERING
Abbas El-Zein, David Airey, Peter Bowden, Henriikka Clarkeburn
TEACHING ETHICS FOR URBAN PLANNERS AND ARCHITECTS
SESSION W1G - SPECIAL SESSION S11 – Addressing Emerging Technologies in an Engineering Curriculum
Chair: Xin-Ran Duan (Holyoke Community College, Massachusetts, USA)

ARE THE CURRICULA ABLE TO FOLLOW THE DEVELOPMENT TRENDS IN BROADBAND DATA COMMUNICATIONS?
Tomáš Vrba, Aleš Kumpera, Tomáš Zeman

A SATELLITE COMMUNICATIONS COURSE IN UNDERGRADUATE ELECTRICAL ENGINEERING CURRICULUM: AN ENDEAVOR TO COPING WITH THE CHANGING DISCIPLINE BOUNDARIES
Habib Rahman

EDUCATION IN DATA TRANSMISSION LABORATORY RESPECTING THE PRINCIPLES OF ELECTROMAGNETIC COMPATIBILITY
Tomas Zeman, Jaromír Hrad, Tomas Vrba

TRANSMISSION AND SWITCHING SYSTEMS: TRENDS OF TECHNOLOGY IN EDUCATION
Jiří Hájek, Tomáš Vrba

NEW EDUCATION TRENDS IN THE INTERDISCIPLINARY AREAS OF ELECTROMAGNETIC COMPATIBILITY
Jaroslav Svoboda, Jaromír Hrad, Tomas Zeman

SESSION W1H - Teaching Practice and Exposing Students to the Nature of Engineering
Chair: Carina Savander-Ranne (Tampere Polytechnic University of Applied Sciences and Tampere University of Technology, Finland)

A CASE STUDY IN USING THEORY OF CHANGE TO IMPROVE TEACHING PRACTICE IN A CONTROL DEPARTMENT
John Anthony Rossiter, Linda Gray, Gabi Diercks O'brien

BRINGING ENGINEERING INTO K-12 SCHOOLS: A PROBLEM LOOKING FOR SOLUTIONS?
Howard Kimmel, John Carpinelli, and Ronald Rockland

STUDENTS EVALUATING SIGNIFICANT FACTORS ON RETENTION: A STATISTICAL ANALYSIS
Fernando Tovia, Yan Liu

WORK SITES AS A HALFWAY THROUGH TEACHING AND RESEARCH
Cristina Tudela Andreu, Concepción López González, Jesús Mene Aparicio, Mª Luisa Navarro García

LOW-COST MINIATURIZED CHROMATOGRAPHIC COLUMNS FOR TEACHING
Rodrigo Amorim Motta Carvalho, Alexandre Tressino de Carvalho, Esteban Fachini, Maria Lúcia Pereira da Silva

THE LIFELONG EDUCATION – A SOCIAL TREND OR COMPETENCE NEED
Hong Wu, Pierre-Olivier Lombarteix

SESSION W2A - NEW APPROACHES AND TOOLS – Virtual Laboratories (II)
Chair: Lucy Morse (University of Central Florida, USA)

A VIRTUAL PLATFORM TO TEACH CHEMICAL PROCESSES
Maria da Graça Rasteiro, L. Ferreira,J. Teixeira,F.P. Bernardo,M.G. Carvalho

EVALUATING FERMOPT AS A TOOL FOR TEACHING FERMENTATION AND OPTIMATION PRINCIPLES
Mark Lay, Janis Swan

TEACHING HEAT TRANSFER TO ENGINEERING STUDENTS — A COURSE OF COMPUTER-BASED HANDS-ON ACTIVITIES
Colm O'Sullivan
FEASIBILITY STUDY: USING A VIRTUAL SURVEYING INSTRUMENT IN SURVEYOR TRAINING
Hui-Lung Kuo, Shih-Chung Kang, Cho-Chien Lu, Shang-Hsieh Hsieh, Yong-Huang Lin
DEVELOPMENT AND INTERACTION OF WEB LABS AND LMS
Manuel Castro, Elio Sancristobal, Sergio Martin, Gabriel Diaz, Juan Peire

SESSION W2B - NEW APPROACHES AND TOOLS – Virtual Laboratories (III)
Chair: Jane Jacobi (Clemson University, USA)

A PARADIGM FOR VERTICALLY INTEGRATED CURRICULUM INNOVATION - HOW CURRICULA WERE DEVELOPED FOR UNDERGRADUATE, MIDDLE AND HIGH SCHOOL STUDENTS USING UNDERWATER ROBOTICS
Liesl Hotaling, Rustam Stolkin, Elizabeth McGrath, Costas Chassapis, Keith Sheppard
A LABORATORY SUPPORT FRAMEWORK BASED ON A NETWORKED KNOWLEDGE REPRESENTATION
Cédric Boey, Vincent Raman, Marc Jaumain, Frédéric Robert
SHOULD ENGINEERING FRESHMEN HAVE AN ENGINEERING LABORATORY IN THE FIRST SEMESTER?
Klaus Wuersig
ENGINEERING EDUCATION USING A LONG-DISTANCE-CONTROLLED ROBOT SYSTEM TO ENHANCE STUDENTS' MOTIVATION
Akiyuki Minamida, Kazuya Takemata, Nobuyuki Naoe, Hirofumi Yamada, Suat Hoon Pee
AN ONLINE TOOL FOR TEACHING DESIGN TRADE-OFFS IN COMPUTER ARCHITECTURE
Azam Beg

SESSION W2C - NEW APPROACHES AND TOOLS – Problem Based Study Projects (I)
Chair: Anna Friesel (Copenhagen University College of Engineering)

