

# **2014 IEEE Global Engineering Education Conference**

**(EDUCON 2014)**

**Istanbul, Turkey  
3-5 April 2014**

**Pages 1-53:**



**IEEE Catalog Number: CFP14EDU-POD  
ISBN: 978-1-4799-3192-7**

# TABLE OF CONTENTS

<b>A NEW HARDWARE-IN-THE-LOOP SIMULATOR FOR CONTROL ENGINEERING EDUCATION</b> .....	1
<i>Usenmez, Serdar ; Yaman, Ulas ; Dolen, Melik ; Koku, A.Bugra</i>	
<b>USE COMPUTER GAME TO LEARN OBJECT-ORIENTED PROGRAMMING IN COMPUTER SCIENCE COURSES</b> .....	9
<i>Wong, Yoke Seng ; Mohamad Yatim, Maizatul Hayati ; Tan, Wee Hoe</i>	
<b>TO DEVELOP THE MANDARIN-PHONETIC-SYMBOL COMMUNICATION AID FOR HIGH-FUNCTIONING AUTISM CHILDREN</b> .....	17
<i>Chu, Yung-Long ; Chang, Shuping ; Zhao, Yu-Xiang ; Hsu, Feng-Chih ; You, Jia-Sheng ; Chou, Chien-Hsing</i>	
<b>TO DESIGN AN INTERACTIVE LEARNING SYSTEM FOR CHILD BY INTEGRATING BLOCKS WITH KINECT</b> .....	20
<i>Chen, Ke-Wei ; Hsu, Feng-Chih ; Hsieh, Yi-Zeng ; Chou, Chien-Hsing</i>	
<b>INTEGRATION OF LABORATORY EXPERIMENTS INTO INTRODUCTORY ELECTRICAL ENGINEERING COURSES: CONCEPT, IMPLEMENTATION AND COMPETENCE-BASED EVALUATION</b> .....	23
<i>Block, Brit-Maren</i>	
<b>A FIELD EXPERIMENT WITH AN ANIMATED INTELLIGENT TUTOR IN PORTUGAL</b> .....	30
<i>Santos, Gustavo ; Jorge, Joaquim ; Penalvo, Francisco Jose Garcia</i>	
<b>ORGANIZATION OF A LEGO-ROBOTS CONTEST OFFERED TO HIGH SCHOOL KIDS BY ENGINEERING STUDENTS WITHIN A PROJECT BASED LEARNING ENVIRONMENT</b> .....	36
<i>Rothe, Irene</i>	
<b>PAYLOAD DEVELOPMENT AND LAUNCH OF A STRATOSPHERE BALLOON MISSION</b> .....	40
<i>Altmann, A. ; Birkner, W. ; Hackl, F.X. ; Hanner, C. ; Liebhart, P. ; Metschl, S. ; Weck, F. ; Farnbauer, M. ; Heiss, M. ; Cuno, H.-H. ; Fuhrmann, T. ; Mandl, R. ; Mottok, J. ; Niemetz, M.</i>	
<b>STUDENT INTERACTIONS WITH E-LEARNING SYSTEMS: USER AND TOPIC ANALYSIS</b> .....	45
<i>Ugurlu, Yucel ; Hasegawa, Dai ; Sakuta, Hiroshi</i>	
<b>A HUMAN-LIKE EMBODIED AGENT LEARNING TOUR GUIDE FOR E-LEARNING SYSTEMS</b> .....	50
<i>Hasegawa, Dai ; Ugurlu, Yucel ; Sakuta, Hiroshi</i>	
<b>WHAT SURVEYS AND INTERVIEWS TELL US</b> .....	54
<i>Watterson, Craig A. ; Carnegie, Dale A.</i>	
<b>FACTORS THAT AFFECT THE DESIGN OF A SUCCESSFUL ENGINEERING PROGRAMME: A CASE STUDY</b> .....	62
<i>Carnegie, Dale A. ; Browne, Will N.</i>	
<b>ADDRESSING LOW-POWER ELECTRONICS IN A DIGITAL SYSTEM AND FPGA DESIGN COURSE</b> .....	69
<i>Winzker, Marco</i>	
<b>MIDDLEWARE SOLUTIONS FOR SERVICE-ORIENTED REMOTE LABORATORIES: A REVIEW</b> .....	74
<i>Tawfik, Mohamed ; Sancristobal, Elio ; Ros, Salva ; Hernandez, Roberto ; Robles, Antonio ; Caminero, Agustin ; Tobarra, Llanos ; Latorre, Miguel ; Garcia-Loro, Felix ; Carro, German ; Diaz, Gabriel ; Castro, Manuel</i>	
<b>RESEARCH WORKSHOP IN ENGINEERING EDUCATION — DRAFT OF NEW LEARNING</b> .....	83
<i>Jungmann, Thorsten ; Ossenberg, Philipp</i>	
<b>A WEB BASED TOOL FOR TEACHING HARDWARE DESIGN BASED ON THE PLAIN SIMPLE HARDWARE DESCRIPTION LANGUAGE</b> .....	88
