

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 TOOL

Samuel Marcio Toffoli, Douglas Lauria, Maria Inês Piffer, Antonio Luis de Campos Mariani
INDRODUCING 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 Diaz 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-Piazza, 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 Tarn

ICT IN THE ENGINEERING AND MANAGEMENT

Juan Villalvazo-Naranjo, David Limón-Núñez, Luis-Hector Quintero-Hernández

THE INVESTMENTS OF THE PÉCS 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

Elzbieta Grzejszczyk
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 Palamutçuoğulları, 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, Gonzalo 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

Jirí 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

CONFEA – CONSELHO FEDERAL DE ENGENHARIA, ARQUITECTURA E AGRONOMIA

Representative from CONFEA

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 Rojter

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 Muqteet

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 Kvasdheim, Mari Mehlen, 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 Dorilêo Negretti, 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 VALÈNCIA

Paloma Moreno Clari, Vicente Cerverón Lleó

DEVELOPMENT OF AN INTELLIGENT ANSWERING MACHINE BASED ON LMS KNOWLEDGE

Manuel Castro, Sergio Martin, Elio Sancristobal, Rosario Gil, Juan peire
TECHNOLOGY INNOVATION IN TECHNICAL TEACHER EDUCATION

David Vanecek, Dana Dobrovská, Pavel Andres
KNOWLEDGE AND SKILLS REPRESENTATION IN VIRTUAL EDUCATION

Radoslav Fasuga, Jana Sarmanova, Marek Bober
.LRN CONSORTIUM: INTERNATIONAL COLLABORATION FOR DEVELOPING A
LEARNING MANAGEMENT SYSTEM. EXPERIENCE FROM THE UNIVERSITAT DE
VALÈNCIA

Paloma Moreno, Vicente Cerverón, Salvador Roca, Francisco Soler-Lahuerta, Darío Roig

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 IIN 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
PEQUEÑOS 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

Cornelia Connolly, Eamonn Murphy, Sarah Moore
UNLP EXPERIENCES TO REDUCE THE DIGITAL GAP
Viviana Harari, Claudia Mariana Cbanchoff Tzancoff, Francisco Javier Diaz
ENGINEERING EDUCATION AND COMPETENCES FOR SUSTAINABILITY EDUCATION
IN SPAIN
Mónica Edwards, Diego Álvarez-Sánchez, Luis M. Sánchez-Ruiz

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 Grilo, 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 Massatoshi 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 Uhomobhi (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, M^a 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 ASPECT 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 OF 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 Kuo, 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

Peter Moson, Ildiko Varga
IMPROVING STUDENT ACHIEVEMENT THROUGH AN INDUSTRY PLACEMENT
David Edwards
AN EXPERIENCE OF A NEW SCHEDULE FOR ENGINEERING EDUCATION TRAINING
THROUGH A CO-OPERATIVE PROGRAM
Mohammad Hassan Saidi, Ali Amirfazli, M. Yaarahmadi, M. Tavakolinia
INTEGRATING WORK INTEGRATED LEARNING
David Edwards
NEW CHALLENGES AT ESCOLA POLITÉCNICA OF UNIVERSITY OF SÃO PAULO
CONTINUED EDUCATION
Jorge Luis Risco Becerra, Selma Shin Shimizu Melnikoff, Antonio Marcos de Aguiar
Massola, José Roberto Cardoso, Leonardo Dominguez Dias
POST GRADUATE INDUSTRIAL PLACEMENTS FEEDING BACK INTO
UNDERGRADUATE PROVISION
Alan Casey, Stephen Goodfellow

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 Luis 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 APTITUDE 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

WEBLAB 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

Angles 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 Kaczmarczyk, 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 Pécs, 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 Dubrovski

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 Hirleman, 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

Oswaldo 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 Tytkowski (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

ILUSTRATED BY EXAMPLE OF ADVANCED 3D MODELING COURSE

Monika Sroka-Bizon, Krzysztof Bizon

OFFSETTING THE OBJECTS USING SEGMENTATIO

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 Tribolet

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, António 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

Patricia Lara dos Santos Matai, Shigueharu Matai

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

Karina 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 Dobrovska, Pavel Andres, David Vanecek, Antonin 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

Tadeusz Kuczynski, Alicja Kuczynska
ENGINEERING ETHICS EDUCATION IN CHINA: AN EFFECTIVE WAY TO INTEGRATE
HUMANITIES EDUCATION INTO ENGINEERING EDUCATION
Chui-qian Kong

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

IMPORTANCE OF LABORATORY EXPERIENCE IN GENERAL SUBJECTS

Jaromír Hrad

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, M^a Luisa
Navarro García

LOW-COST MINIATURIZED CHROMATOGRAPHIC COLUMNS FOR TEACHING

Rodrigo Amorim Motta Carvalho, Alexsander 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
OPTIMIZATION 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 Minamide, 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

Berhannudin 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

ALTERNATIVE AND AUGMENTATIVE COMMUNICATION AS UNDERGRADUATE
ENGINEERING PROJECTS

Anil Prabhakar, Namita Jacob

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

EXPERIMENTA@FEUP

Maria Teresa Restivo, José Couto Marques, Tito Vieira

**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 FRONTER
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 Uhomobhi, 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

Sorraya Khiewnavawongsa, 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, Abderrahmane 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

Munazzah 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 Coccozza

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 Díez, Ricardo Pizarro, Margarita Ortega

QUALITY SYSTEM FOR EXCELLENCE IN ENGINEERING EDUCATION

Shiena Shekhar, Arun Arora

TEACHING OF CLEAN ENERGY PRODUCTION IN THE SILESIA 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 Massatoshi 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

José Celso Freire Junior, Edson Luiz França Senne, Galeno José de Sena

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 Svab, 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 Svihla, 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 almotaleb Kheirallaa, Omer Adam Rahamab, Dina Mahmoud Abd-Ilkareemb, A.bu baker

Adam Saadelnoorb, 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 Ahmed

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. Digilov

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 Coccozza

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 ENAEE: 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 Čorejová, 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 Coehlo 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 Faddouli, Mohammed Khalidi Idrissi, Fayssal Smawi, Youssef Belqasmi

LEARNER TRACKING: WHICH SYSTEM?

Mohammed Khalidi Idrissi, Nour-eddine El Faddouli, 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

Oswaldo 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-Ramírez, 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 Suviiniitty (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, Lílian 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, Francislé 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, Francislé 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. Adegbuyi1, 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 CURRICULLUM 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
Alcínia Zita 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 CATIAV5 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 POLITÉCNICA 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