PROJECT-BASED LEARNING IN FIRST YEAR ENGINEERING CURRICULA: COURSE DEVELOPMENT AND LEARNING EXPERIENCES IN TWO NEW COURSES AT MIT
Monica Rush, Dava Newman, David Wallace
USING GAMES IN LECTURES TO IMPROVE STUDENT LEARNING
John Anthony Rossiter
MOTIVATING STUDENTS USING IN-CLASS QUESTION SESSIONS
Elizabeth Laws
THE RELEVANT FACTORS IN THE TEACHING–LEARNING PROCESS OF DESIGN OF EXPERIMENTS
Juan Sillero, Esa Rocio Balmori
ADOPTING PROBLEM-BASED LEARNING IN THE TEACHING OF ENGINEERING UNDERGRADUATES: A MALAYSIAN EXPERIENCE
Berhamnudin Mohd Salleh, Hussain Othman, Ahmad Esa, Abdullah Sulaiman, Hasyamudin Othman

W2D - NEW APPROACHES AND TOOLS – Problem Based Study Projects (II)
Chair: Jerry Gabriel (Cornell University, USA)

EXPERIENCE WITH PRACTICAL PROJECT BASED LEARNING IN A DEVELOPING UNDERGRADUATE ENGINEERING DEGREE PROGRAM
Tim Anderson, Rob Torrens, Mark Lay, Mike Duke
MODEL FOR ENGINEERING EDUCATION TO DEVELOPMENT OF COMPETENCES AND ABILITIES
Gilson Morales, Clarissa Unica Morales
A SYNTHESIS COURSE OF PROJECT-BASED AND KNOWLEDGE-BASED IN ENGINEERING PROGRAMM
Chen Xu, Ang Haisong, Tong Mingbo
THE STUDY OF "FREE-RIDER" IN PROBLEM-BASED LEARNING SITUATION
Hui-Chin Huang, Yu-Tsen Kuo, Shang-Tsung Yang
SESSION W2E - NEW APPROACHES AND TOOLS – Problem Based Study Projects (III)
Chair: Paul Wheeler (Utah State University, USA)

THE ANALYSIS OF PROBLEM LEVEL AND KNOWLEDGE CATEGORY IN PROBLEM-BASED PEDAGOGY APPLIED TO DESIGN EDUCATION: TO TAKE OFFICE DESIGN AS AN EXAMPLE
Shau-Thou Yang, Yu-Ting Lin, Yi-Xin Zhang

THE CURRICULUM DESIGN AND IMPLEMENTATION OF PROBLEM-BASED LEARNING IN GRAPHIC COMMUNICATIONS
Tsu-Ming Wu, Jon-Chao Hong, Shin Liao, Li-Ting Chen

WHAT ARE THE PERCEPTIONS OF CIVIL ENGINEERING LECTURERS TOWARDS USING COOPERATIVE LEARNING?
Aoife Ahern

BASIC CIRCUITS ANALYSIS LEARNING: A COIMBRA UNIVERSITY CASE STUDY IN THE ELECTRICAL AND COMPUTERS ENGINEERING DEPARTMENT
Pedro Faia

SESSION W2F - SPECIAL SESSION S1. E-Learning for Architectural Design, Product Design and Engineering Design (II)
Chair: David Heesom (University of Wolverhampton, UK)

E LEARNING: SUPPORTING THE TRANSITION FROM SKILLS TO A KNOWLEDGE BASED LEARNING APPROACH TO DESIGN
David Heesom, Anthony Felton, Kevin Garner

E-LEARNING ENVIRONMENT OF BUILDING AUTOMATION
Matti Väänänen, Jussi Horelli, Jari Jussila, Juha Katajisto

ADAPTIVE MECHANISM IN VIRTUAL EDUCATION ENVIRONMENT
Marek Bober, Radoslav Fasuga, Jana Sarmanova

APPLICATION OF TAM MODEL ON E-LEARNING SYSTEM IN USING INTENTIONS AND AFFECTING FACTORS FOR LEARNERS
Kuei-Chih, KC Chuang

SESSION W2G - SPECIAL SESSION S2. New Tech in Math for Engineering and other Sciences (II)
Frode Eika Sandnes (Faculty of Engineering, Oslo University College, Norway)

STUDENT EVALUATION OF THE LEARNING MANAGEMENT SYSTEM FRONTIER FROM AN HCI PERSPECTIVE
Frode Eika Sandnes, Hua-Li Jian, Simen Hagen, Olav Talberg

ENGLISH AS A LINGUA FRANCA: A TOOL FOR ENGINEERS
Jaana Suviniitty

UML BASED EMBEDDED DOCUMENTATION FOR SEMI-AUTOMATIC SOFTWARE DEVELOPMENT
Nenad Marovac

A PROBLEM BASED APPROACH TO OPTIMIZATION: APPLIED CASES, FROM BASIC CYCLES TO ENGINEERING EDUCATION
João Miranda, Casquilho Miguel

TRANSPORT MODELLING FOR IMPROVED ENVIRONMENT: ENGINEERING EDUCATION STUDIES OF ENVIRONMENTAL IMPACT AND CUSTOMERS ATTITUDE
James Uhomoibhi, Dailin Huang

SESSION W2H - SPECIAL SESSION S12 – Technology and Society
Chair: Eniko T. Enikov (University of Arizona, USA)
UNDERGRADUATE COURSE COLLABORATION BETWEEN INDUSTRIAL TECHNOLOGY AND COMPUTER INTEGRATED MANUFACTURING TECHNOLOGY AT PURDUE UNIVERSITY
Soraya Khiewnavawongs, Edie Schmidt

COOPERATIVE EDUCATION: THE KNOWLEDGE OF COMPETENCES
Patricia Lara dos Santos Matai, Shigueharu Matai

COOPERATIVE EDUCATION: THE PHYSICAL ENVIRONMENT
Patricia Lara dos Santos Matai, Shigueharu Matai

INCORPORATING PARTICIPATORY ACTION DESIGN INTO RESEARCH AND EDUCATION
Dan Ding, Rory Cooper

AN EMPIRICAL EMISSION ANALYSIS MODEL FOR HEBEI PROVINCIAL INDUSTRIES IN CHINA
Dezhi Liu, Hong Wu, Haibiao Cai

PLENARY SESSION 3 - QUALITY, ACCREDITATION AND ENGINEERING EDUCATION FOR A NEW GENERATION
Invited Speakers: António Salgado de Barros, Giuliano Augusti, Oleg Boev