<i>Becker, Karsten</i>	
<b>UNDERGRADUATE RESEARCH EXPERIENCE PROGRAM IN QATAR</b> .....	94
<i>Baig, Saira Dawer ; Hussain, Syed Imtiaz ; Qaraqe, Khalid A.</i>	
<b>A RETROSPECTIVE COURSE SURVEY OF GRADUATES TO ANALYSE COMPETENCIES IN SOFTWARE ENGINEERING</b> .....	100
<i>Gold, Carolin ; Abke, Jorg ; Sedelmaier, Yvonne</i>	
<b>THE GAMIFICATION OF DYNAMIC SPECTRUM ACCESS &amp; COGNITIVE RADIO</b> .....	107
<i>Sutton, Paul D. ; Doyle, Linda E.</i>	
<b>COMPETENCE COMPONENT OF THE PROJECT-ORIENTED TRAINING OF ELITE ENGINEERING SPECIALISTS</b> .....	114
<i>Zamyatina, Oxana M. ; Mozgaleva, Polina I.</i>	

<b>AN EXPERIMENTAL STUDY ON UML MODELING ERRORS AND THEIR CAUSES IN THE EDUCATION OF MODEL DRIVEN PLC PROGRAMMING .....</b>	<b>119</b>
<i>Duschl, Kerstin ; Obermeier, Martin ; Vogel-Heuser, Birgit</i>	
<b>INTERACTIVE TOOLS FOR TEACHING ELECTRICAL ENGINEERING .....</b>	<b>129</b>
<i>Vollrath, Jorg</i>	
<b>CAMPUSCONNECT: AN OPEN-SOURCE INITIATIVE TO CONNECT LEARNING MANAGEMENT SYSTEMS.....</b>	<b>134</b>
<i>Boehringer, David ; Bernlohr, Heiko</i>	
<b>USEFULNESS OF INFORMATION VISUALIZATIONS BASED ON EDUCATIONAL DATA.....</b>	<b>142</b>
<i>Tervakari, Anne-Maritta ; Silius, Kirsi ; Koro, Juho ; Paukkeri, Jukka ; Pirttila, Olli</i>	
<b>A TOOL FOR EVALUATING SOCIAL MEDIA ENHANCED LEARNING ENVIRONMENTS .....</b>	<b>152</b>
<i>Silius, Kirsi ; Tervakari, Anne-Maritta ; Pirttila, Olli ; Paukkeri, Jukka ; Makela, Teemu</i>	
<b>GENDER IN ENGINEERING EDUCATION.....</b>	<b>158</b>
<i>Pourrat, Yvonne ; Beraud, Andre</i>	
<b>ADAPTING TEACHING STRATEGIES TO GLOBAL AND ANALYTIC LEARNING STYLES BY REAL WORLD ENGINEERING PROJECTS .....</b>	<b>164</b>
<i>Daneti, Marlene</i>	
<b>ENGINEERING STUDENTS AND GRADUATES ON THE LABOUR MARKET: FACULTY OF INFORMATICS AND MANAGEMENT, UNIVERSITY OF HRADEC KRALOVE CASE STUDY.....</b>	<b>169</b>
<i>Simonova, Ivana ; Poulava, Petra</i>	
<b>USING APP INVENTOR AND LEGO MINDSTORM NXT IN A SUMMER CAMP TO ATTRACT HIGH SCHOOL GIRLS TO COMPUTING FIELDS .....</b>	<b>173</b>
<i>AlHumoud, Sarah ; Al-Khalifa, Hend S. ; Al-Razgan, Muna ; Alfaries, Auhood</i>	
<b>USING THE IPAD AS A PEDAGOGICAL TOOL TO ENHANCE THE LEARNING EXPERINCE FOR NOVICE PROGRAMING STUDENTS.....</b>	<b>178</b>
<i>Amer, Hoda ; Ibrahim, Walid</i>	
<b>STRUCTURE OF FACE-TO-FACE TEACHING SESSIONS FOR AN UNDERGRADUATE TECHNOLOGY-CENTERED COMPUTING COURSE: ESTABLISHING A SET OF BEST PRACTICES .....</b>	<b>184</b>
<i>Baumgartner, Ilse ; Shankararaman, Venky</i>	
<b>MEASURING THE COMPATIBILITY BETWEEN ENGINEERING STUDENTS' PERSONALITY TYPES AND MAJOR OF STUDY: A FIRST STEP TOWARDS PREVENTING ENGINEERING EDUCATION DROPOUTS.....</b>	<b>192</b>
<i>Ktoridou, Despo ; Epaminonda, Epaminondas</i>	
<b>TOWARDS ELECTRONIC EXAMS IN UNDERGRADUATE ENGINEERING .....</b>	<b>196</b>
<i>Richter, Thomas ; Boehringer, David</i>	
<b>INTRODUCTION TO MICROCOMPUTER TECHNOLOGY WITH THE MSP430 LAUNCH PAD IN REMOTE LABS.....</b>	<b>202</b>
<i>Versen, Martin ; Kipfelsberger, Stefan</i>	
<b>SOCIAL APPLICATIONS IN ENGINEERING EDUCATION.....</b>	<b>206</b>
<i>Cerna, Miloslava ; Poulava, Petra</i>	
<b>MODELLING POTENTIAL FOREIGN APPLICANT FLOW: CASE OF VIDZEME UNIVERSITY OF APPLIED SCIENCES .....</b>	<b>210</b>
<i>Nilanders, Karlis ; Cakula, Sarma</i>	
<b>DISTANCE TRAINING OF COMPUTER-BASED MEASUREMENTS AND INSTRUMENT CONTROL .....</b>	<b>216</b>
<i>Gergic, Bojan</i>	
<b>ENGAGING HIGH SCHOOL STUDENTS IN AN ENGINEERING THERMODYNAMICS PROJECT .....</b>	<b>222</b>
<i>Preciado Babb, Armando Paulino ; Saar, Candace ; Friesen, Sharon ; Brandon, Jim</i>	
<b>EDUCATIONAL POLICIES IN EUROPEAN ENGINEERING HIGHER EDUCATION SYSTEM - IMPLEMENTATION OF A SURVEY.....</b>	<b>229</b>
<i>Cojocaru, Dorian ; Popescu, Dorin ; Poboroniuc, Marian ; Ward, Tony</i>	
<b>DESIGN OF THE MONITORING SYSTEM OF A LEARNING ORGANIZER.....</b>	<b>235</b>
<i>Manso Vazquez, Mario ; Llamas Nistal, Martin</i>	
<b>FROM MANUALS TOWARDS PRODUCT EMBEDDED INTERACTIVE LEARNING ENVIRONMENTS .....</b>	<b>243</b>
<i>Puchleitner, Thomas ; Petrovic, Otto</i>	
<b>PREPARATORY MATHEMATICS COURSE FOR NON-TRADITIONAL ENGINEERING STUDENTS.....</b>	<b>249</b>
<i>Kalberer, Nina ; Tschirpke, Katrin ; Bohmer, Cornelia ; Beck-Meuth, Eva-Maria</i>	

<b>TOWARDS A FOLKSONOMY SOLUTION TO SUPPORT OPEN EDUCATIONAL ACTIVITIES AND RESOURCES IN EDU-AREA .....</b>	<b>257</b>
<i>Caeiro, Manuel ; Santos, Juan Manuel ; Llamas, Martin ; Lama, Manuel</i>	
<b>STUDY MATERIALS IN ONLINE COURSES ANALYSIS REFLECTING INDIVIDUAL LEARNING STYLES .....</b>	<b>267</b>
<i>Simonova, Ivana ; Poulova, Petra</i>	
<b>EXPERIENCES WITH DEPLOYING VISIR AT AL-QUDS UNIVERSITY IN JERUSALEM .....</b>	<b>273</b>
<i>Odeh, Salaheddin ; Alves, Gustavo Riberiro ; Anabtawi, Mahasen ; Jazi, Mahran ; Arekat, Mahmoud ; Gustavsson, Ingvar</i>	
<b>SEEKING CLUES TO PROMOTE THE PARTICIPATION OF WOMEN IN ELECTRICAL ENGINEERING STUDIES .....</b>	<b>280</b>
<i>Alejos, Ana V. ; Sanchez, Manuel Garcia ; Martin, Falcone Antonio Lopez ; Milagros, Maria Pilar</i>	
<b>TTC PROCESS CONTROL TRAINER: MOTIVATIONS AND THE DESIGN OF A LABORATORY TRAINER TO MEET SAUDI ARABIA EDUCATIONAL NEEDS .....</b>	<b>283</b>
<i>Dabroom, A.M. ; Iqbal, M.J. ; Tay, T.T. ; Shaukat, N. ; Mahamood, S.</i>	
<b>CROSS-CULTURAL ACTIVE LEARNING: QUALITATIVE RESULTS FROM AMERICANS TEACHING IN CHINA .....</b>	<b>289</b>
<i>Lord, Susan M. ; Jiajia, Wang ; Chang, Victor W. ; Kuang, Yinghui ; Tang, Yongming</i>	
<b>GAINING AND MAINTAINING STUDENT ATTENTION THROUGH COMPETITIVE ACTIVITIES IN COOPERATIVE LEARNING A WELL-RECEIVED EXPERIENCE IN AN UNDERGRADUATE INTRODUCTORY ARTIFICIAL INTELLIGENCE COURSE .....</b>	<b>295</b>
<i>Silapachote, Piyanuch ; Srisuphab, Ananta</i>	
<b>LEARNING ANALYTICS ON FEDERATED REMOTE LABORATORIES: TIPS AND TECHNIQUES .....</b>	<b>299</b>
<i>Orduna, Pablo ; Almeida, Aitor ; Lopez-de-Ipina, Diego ; Garcia-Zubia, Javier</i>	