SESSION R1A - SPECIAL SESSION S2. New Tech in Math for Engineering and other Sciences (III)
Chair: Zuzana Krivá (Slovak Technical University, Faculty of Civil Engineering, Slovakia)

- USING THE CONCEPT OF GOOGLE’S PAGERANK TO ENHANCE STUDENT MOTIVATION IN MATHEMATICS
  Francisco Pedroche
- E-LEARNING IN SPACE SCIENCES AND TECHNOLOGIES: “STATES OF ARTS AND DEVELOPMENT STRATEGIES” IN AFRICA
  Souad Elharrassi, Abderrahimne Touzani, Samir Bennani
- A SELF-PRACTICE ONLINE TOOL FOR TEACHING AND LEARNING COMPUTATIONAL SKILLS IN ENGINEERING CURRICULA
  Abbas El-Zein, Tim Langrish, Nigel Balaam
- MEANINGFUL LEARNING THROUGH IDENTIFYING DIFFERENCES AND SIMILARITIES BETWEEN CERTAIN PROBLEMS AND ALGORITHMS
  Malik Jahan Khan, Ashraf Iqbal, Yasser Hashmi
- MEANINGFUL LEARNING OF PROBLEM TRANSFORMATIONS FOR A GRID GRAPH
  Munazzaah Abdul Ghaffar, Ashraf Iqbal, Yasser Hashmi

SESSION R1B- SPECIAL SESSION S5. Involving Engineering Schools and Universities in Technical and Scientific Education for School Outreach (II)
Chair: Alexandru M. Morega (Politehnica University of Bucharest, Romania)

- HIGHER/SECONDARY EDUCATION: A SUCCESSFUL PARTNERSHIP
  Celina Leão, Filomena Soares, José Machado, Eurico Seabra
- A U.S. WORKING MODEL FOR THE K-16 ENGINEERING PIPELINE
  Howard Kimmel, John Carpinelli, Rosa Cano, Angelo Perna
- A PROPOSED MODEL CURRICULUM FOR PRE-ENGINEERING DEGREE PROGRAMS
  Xin-Ran Duan
- THE IMPACT ON UNIVERSITY STUDENTS PARTNERED WITH SECONDARY TEACHERS WHEN DEVELOPING AUTHENTIC LEARNING ACTIVITIES
  Anant Kukreti, Daniel Oerther, Thaddeus Fowler, Suzanne Soled
- AN INNOVATIVE K-12 SCIENCE AND ENGINEERING INITIATIVE
  Joseph Cocozza

SESSION R1C - SPECIAL SESSION S6 – Curriculum Development Adapting to Globalization
Chair: E. Dan Hirleman (Purdue University, USA)

- ENGINEERING PRACTICE: A DRIVER FOR CURRICULUM CHANGE
  Vojislav Ilic
A NEW PARADIGM FOR UNDERSTANDING COMMUNICATION THAT CAN TRANSFORM ENGINEERING COMMUNICATIONS LEARNING AND TEACHING
Rick Evans, Jerry Gabriel

PROMOTING CULTURAL AWARENESS AND UNDERSTANDING IN ENGINEERING EDUCATION CURRICULUM
Yuko Hoshino, Wayne Sanders

INTEGRATION OF RESEARCH AND TEACHING IN ENGINEERING AND COMPUTER EDUCATION - RESEARCH PROJECTS AS A SOURCE FOR CURRICULUM DEVELOPMENT IN RESPONSE TO GLOBALIZATION CHALLENGES
Clara Amelia de Oliveira, Maria do Socorro Marcia Lopes Souto

DEVELOPING THE CREATION EDUCATION OF THE INTEGRATION OF CURRICULUM ON THE LIVING CULTURE AND TECHNOLOGY IN NEW CENTURY
Kuei-Chih, KC Chuang

SESSION R1D - SPECIAL SESSION S7 – Education and Research on Sustainability
Chair: Isabel Pinto (Department of Civil Engineering, University of Coimbra, Portugal)

CYBERWORK IN ENERGY PLANNING AND SUSTAINABLE DEVELOPMENT
Ricardo Gimenes, Miguel Udaeta, André Gimenes, Aquiles Grimoni

E-LEARNING INSTRUCTION FOR THE IMPLEMENTATION OF A RENEWABLE ENERGY ENGINEERING PROFILE IN AN INTERNATIONAL PROJECT
Eduardo Montero, María Jesús González, Montserrat Diez, Ricardo Pizarro, Margarita Ortega

QUALITY SYSTEM FOR EXCELLENCE IN ENGINEERING EDUCATION
Shiena Shkhar, Arun Arora

TEACHING OF CLEAN ENERGY PRODUCTION IN THE SILESIAN UNIVERSITY OF TECHNOLOGY IN GLIWICE, POLAND
Ryszard K. Wilk

SESSION R1E - SPECIAL SESSION S8 – Humanitarian Engineering
Chair: Catherine Skokan (USA)

HUMANITARIAN ENGINEERING PROGRAM – CHALLENGES IN THE EXECUTION OF REMOTE PROJECTS
Catherine Skokan, David Munoz

ENGINEERS WITHOUT BORDERS – USA, LEARNING THROUGH HUMANITARIAN SERVICE TO UNDERDEVELOPED COMMUNITIES
Willard Nott, Peter Bosscher, Adam Christensen, Cathy Leslie, Doug Edwards

RENEWABLE ENERGY PROJECTS FOR TEACHING HUMANITARIAN ENGINEERING
Pritpal Singh

THE ROLE OF INTERNATIONAL PROJECTS IN ENGINEERING EDUCATION: BIOFUEL ELECTRIFICATION IN ORISSA, INDIA
Maren Somers, Stephanie Bogle, T. Patrick Walsh, Benjamin Barnes, Sean Poust

UNIVERSITY, SOCIETY AND NON-PROFIT ORGANIZATIONS: THE DEVELOPMENT OF A PARTNERSHIP
Samuel Toffoli, Silvio Burratino Melhado, Maria Inês Piffer, Tereza Carvalho