<b>AN INDUSTRY SPONSORED UNDERGRADUATE RESEARCH (UR) EXPERIENCE: PRELIMINARY STUDY ON FULFILLMENT OF PROGRAM OUTCOMES AND INDUSTRY REQUIREMENTS .....</b>	<b>306</b>
<i>Kapusuz, Kamil Yavuz ; Kara, Ali</i>	
<b>VIRTUAL LABS AND REMOTE LABS: PRACTICAL EXPERIENCE FOR EVERYONE .....</b>	<b>312</b>
<i>Frerich, Sulamith ; Kruse, Daniel ; Petermann, Marcus ; Kilzer, Andreas</i>	
<b>USER PROFILE CREATION AND TRAINING MODE DETERMINATION IN THE “SMART LAB” SYSTEM .....</b>	<b>315</b>
<i>Makarova, Y. ; Krisilov, V. ; Vu, H.N. ; Langmann, R.</i>	
<b>A WEB PLATFORM FOR THE ASSESSMENT OF COMPETENCES IN MOBILE LEARNING CONTEXTS .....</b>	<b>321</b>
<i>Rayon Jerez, Alex ; Guenaga, Mariluz ; Nunez, Asier</i>	
<b>CAPSTONE DESIGN PROJECTS IN THE ENVIRONMENT OF WEAK INDUSTRY-ACADEMIA INTERACTION .....</b>	<b>330</b>
<i>Al-Bahi, Ali M. ; Taha, Mahmoud A. ; Turkmen, Nedim</i>	
<b>ATTRACTING, ENGAGING AND RETAINING STUDENTS IN ENGINEERING PROGRAMS — A CASE STUDY .....</b>	<b>335</b>
<i>Imran, A. ; Nasor, M. ; Hayati, F.</i>	
<b>RFID IN ELECTRONIC ENGINEERING EDUCATION .....</b>	<b>338</b>
<i>Grout, Ian ; Cesar Rodrigues da Silva, Alexandre</i>	
<b>AN EVALUATION FRAMEWORK BASED ON TIMED AUTOMATA FOR MALLEABLE LEARNING SCENARIO .....</b>	<b>344</b>
<i>Bensassi, Manel ; Laroussi, Mona</i>	
<b>USING E-JOURNALING TO IMPROVE SELF-REGULATED LEARNING IN INTRODUCTORY COMPUTER PROGRAMMING COURSE .....</b>	<b>352</b>
<i>Alhazbi, Saleh</i>	
<b>LECTURE MEETS LABORATORY EXPERIMENTAL EXPERIENCES FOR LARGE AUDIENCES: CONCEPT AND IMPLEMENTATION .....</b>	<b>357</b>
<i>Temmen, Katrin ; Nofen, Barbara ; Wehebrink, Markus</i>	
<b>A GRAPHICAL APPROACH FOR COMPARING QUALIFICATIONS .....</b>	<b>361</b>
<i>Gatteschi, Valentina ; Lamberti, Fabrizio ; Demartini, Claudio</i>	
<b>QUALITY DESPITE QUANTITY — TEACHING LARGE HETEROGENOUS CLASSES IN C PROGRAMMING AND FUNDAMENTALS IN COMPUTER SCIENCE .....</b>	<b>367</b>
<i>Vogel-Heuser, Birgit ; Rehberger, Sebastian ; Frank, Timo ; Aicher, Thomas</i>	

<b>UNIVERSITY-INDUSTRY COLLABORATION CHAIRS: INITIATIVES AT THE PUBLIC UNIVERSITY OF NAVARRE</b> .....	373
<i>Sanchis, P. ; Astrain, D. ; Lopez-Martin, A. ; Perez-Artieda, G. ; Gubia, E. ; Ursua, A. ; Barrenechea, E. ; Matias, I.R.</i>	
<b>ENGINEERING EDUCATION: TIME TO REFORM THE FRAGMENTED, CONTENT-OVERLOADED CURRICULA CONTEXT?</b> .....	377
<i>Ktoridou, Despo ; Eteokleous, Nikleia</i>	
<b>CLOUD-BASED FRAMEWORK FOR MOBILE LEARNING CONTENT ADAPTATION</b> .....	381
<i>Madjarov, Ivan</i>	
<b>FOSTERING INNOVATION IN ENGINEERING UNDERGRADUATE COURSES IN BRAZIL</b> .....	387
<i>Valadares, Eduardo de Campos ; e Silva Junior, Leonardo Jose</i>	
<b>A TOPIC ON SIMULATION IN TELECOMMUNICATIONS ENGINEERING</b> .....	391
<i>Barcelo-Arroyo, Francisco ; Martin-Escalona, Israel ; Zola, Enrica</i>	
<b>SOFTWARE ENGINEERING BODY OF SKILLS (SWEBOS)</b> .....	395
<i>Sedelmaier, Yvonne ; Landes, Dieter</i>	
<b>STUDENTS' SKILLS PERCEPTIONS FOR ENGINEERING</b> .....	402
<i>Depieri, Adriana Anunciatio ; Lopes, Roseli de Deus</i>	
<b>HANDLING RE-GRADING OF AUTOMATICALLY GRADED ASSIGNMENTS IN MOOCS</b> .....	408
<i>Renz, Jan ; Staubitz, Thomas ; Willems, Christian ; Klement, Hauke ; Meinel, Christoph</i>	
<b>PIRUS: A FILE STORAGE SERVICE IN CLOUD COMPUTING FOR EDUCATIONAL USE</b> .....	416
<i>Kallergis, Dimitrios ; Chimos, Konstantinos ; Vizikidis, Stefanos ; Karvounidis, Theodoros ; Bassios, Michael ; Douligeris, Christos</i>	
<b>STUDENT PERCEPTIONS AND ATTITUDES TOWARDS THE SOFTWARE FACTORY AS A LEARNING ENVIRONMENT</b> .....	422
<i>Ahmad, Muhammad Ovais ; Liukkunen, Kari ; Markkula, Jouni</i>	
<b>SELF-ASSESSMENT OF FRESHMEN STUDENTS' BASE COMPETENCIES</b> .....	429
<i>Zehetmeier, Daniela ; Kuhrmann, Marco ; Bottcher, Axel ; Schlierkamp, Kathrin ; Thurner, Veronika</i>	
<b>POSTCARDS FROM THE NEAR FUTURE: TOWARDS COMMUNICATING COMMUNICATIONS</b> .....	439
<i>Foley, Jessica ; McGettrick, Seamas ; Doyle, Linda</i>	
<b>FOSTERING COMPUTATIONAL THINKING IN ENGINEERING EDUCATION: CHALLENGES, EXAMPLES, AND BEST PRACTICES</b> .....	450
<i>Gross, Sebastian ; Kim, Mischa ; Schlosser, Joachim ; Mohtadi, Coorous ; Lluch, Dan ; Schneider, Dorian</i>	
<b>TEACHING FPGA-BASED SYSTEMS</b> .....	460
<i>Skliarova, Iouliia ; Sklyarov, Valery ; Sudnitson, Alexander ; Kruus, Margus</i>	
<b>A COURSE FOR TEACHING INTEGRATED SYSTEM DESIGN TO COMPUTER ENGINEERING STUDENTS</b> .....	470
<i>Zuolkernan, Imran A.</i>	
<b>LIGHTWEIGHT AD HOC ASSESSMENT OF PRACTICAL PROGRAMMING SKILLS AT SCALE</b> .....	475
<i>Staubitz, Thomas ; Renz, Jan ; Willems, Christian ; Jasper, Johannes ; Meinel, Christoph</i>	
<b>E-ASSESSMENT WITH INTERACTIVE IMAGES</b> .....	484
<i>Gusev, Marjan ; Ristov, Sasko ; Armenski, Goce ; Gushev, Pano ; Velkoski, Goran</i>	
<b>A NOTIFICATION MANAGER TO SUPPORT COLLABORATIVE LEARNING IN LMS MOODLE</b> .....	492
<i>Echeverria, Leovy ; Cobos, Ruth ; Morales, Mario</i>	
<b>INTEGRATING PRACTICAL CISCO CCNA COURSES IN THE COMPUTER NETWORKS' CURRICULUM</b> .....	499
<i>Gusev, Marjan ; Ristov, Sasko ; Donevski, Aleksandar</i>	
<b>A MODEL FOR ON-LINE EDUCATION OF ABET-REQUIRED PROFESSIONAL ASPECTS OF ENGINEERING</b> .....	507
<i>Barakat, Nael ; Plouff, Chris ; Sebastian, James R.</i>	
<b>ANTIPLAGIARISM IN EDUCATIONAL REMOTE LABORATORIES DONE RIGHT: TECHNOLOGICAL, EDUCATIONAL AND PSYCHOLOGICAL IMPLICATIONS</b> .....	515
<i>Titov, Igor ; Glotov, Alexander ; Bondarenko, Dmitry ; Savkin, Sergei</i>	
<b>THE ROLE OF UNIVERSITY-INDUSTRY LIAISONS IN ACHIEVING COMPREHENSIVE CURRICULA IN ENGINEERING</b> .....	519
<i>Falcone, Francisco ; Sanchis, Pablo ; Lopez-Martin, Antonio ; Milagros, Maria Pilar ; Alejos, Ana</i>	
<b>CUSTOMIZED WORK BASED LEARNING SUPPORT SYSTEM FOR LESS ACADEMICALLY PREPARED ADULTS IN ONLINE ENVIRONMENT</b> .....	523
<i>Jakobsone, Andra ; Motejlek, Jiri ; Cakula, Sarma</i>	

<b>APPROACHES FOR COMPETENCIES ASSESSMENT IN OPEN SOURCE E-LEARNING ENVIRONMENTS</b> .....	529