SESSION R1F - SPECIAL SESSION S9 – Innovation and Entrepreneurship in Engineering Education
Chair: João Falcão e Cunha (Faculdade de Engenharia da Universidade do Porto, Portugal)

ENTREPRENEURSHIP IN BIOMEDICAL ENGINEERING, FROM CLASSROOM TO CORPORATION: A MODEL AND CASE STUDY
Vikki Hazelwood, Arthur Ritter, Helena Wisniewski

THE GENERATOR II PROJECT - AN INTERNATIONAL ENTREPRENEURSHIP COLLABORATION BASED ON THE VENTURE CUP CONTEST AND FINANCED BY THE EUROPEAN UNION INTERREG PROGRAM
Bjørn Gitle Hauge

SOCIAL CAPITAL FOR ENTREPRENEURS
Celso Massatoshik Furukawa, Jose Antonio Lerosa de Siqueira
TEAMWORK AND INNOVATION COMPETENCIES: A FIRST SEMESTER ENGINEERING STUDENTS HANDS-ON COURSE  
   Maria Catalina Ramirez, Nestor Alexander Jimenez, Jose Tiberio Hernandez

A STUDY ON THE TALENTS’ COMPETENCY AND THE NEED AND IMPLEMENT OF EDUCATING AND TRAINING AT THE MANUFACTURERS IN TAIWAN  
   Ming-Ta Wu, Yu-Shan Cheng, Pei-Wen Liao

SESSION R1G - SPECIAL SESSION 15 – Assessment of Research and Education (I)  
Chair: Peter Bullen (University of Hertfordshire, UK)

THE EXCELLENCE SYSTEM APPLICATION IN HIGHER EDUCATION  
   Radim Farana

ANALYSIS OF ACADEMIC PAPERS IN THE FIELD OF MATERIAL SCIENCE AMONG UNIVERSITIES AND COLLEGES IN IN TAIWAN, HONG KONG, SINGAPORE, AND CHINA  
   Mu-Hsuan Huang, Pei-Shan Chi

SW3A: WEB-BASED SYSTEM FOR ACADEMIC ASSESSMENT AND FOLLOW-UP ON ADDRESSING THE VARIATION IN INTELLECTUAL DEMAND OF ENGINEERING UNDERGRADUATE RESEARCH PROJECTS  
   Andrew Kilpatrick, Joe Petrolito, Katherine Legge, Daniela Ionescu

EVALUATION OF ENGINEERING EDUCATION: A CASE OF STUDY BASED ON THE EXPERIENCE OF THE POLYTECHNIC SCHOOL OF THE UNIVERSITY OF SÃO PAULO  
   Giuliano Olguin, Henrique Gaspar, Ana Cecília dos Santos, Haydeé Svah, Clarice Aiello

SESSION R2A - REDISCOVERING THE FOUNDATIONS – Biology and Biotechnology  
Chair: JunJay Tan (Massachusetts Institute of Technology, USA)

WHY ENGINEERING BIOLOGY MATTERS  
   Wee Ling W

BIONICS IN ENGINEERING - DEFINING NEW GOALS IN ENGINEERING EDUCATION  
   Ralf Neurohr, Cristian-George Dragomirescu

UTILIZATION OF BIOMASS AND MIXTURES FOR THE GAS PRODUCTION  
   Dagmar Juchelková, Tomasz Wiltowski, Vaclav Roubicek

A COMPREHENSIVE REVISION OF THE INDUSTRIAL BIOTECHNOLOGY UNDERGRADUATE PROGRAM IN RESPONSE TO ESTABLISH A BIO-BASED ECONOMY  
   Rosa Buxeda, Lorenzo Saliceti-Piazza

BIOMEDICAL ENGINEERING UNDERGRADUATE COURSES  
   Jose Carlos Moraes

SESSION R2B - REDISCOVERING THE FOUNDATIONS – Design  
Chair: Tanya Domina (Central Michigan University, USA)

EDUCATION OF SPATIAL THINKING AND AESTHETICS - TOWARD HUMANISATION OF BUILT SPACE  
   Lidia Zakowska

DESIGN AND PRODUCTION ENGINEERING. SOME MOVING FRONTIERS OF THE ENGINEERING EDUCATION IN BRAZIL  
   Beany Monteiro, Roberto Bartholo

DISTRIBUTED EXPERTISE AND AUTHENTICITY IN THE DEVELOPMENT OF DESIGN EXPERTISE  
   Vanessa Svhila, Anthony Petrosino, Kenneth Diller, Taylor Martin

DESIGN EDUCATION IN BRAZIL  
   Regina Celia de Souza Pereira, Ricardo Manfredi Naveiro

SESSION R2C - NEW APPROACHES AND TOOLS – e-Learning (III)  
Chair: Uriel Rubén Cukierman (Universidad Tecnológica Nacional, Argentina)
A BLENDED LEARNING APPROACH TO TEACHING FIRST YEAR ENGINEERING DEGREE STUDENTS
Peter Bullen, Mark Russell

VIRTUAL LEARNING APPROACH IN VOCATIONAL INITIAL TEACHER TRAINING
Peter Toth

IMPLEMENTING ADVANCED E-LEARNING FACILITIES. CASE STUDY FOR BABES-BOLYAI UNIVERSITY, CLUJ-NAPOCA, ROMANIA
Alina Andreica

E-LEARNING PLATFORM FOR TEACHING COURSES OF DYNAMICS AND FLUID MECHANICS BY X3D
J. F. Tsai, J. S. Kouh, C.W . Chen

NEW APPROACH TO DISTANCE LEARNING WITH USING OF GRID-COMPUTING
Olga Dolinina, Dmitry Kintsel

SESSION R2D - THE CHALLENGES OF RESEARCH – Student Integration in Research Projects
Chair: Maria da Graça Rasteiro (Department of Chemical Engineering, University of Coimbra, Portugal)

ENGAGING UNDERGRADUATE STUDENTS IN RESEARCH PROJECTS
Maria da Graça Rasteiro

NSF CENTERS’ APPROACH TO THE INTEGRATION OF RESEARCH AND EDUCATION
Anne Donnelly

EDUCATION ACROSS LENGTHSCALES
Graham Harrison, Christopher Cox, Gary Lickfield, Amod Ogale