<i>Tuparov, Georgi ; Kostadinova, Hristina ; Tuparova, Daniela ; Raykova, Mariana</i>	
<b>THE USERS' EVALUATION OF AN ON-LINE COLLABORATIVE ACTIVITY FOR BUILDING ONTOLOGY</b> .....	533
<i>Jovanov, Mile ; Gusev, Marjan ; Mihova, Marija</i>	
<b>MAINTAINING QUALITY OF SOFTWARE ENGINEERING EDUCATION BY A SHARED REPOSITORY OF COURSE MATERIALS IN A MULTILATERAL SETTING</b> .....	539
<i>Bothe, Klaus ; Budimac, Zoran ; Putnik, Zoran ; Ivanovic, Mirjana ; Stoyanov, Stanimir ; Stoyanova-Doyceva, Asya ; Zdravkova, Katerina ; Jakimovski, Boro ; Jurca, Ioan ; Nocovic, Novica ; Kalpic, Damir ; Cico, Betim</i>	
<b>MOTIVATING PROGRAMMING STUDENTS BY PROBLEM BASED LEARNING AND LEGO ROBOTS</b> .....	544
<i>Lykke, Marianne ; Coto, Mayela ; Mora, Sonia ; Vandel, Niels ; Jantzen, Christian</i>	
<b>USE OF CUTTING EDGE EDUCATIONAL TOOLS FOR AN INITIAL PROGRAMMING COURSE</b> .....	556
<i>Giordano, Daniela ; Maiorana, Francesco</i>	
<b>INCORPORATION ON THE JOB-MARKET: FROM THEORY TO PRAXIS</b> .....	564
<i>Patino-Cambeiro, Faustino ; Patino-Barbeito, Faustino ; Goicoechea-Castano, Itziar ; Fenollera-Bolibar, Maria ; Rodriguez-Rodriguez, Javier</i>	
<b>SYNERGISTIC MODEL OF CONTENT EVOLUTION IN EDUCATIONAL PROGRAMS FOR IT INDUSTRY</b> .....	570
<i>Shukhman, Alexander E. ; Belonovskaya, Isabella D.</i>	
<b>DYNAMICAL EVALUATION OF ACADEMIC PERFORMANCE IN E-LEARNING SYSTEMS USING NEURAL NETWORKS MODELING (TIME RESPONSE APPROACH)</b> .....	574
<i>Mustafa, Hassan M.H. ; Al-Hamadi, Ayoub ; Dladlu, Nosipho ; Al-Shenawy, Nada M. ; El-Qwasmeh, Eyas</i>	
<b>3D VISUALIZATION TO AID ENGINEERING EDUCATION: A CASE STUDY TO VISUALIZE THE IMPACT OF WIRELESS SIGNALS ON HUMAN BRAIN</b> .....	581
<i>Nasir, Adnan ; Sheharyar, Ali ; Shakir, Muhammad Zeeshan ; Qaraqe, Khalid ; Bouhali, Othmane</i>	
<b>THE DEVELOPMENT OF A SUSTAINABLE PERCEPTION INDEX REGARDING GENDER AND DIVERSITY ASPECTS</b> .....	586
<i>Krause-Steger, Sandra ; Roski, Melanie</i>	
<b>AN ENGINEERING APPROACH TO DEVELOPING LECTURE MATERIAL FOR NEW STUDY COURSES</b> .....	592
<i>Studt, Reimer ; Weiss, Florian ; Mottok, Jurgen</i>	
<b>AUTHORING LEARNING DESIGNS: THE EXPRESSIVENESS OF IMS LD AND COLLABORATION SUPPORTS</b> .....	598
<i>Nurjanah, Dade</i>	
<b>INTEGRATION OF MANAGEMENT SERVICES FOR REMOTE/VIRTUAL LABORATORIES</b> .....	605
<i>Pastor-Vargas, R. ; Tobarra, Ll. ; Ros, S. ; Hernandez, R. ; Caminero, A. ; Robles, A. ; Castro, M. ; Diaz, G. ; Sancristobal, E. ; Tawfik, M.</i>	
<b>PROFILING STUDENTS' PERFORMANCE AND MEASURING THEIR PROGRESS IN THE AREA OF MULTIMEDIA COMMUNICATIONS</b> .....	611
<i>Papadakis, Andreas ; Tsaganou, Grammatiki ; Samarakou, Maria</i>	
<b>INTELLIGENT STUDENT PROFILING FOR PREDICTING E-ASSESSMENT OUTCOMES</b> .....	616
<i>Simjanoska, Monika ; Gusev, Marjan ; Ristov, Sasko ; Bogdanova, Ana Madevska</i>	
<b>DECONSTRUCTING REMOTE LABORATORIES TO CREATE LABORATORIES AS A SERVICE (LAAS)</b> .....	623