STUDENTS RESEARCH TRAINING AND CURRICULUM DEVELOPMENT THROUGH SCIENTIFIC RESEARCH
Mia Eeckhout, Filip Van Bockstaele

RESEARCH EXPERIENCES FOR UNDERGRADUATE STUDENTS IN STRUCTURAL ENGINEERING
Anant Kukreti

SESSION R2E - NEW APPROACHES AND TOOLS – Laboratory Integration (I)
Chair: Colm O’Sullivan (National University of Ireland, Cork, Ireland)

DESIGN AND DEVELOPMENT OF A HYDRAULIC CIRCUIT BENCH FOR EDUCATION PURPOSES
Abd almotalab Kheirallaa, Omer Adam Rahamab, Dina Mahmoud Abd-Ikareemb, A.bu baker Adam Saadalnoorb, Ghada Mustafa Nasrb

EXPERIMENTAL MODULES CONSTRUCTION: AN IMPORTANT METHODOLOGY TO PREPARE FUTURE ENGINEERS
Paulo Roberto Alves Pereira, Fabio Henrique Salvalaio, Mauro de Paula Moreira, Adão da Silva

DESIGN AND DEVELOPMENT OF A PNEUMATIC CIRCUIT BENCH FOR EDUCATION PURPOSES
Abd Almotaleb Kheiralla, Mohamed Abdel-Monaemb Abdel-Monaemb, Mohamed Ibrahim Ahmed Ahned

THE ESTABLISHMENT OF AN INTERACTIVE E-LEARNING SYSTEM FOR ENGINEERING FLUID FLOW AND HEAT
Tzu-Chen Hung, Chun-Chieh Liu, Chih-Tzung Hung, Hao Ku

VISUALIZATION OF CATALYZED COMBUSTION ZONE BY TIME-RESOLVED INFRARED THERMOGRAPHY
Rafael M. Dviglov

SESSION R2F - NEW APPROACHES AND TOOLS – Laboratory Integration (II)
Chair: Jiri Jan (Brno University of Technology, Dept. of Biomedical Engineering, FEEC, Czech Republic)

LEARNING AUTOMATION BY DOING IT – A CASE-STUDY
Pedro Silva, Paulo Oliveira, Nuno Carvalho, Celina P. Leão, Filomena Soares

A LABVIEW APPLICATION IN A MINI POWER SYSTEM MODEL ALLOWING REMOTE ACCESS
José Grimoni, Vinicius Lopes, Osvaldo Nakao
SENSORS AS AN ALTERNATIVE WAY FOR TEACHING EMBEDDED SYSTEMS AND MICROELECTRONICS
Thiago de Faria, Wesley Becari, Javier Ramirez-Fernandez
VIRTUAL LABORATORY OF MICROELECTRONIC MOUNTING AND PACKAGING TECHNOLOGIES
Cyril Vasko, Marek Novotny, Ivan Szendiuch
VIRTUAL NANOTECHNOLOGY WORKBENCH FOR ENGINEERING EDUCATION
Ante Munjiza

SESSION R2G - SPECIAL SESSION S4. Multidisciplinary/Institutional Senior Design (I)
Chair: Rich Spontak (North Caroline State University, USA)

MATERIALS, MARKETING AND THE ENVIRONMENT – AN INTERDISCIPLINARY APPROACH FOR STUDENTS
Dale Palmgren
MQP IN CHINA: DOING PROJECTS AND BEYOND
Yiming Rong, Gretar Tryggvason, Richard Vaz, Liang Gao, Changlin Wu
PRACTITIONER DRIVEN SENIOR DESIGN CAPSTONE COURSE
Anant Kukreti, Raviteja Chalasani
CAPSTONE DESIGN PROJECT ON OPTICAL MEMS: A VEHICLE FOR INTERDISCIPLINARY RESEARCH AND LEARNING
Eniko Enikov, Stanley Pau
MEANINGFUL LEARNING AT THE INTERFACE OF COMPUTING AND MOLECULAR BIOLOGY
Ashraf Iqbal, Yasser Hashmi, Muhammad Aurangzeb
INTERDISCIPLINARY ASPECTS IN MICRO(NANO)ELECTRONICS TECHNOLOGY EDUCATION
Ivan Szendiuch, Cyril Vaško.

SESSION R2H - SPECIAL SESSION S5. Involving Engineering Schools and Universities in Technical and Scientific Education for School Outreach (III)
Chair: António José Mendes (University of Coimbra, Portugal)

AN ASSESSMENT OF A HIGH SCHOOL BME ENGINEERING OUTREACH PROGRAM
Anna Koo, Melora Sundt, Joe Cocozza
AN INTEGRATED STEM RESEARCH AND PROFESSIONAL DEVELOPMENT PROJECT FOR TEACHERS
Anant Kukreti, George Sorial, Mingming Lu, Heng Wei, Thaddeus Fowler
NAVIGATING THE OBSTACLES IN SCIENCE EDUCATION FOR SCHOOL OUTREACH
Diana Rincon, Dawn Elliott
USING AN EXPECTED LOSS FUNCTION TO IDENTIFY BEST HIGH SCHOOLS FOR RECRUITMENT
Sonia Bartolomei-Suárez, David González-Barreto, Antonio González-Quevedo
INTEGRATION OF RESEARCH AND EDUCATION IN A MULTI-INSTITUTIONAL CENTER
Elizabeth Tranter
“SPAZIO PER TUTTI”: A HANDS-ON EXPERIENCE TOWARD SPACE ENGINEERING
Amalia Finzi, Marco Molina

SESSION R3A - WHAT DEGREES FOR WHAT JOBS? – Assessment of Engineering Education (III)
Chair: Daniela Ionescu (La Trobe University, Australia)

REENGINEERING CHEMICAL ENGINEERING EDUCATION FOR THE FUTURE
Pedro Saraiva, Lino Santos, Rosa Quinta-Ferreira
COMPARING CHALLENGE-BASED AND TRADITIONAL INSTRUCTION IN BIOMEDICAL ENGINEERING
Taylor Martin, Stephanie Rivale, Kenneth Diller
A STRATEGIC APPROACH TO INDUSTRIAL ENGINEERING CURRICULUM IN BRAZILIAN PRIVATE SCHOOLS
Santoro Miguel Cezar, Mesquita Marco Aurélio de

DEVELOPING MINING ENGINEERING FOR AFRICAN COUNTRIES - THE MOZAMBIQUE CASE STUDY
Peter Knottenbelt

A SURVEY OF COURSE ASSESSMENT AT “POLITEHNICA” UNIVERSITY OF BUCHAREST
Irina Postelnicu, Mihaela Albu

SESSION R3B - WHAT DEGREES FOR WHAT JOBS? – Engineering Accreditation
Chair: Mário Rui Gomes (Instituto Superior Técnico, Polo do TagusPark, Portugal)

ACCREDITATION OF ENGINEERING EDUCATION FOR THE MASTER’S DEGREE IN TAIWAN
Mandy Liu, Pei-Fen Chang, Yeong-Bin Yang
EUR-ACE AND EMAEE: A PROPOSAL AND A TOOL FOR A EUROPEAN SYSTEM FOR ACCREDITATION OF ENGINEERING EDUCATION
Giuliano Augusti, Borri Claudio, Elisa Guberti
TITLE: CONTRIBUTIONS TO QUALITY ASSURANCE OF ENGINEERING EDUCATION IN ROMANIA
Dan-Maniu Duse, Carmen Sonia Duse
A NEW FRAMEWORK FOR MEASURING QUALITY IN ENGINEERING EDUCATION AND RESEARCH IN SLOVAK REPUBLIC
Tatiana Corejová, Maria Rostášová, Matilda Drozdová
DEVELOPMENT OF AN EFFECTIVE LEARNING CURRICULUM FOR FE/EIT EXAMINATION
Uksun Kim, David Cheng, Othoniel Rodriguez-Jimenez, Ning Fang

SESSION R3C - SPECIAL SESSION S4. Multidisciplinary/Institutional Senior Design (II)
Chair: Rich Spontak (North Caroline State University, USA)

ENGINEERING DESIGN PROCESS – AN INTERDISCIPLINARY APPROACH
Tanya Domina, Maureen MacGillivray, Terry Lerch, Patrick Kinnicutt
ENGINEERING EDUCATION SOLUTIONS TO A GLOBAL ECONOMY
Alexandru Mihail Morega, Juan Carlos Ordonez, Jose Viriato Coelho Vargas, Cesar Luongo, Chiang Shih
ON CHALLENGES OF DESIGN-BASED CURRICULUM
Peter Bofah
ORGANISATIONAL ASPECTS OF THE EVICAB – A VIRTUAL EUROPEAN CAMPUS FOR BIOMEDICAL ENGINEERING
Jiri Jan
COMBINED BIOMEDICAL AND ECOLOGICAL ENGINEERING – INITIAL EXPERIENCE FROM REALISATION
Jiri Jan

SESSION R3D - SPECIAL SESSION 15 – Assessment of Research and Education (II)
Chair: Norman Powell (University of Manchester, UK)

MODELS FOR RESEARCH-BASED TEACHING IN ENGINEERING COURSES: A CASE-STUDY AT THE UNIVERSITY OF AVEIRO (PT) AND SAN JOSÉ STATE (USA)
Isabel Huet, Nikos Mourtos, Nilza Costa, Osvaldo Pacheco
TOWARDS A HELPING SYSTEM FOR A GOOD ASSESSMENT IN E-LEARNING
Nour-eddine El Faddoul, Mohammed Khalidi Idrissi, Fayssal Smawi, Youssef Belqasmi
LEARNER TRACKING: WHICH SYSTEM?
Mohammed Khalidi Idrissi, Nour-eddine El Faddoul, Nadia Nechchad, Samir Bennani
ASSESSMENT OF CURRENT ENGINEERING EDUCATION IN GREECE - UNIVERSITIES AND TECHNOLOGICAL INSTITUTES
Asterios Liolios, Anastasios Boglou
DEVELOPING PROCESS OF SPECIAL PROJECT COURSE AT DEPARTMENT OF MECHANICAL AND ELECTRO-MECHANICAL ENGINEERING OF NATIONAL I-LAN UNIVERSITY IN TAIWAN
Gwo-Chung Tsai

SESSION R3E - SPECIAL SESSION 16 – Curriculum Development and Practical Placement (I)
Chair: Vinod K Lohani (Virginia Tech, USA)

TWO COMPREHENSIVE U.S. STUDIES OF ENGINEERING EDUCATION REFORM
Ernest Smerdon, Jeffrey Russell

THE COMPARISON OF PROBLEM-BASED LEARNING (PMBL) MODEL AND PROJECT-BASED LEARNING (PTBL) MODEL
Jon-Chao Hong, Chan-Li Lin, Hui-Chin Huang

PRACTICAL CHALLENGES WITH A PBL IMPLEMENTATION IN ENGINEERING EDUCATION
Raija Tuohi, Janne Roslöf

WHY THE IDEA OF SPECIALIZATION OF UNIVERSITIES AND UNIVERSITY DEPARTMENTS SEEMS TO BE OUTDATED
Ali Amirfazli, Mohammad Hassan Saidi, M. Yaarahmadi

SESSION R3F - SPECIAL SESSION S17 – Problem-Oriented Study Projects
Chair: Anne Nortcliffe (Sheffield Hallam University, UK)

SOME RESULTS FROM MANAGING THE PROCESS OF GROUP FORMATION AND EVALUATION IN STUDENT PROJECTS
João Falcão e Cunha, José Luís Borges, Teresa Galvão

LEARNING ASPECTS OF PROCEDURES FOR SHIP CONCEPTUAL DESIGN BASED ON FIRST PRINCIPLES
Hernani Brinati, Mardel de Conti, Oscar Augusto

EVALUATION PROCESSES IN TUNE WITH NEW PERSONAL AND PROFESSIONAL PERSPECTIVES
Osvaldo Nakao, Hernani Brinati