<i>Caminero, A.C. ; Robles-Gomez, A. ; Ros, S. ; Tobarra, Ll. ; Hernandez, R. ; Pastor, R. ; Castro, M.</i>	
<b>STUDENT SATISFACTION OF E-LEARNING TOOLS FOR COMPUTER ARCHITECTURE AND ORGANIZATION COURSE</b> .....	630
<i>Armenski, Goce ; Kostoska, Magdalena ; Ristov, Sasko ; Gusev, Marjan</i>	
<b>DIFFERENT TYPES OF TEAMWORK PROJECTS IN LEARNING MULTIMEDIA TECHNOLOGIES</b> .....	638
<i>Mihova, Marija ; Jovanov, Mile ; Stankov, Emil</i>	
<b>CLOUD E-LEARNING AND BENCHMARKING PLATFORM FOR THE PARALLEL AND DISTRIBUTED COMPUTING COURSE</b> .....	645
<i>Ristov, Sasko ; Gusev, Marjan ; Velkoski, Goran</i>	
<b>COMPARISON OF FRONTAL LECTURE AND WORKSHOP LEARNING ARRANGEMENTS IN A SOFTWARE ENGINEERING EDUCATION PROJECT</b> .....	652
<i>Schumm, Michael ; Soska, Alexander ; Joseph, Saskia ; Reschke, Michael ; Mottok, Jurgen ; Niemetz, Michael ; Schroll-Decker, Irmgard</i>	

<b>A PROCESS AND A TOOL TO ASSESS VOCABULARY LEARNING FOR COMPUTER SCIENCE ENGINEERS</b> .....	659
<i>Roda Garcia, Jose Luis ; Rodriguez Gil, Romen ; Lopez de Vergara M., Alejandro F.</i>	
<b>PROGRAMMING LITERACY LEVEL NEEDED FOR MODERN TEACHERS: FRAGILE BORDER BETWEEN CONTENT CREATOR AND A PROGRAMMER</b> .....	667
<i>Titov, Igor ; Kulmamirov, Serik ; Titov, Evgeny</i>	
<b>AN ARABIC ONTOLOGY-BASED LEARNING SYSTEM FOR CHILDREN WITH INTELLECTUAL CHALLENGES</b> .....	670
<i>Abdel Ghani Karkar ; Saleh, Moutaz ; Saad, Sawsan ; Al Ja'am, Jihad Mohamad</i>	
<b>BUILDING A SHARED UNDERSTANDING OF THE SKILLS AND COMPETENCES IN ORDER TO RESPOND TO THE CURRENT GLOBAL TECHNICAL CHALLENGES</b> .....	676
<i>Friesel, Anna ; Welzer, Tatjana ; Mrozek, Zbigniew ; Ward, Anthony ; Poboroniuc, Marian</i>	
<b>WEB ACCESSIBILITY EVALUATION OF MASSIVE OPEN ONLINE COURSES ON GEOGRAPHICAL INFORMATION SYSTEMS</b> .....	680
<i>Calle-Jimenez, Tania ; Sanchez-Gordon, Sandra ; Lujan-Mora, Sergio</i>	
<b>MODEL QUALITY ASSESSMENT OF EDUCATIONAL SERVICES CASE OF EDUCATIONAL INSTITUTIONS IN ZIPAQUIRÁ - COLOMBIA</b> .....	687
<i>Gil Malagon, Jose Antonio ; Medina Garcia, Victor Hugo</i>	
<b>A FRAMEWORK FOR DESIGNING A MARKET-ORIENTED CURRICULUM FOR THE DEGREE OF INFORMATION SYSTEM ENGINEERING</b> .....	695
<i>Alkazemi, Basem Y. ; Nour, Mohammed K. ; Sahrawi, Abdulqader Q. ; Basalamah, Anas M. ; Basalamah, Saleh M. ; Lahza, Hassan F. ; Grami, Grami M.A.</i>	
<b>SUPPORTING STUDENTS WITH SPECIAL NEEDS AT UNIVERSITY THROUGH PEER MENTORING</b> .....	701
<i>Tobajas, Felix ; De Armas, Valentin ; Cabello, Ma Dolores ; Grijalvo, Fernando</i>	
<b>INTEGRATING ENQUIRY-BASED LEARNING PEDAGOGIES AND REMOTE ACCESS LABORATORY FOR STEM EDUCATION</b> .....	706
<i>Maiti, Ananda ; Maxwell, Andrew D. ; Kist, Alexander A. ; Orwin, Lindy</i>	
<b>CONTEXTUALIZED ACHIEVEMENT OF ENGINEER'S COMPETENCES FOR SUSTAINABLE DEVELOPMENT</b> .....	713
<i>Urrego-Giraldo, German ; Giraldo G., Gloria Lucia</i>	
<b>ENGINEERING PRACTICE: TEACHING ILL-STRUCTURED PROBLEM SOLVING IN AN INTERNSHIP-LIKE COURSE</b> .....	721