CREATIVE USE OF SHAKE TABLE EXPERIMENTS FOR EDUCATION AND UNDERGRADUATE RESEARCH
Lisa Wang

A STUDY ON THE LEARNING ASSESSMENT OF A SANDWICH PROGRAM BASED ON CONSTRUCTIVISM
H.P. Feng, H.H Tsai, Y.R. Yang

SESSION R3G - SPECIAL SESSION S18 – Engineering Education Policies and Practice - Theory and Case Studies
Chair: Mihai Scarlete (Bishop’s University, Canada)

OVERVIEW AND BRIEF ANALYSIS OF FINANCING OF INNOVATIVE ACTIVITIES AND RESEARCH IN RUSSIA
Yury Chebotarevsky

IMPROVING STUDENT RETENTION – A SEQUEL TO A RECENT UWS REVIEW
Graham Bishop, Vojislav Ilic

EXPERIENCES IN COOPERATIVE COMPUTER ENGINEERING COURSE AT THE UNIVERSITY OF SÃO PAULO – Brazil
Paulo Sérgio Cugnasca, João Batista Camargo Junior, Jorge Rady Almeida Junior

RESEARCH INSTITUTIONALIZATION EFFORTS AT THE UNIVERSITY OF PUERTO RICO – MAYAGÜEZ
Yuri Rojas-Ramirez, David Suleiman-Rosado

PEDAGOGICAL COMPUTATIONAL ENVIRONMENT ABOUT THE BEHAVIOR AND DIMENSIONING OF COMPOSITE BEAMS
Maria Aparecida Costa, Walnório Ferreira, Rodrigo Camargo, Elisa Boina

SESSION R3H - SPECIAL SESSION S19 – Increasing the Participation in Industry, Education and Research of Minorities and Women
Chair: Bernardete Ribeiro (Universidade de Coimbra, FCTUC, Portugal)

INCORPORATING ETHICS AND SOCIAL RESPONSIBILITY IN UNDERGRADUATE ENGINEERING EDUCATION
Jessica Tucker, David Ferguson

LINKING INTERNSHIP PROGRAMS AND SCHOLARSHIP DONATIONS: ASSESSING INDUSTRY REINVESTMENT IN ENGINEERING EDUCATION
Susan Haag, Trina Corbin

BEING A FEMALE ENGINEER STUDENT: LESSONS FROM THE INDUSTRIAL ENGINEERING
Celina P. Leão, Carina Pimentel, Cristina S. Rodrigues

"WHAT REALLY MATTERS?": A CRITICAL RESEARCH STUDY OF THE ORGANIZATIONAL AND PERSONAL FACTORS INFLUENCING UNDERREPRESENTED ENGINEERING STUDENTS' RETENTION
Sharoni Little, Donna Buchanan, Jermaine Upshaw, Melora Sundt

FOSTERING THE ENGINEERING EDUCATION OF WOMEN UNDERGRADUATES
Chiejina E. Ottah

SESSION F1A - WHAT DEGREES FOR WHAT JOBS? – Entrepreneurship and Management
Chair: Jaana Suvininitty (Helsinki University of Technology, Finland)

LEVERAGING A RESEARCH CENTER OF EXCELLENCE TOWARDS THE EDUCATION OF ENGINEERING LEADERS
Michael Silevitch, Stephen McKnight, Mariah Nobrega

COOPERATIVE EDUCATION AS AN UNDERGRADUATE FEEDER INTO A GRADUATE LEVEL ENGINEERING LEADERSHIP PROGRAM
David Potter, Stephen McKnight, Michael Silevitch

THE STUDY OF SEMICONDUCTOR INDUSTRY MANAGER’ MANAGEMENT COMPETENCY AND TRAINING AND DEVELOPMENT IN TAIWAN
Ming-Ta Wu, Pei-Wen Liao, Yu-Shan Cheng

E-NETWORK FOR INCUBATION AND INNOVATION
Juan Villalvazo-Naranjo, Fernando Aldrete-Lozano, Luis-Enrique Montes-Haro

AUTOMATION OF ORGANIZATIONAL MANAGEMENT OF THE TECHNICAL HIGHER EDUCATION INSTITUTE’S FACULTY ON THE BASIS OF BALANCED SCORECARD
Alexander Bolshakov, Olga Dolinina, Kirill Zolotko

SESSION F1B - NEW APPROACHES AND TOOLS – Learning Computer Programming
Chair: To be assigned.

LEARNING TO PROGRAM - DIFFICULTIES AND SOLUTIONS
Anabela Gomes, António José Mendes

PROPOSAL FOR A MULTILANGUAGE TEACHING PROGRAMMING ENVIRONMENT
Rafael Fontao, Gustavo Goñi, Guillermo Kalocai, Gustavo Ramoscelli

THE IMPACT OF LEARNING STYLES IN INTRODUCTORY PROGRAMMING LEARNING
Lilian Carmo, Maria José Marcelino, António José Mendes

LEARNING STYLES IN AN E-LEARNING TOOL
Anabela Gomes, Álvaro Santos, Lilian Carmo, António José Mendes

LEARNING TO PROGRAM WITH PROGUIDE
Cristiana Areias, António Mendes, Anabela Gomes

SESSION F1C - NEW APPROACHES AND TOOLS – Electrical, Electronics and Control Engineering
Chair: To be assigned.

REMOTE PROCESS CONTROL AND MONITORING USING MATLAB
Martin Sysel, Ivan Pomykacz

INTERACTIVE EDUCATIONAL SOFTWARE FOR DYNAMIC SYSTEMS CONTROL
José Luis Lima, José Carvalho Gonçalves, Paulo Gomes Costa, António Paulo Moreira

PLC TRAINING BASED ON A 3D VIRTUAL MAQUETTE CONTROL: AN EDUCATIONAL EXPERIENCE IN Automation
José Luis Lima, José Carvalho Gonçalves
ROLE OF PSPICE IN THE ENGINEERING TEACHING ENVIRONMENT
Paul Tobin

COOPERATIVE LEARNING STRATEGY IN THE IMPROVEMENT OF AN ELECTRICAL POWER SYSTEM COURSE
Manuel Travassos Valdez, Cristina Faustino Agreira, Carlos Machado Ferreira, Fernando Maciel Barbosa

SESSION F1D - REDISCOVERING THE FOUNDATIONS – Physics (I)
Chair: To be assigned.

CURRICULUM INTEGRATION IN THE TEACHING OF PHYSICS TO FIRST YEAR ENGINEERING STUDENTS
Paulo Coelho de Oliveira, Francislê Neri de Souza, Nilza Costa, Cristina Gaspar de Oliveira

INTRODUCTORY PHYSICS COURSE FOR CIVIL ENGINEERING STUDENTS: A CURRICULAR PROPOSAL BASED ON PHYSICS EDUCATION RESEARCH
Filipe Amaral, João Carvalho, Helena Caldeira

THE QUALITY OF PHYSICS TEACHING IN ENGINEERING COURSES IN THE BOLOGNATRANSITION PERIOD: UNIVERSITY TEACHER’S CONCEPTIONS
Cristina Gaspar de Oliveira, Nilza Costa, Francislê Neri de Souza, Paulo Coelho de Oliveira

INVOLVING STUDENTS TO INDUSTRIAL PROJECTS
Andrzej Szlek

REAL WORK IN PHYSICS CLASSROOM: IMPROVING ENGINEERS STUDENTS COMPETENCES
Clara Viegas, Bernardino Lopes, José Paulo Cravino

SESSION F1E - REDISCOVERING THE FOUNDATIONS – Physics (II)
Chair: To be assigned.

A PREDICTIVE MODEL OF CHLORINATION BY-PRODUCTS FORMATION IN THE OZONATION/CHLORINATION PROCESSES
E-E Chang, Pen-Chi Chiang, I-Shu Li

STABILITY, DISPLACEMENT AND MODERATION OF CHEMICAL EQUILIBRIUM: REDISCOVERING LE CHATELIER’S PRINCIPLE
Claudio Olivera-Fuentes, Coray M. Colina

CHEMICAL PRODUCT ENGINEERING AND DESIGN: ACTIVE LEARNING THROUGH THE USE OF CASE STUDIES
Fernando P. Bernardo, Raquel Costa, Pedro M. Saraiva, Geoff D. Moggridge

FOUNDRY PROPERTIES OF BACKING SAND: SOME ENGINEERING STUDIES AND IMPROVEMENTS
P.A.O. Adegbuyi, J.O. Uhomobhi

SESSION F1F - NEW APPROACHES AND TOOLS – e-Learning (IV)
Chair: To be assigned.

FIXED-BED REACTOR MODELLING AND SIMULATION WITH E-LEARNING TOOLS
Margarida J. Quina, A.Cristina Almeida-Costa, Rosa M. Quinta-Ferreira

“BIG BANG” IN THE UNDERGRADUATE CHEMISTRY CURRICULUM VIA SYMBOLIC COMPUTATION
Mihai Scarlete, Starr Dostie, Benjamin Vail, Gavin Heverly-Coulson, Amber Findleton

ED-WAVE: AN EDUCATIONAL SOFTWARE FOR TRAINING ON WASTEWATER TECHNOLOGIES USING VIRTUAL APPLICATION SITES
Evan Diamadopoulos, Panagiota Paraskeva, Malini Balakrishnan, Vidya Batra, Andrzej Kraslawski

COMPUTATIONAL TOOLS FOR TEACHING GRADUATE COURSES IN GEOTECHNICAL ENGINEERING
Teresa Santana, Lamas Pedro

VISUAL SIMULATION OF CONSTRUCTION ACTIVITIES: DIDACTIC VIRTUAL MODELS
Alcynthia Sampaio, Pedro Gameiro Henriques
SESSION F1G - NEW APPROACHES AND TOOLS – e-Learning (V)
Chair: To be assigned.

AUTOMATIC GENERATION OF PARAMETRIC DRAWINGS USING DXF AND VISUAL BASIC
Sampaio Alcinia Zita, Antonio Costa
THE USE OF FREEWARE IN THE TEACHING OF ENGINEERING DESIGN GRAPHICS
Liang-Yee Cheng, Carolina Chaves Barbosa
THE USE OF INTERNET IN ENGINEERING EDUCATION IN BRAZIL
Elizabeth Marques, Carlos Augusto Oliveira
"VIRTUAL ASSEMBLY" - A WEB-BASED STUDENT LEARNING TOOL FOR THERMODYNAMICS CONCEPTS RELATED TO MULTISTAGING IN COMPRESSORS AND TURBINES
Sushil Chaturvedi, Tarek Abdel-Salam, Omkar Kasinadhuni
INTRODUCING SHEET METAL DESIGN AND MANUFACTURING USING CATIA V5 AND CNC EQUIPMENT IN AN AIRCRAFT MATERIALS COURSE
Ronald Sterkenburg, Ronald Sterkenburg

SESSION F1H - SPECIAL SESSION 16 – Curriculum Development and Practical Placement (II)
Chair: To be assigned.

PRACTICUM IN ENGINEERING CLASSROOM- A GRADUATE COURSE
Vinod Lohani, Hayden Griffin, Jenny Lo
A CASE STUDY ON THE PATH FROM ACADEMIC PRACTICES TO COMMERCIALIZATION IN STUDENT PROJECTS
Gunnar Andersson, Sissel Larsen, Frode Aamodt
TOWARDS THE DESIGN OF THE PROFESSIONAL PROFILES IN AN INDUSTRIAL ENGINEERING CURRICULUM
Néstor Jiménez, Roberto Zarama, Catalina Ramírez, Pinzón Luis
FIND LEARN STRATEGIES USING MULTIPLE INTELLIGENCES: CASE STUDY IN A DISCIPLINE AT ESCOLA POLÍTÉCNICA UNIVERSITY OF SAO PAULO
Sergio Brandi

PLENARY SESSION 4 - THE FUTURE OF COMPUTING – UTILITY COMPUTING AND THE IMPACT ON ENGINEERING EDUCATION
Invited Speaker: Michel Benard

CLOSING SESSION