<i>Bozic, Marija ; Cizmic, Svetlana ; Pavlovic, Dragana Sumarac ; Escalas Tramullas, M.Teresa</i>	
<b>COMPUTER SIMULATION AT SCHOOL SCRATCH AND PROGRAMMING LANGUAGE CHOOSING CRITERIA</b> .....	727
<i>Dzhenzher, Vadim O.</i>	
<b>THE IMPROVEMENT OF CONFIDENCE LEVEL OF STUDENTS LEARNING THERMODYNAMICS THROUGH A MULTIMEDIA COURSEWARE</b> .....	733
<i>Mulop, Normah ; Mohd Yusof, Khairiyah ; Tasir, Zaidatun</i>	
<b>TEACHING BASIC CONTROL CONCEPTS WITH A HOME-MADE THERMAL SYSTEM</b> .....	739
<i>Ovalle M, Diana Marcela ; Combata A., Luis Francisco</i>	
<b>THE EFFECTIVENESS OF JUNIOR COMPANIES FROM THE VIEWPOINT OF ENGINEERING STUDENTS AT A BRAZILIAN UNIVERSITY</b> .....	745
<i>Maria Bogo, Adelaide ; Henning, Elisa ; Christian Schmitt, Alan ; Gehlen De Marco, Rodrigo</i>	
<b>DESIGNING A PROFICIENT ACADEMIC SCIENCE EDUCATION FOR THE GIFTED YOUTH</b> .....	751
<i>Pyetan, Erez ; Oni-Grinberg, Adar ; Nevo, Uri ; Shofty, Shira ; Yankielowicz, Shimon</i>	
<b>THE ROLE OF TEACHING DECISION ANALYSIS FOR SUSTAINABILITY IN ENGINEERING SCHOOLS</b> .....	755
<i>Joao, Isabel M. ; Quadrado, Jose C.</i>	
<b>SCALABLE AND ELASTIC E-ASSESSMENT CLOUD SOLUTION</b> .....	762
<i>Ristov, Sasko ; Gusev, Marjan ; Armenski, Goce ; Velkoski, Goran</i>	
<b>A REVIEW OF WEBAPP AUTHORIZING TOOLS FOR E-LEARNING</b> .....	770
<i>Latorre, M. ; Robles-Gomez, A. ; Rodriguez, L. ; Orduna, P. ; San Cristobal, E. ; Caminero, A.C. ; Tobarra, Ll. ; Lequerica, I. ; Ros, S. ; Hernandez, R. ; Castro, M. ; Lopez-de-Ipina, D. ; Garcia-Zubia, J.</i>	
<b>TEAMWORK COMPETENCE AND ACADEMIC MOTIVATION IN COMPUTER SCIENCE ENGINEERING STUDIES</b> .....	778
<i>Perez Martinez, Jorge E. ; Garcia Martin, Javier ; Sierra Alonso, Almudena</i>	
<b>DEVELOPING MOODLE PLUGIN FOR CREATING LEARNING CONTENT WITH ANOTHER REST FUNCTION CALL</b> .....	784
<i>Kautsar, Irwan Alnarus ; Musashi, Yasuo ; Kubota, Shin-Ichiro ; Sugitani, Kenichi</i>	

<b>SOFTWARE ENGINEERING IN A NUTSHELL FOR ELECTRICAL ENGINEERING STUDENTS</b> .....	788
<i>von Schwerin, Marianne</i>	
<b>USING FPGA DEVELOPMENT BOARDS FOR MULTI-COURSE LABORATORY SUPPORT</b> .....	794
<i>Haba, Cristian-Gyozo</i>	
<b>MATCHING LEARNING STYLES TO DIFFERENT TYPE OF DSP LABORATORY EXPERIMENTS</b> .....	798
<i>Krneta, Radojka ; Milosevic, Marjan ; Damnjanovic, Djordje ; Milosevic, Danijela</i>	
<b>AUGMENTED REALITY TO IMPROVE STEM MOTIVATION</b> .....	803
<i>Restivo, Teresa ; Chouzal, Fatima ; Rodrigues, Jose ; Menezes, Paulo ; Lopes, J. Bernardino</i>	
<b>SUMMATIVE EEG ALPHA CLASSIFICATION RELATES LEARNING STYLE AND OPENNESS</b> .....	807
<i>Abdul Rashid, Nazre bin ; Taib, Mohd.Nasir bin ; Hj.Murat, Zunairah binti ; S.Abd.Kadir, Ros Shilawani binti ; Lias, Sahrim bin ; Sulaiman, Norizam bin</i>	
<b>INTRODUCING CAD/CAM AND CNC MACHINING BY USING A FEATURE BASED METHODOLOGY IN A MANUFACTURING LAB COURSE, A CONCEPTUAL FRAME WORK</b> .....	811
<i>Iqbal, Hassan ; Sheikh, Anwar.K. ; Abdul Samad, M.</i>	
<b>MULTIPLE-CHOICE TESTING: KNOWLEDGE, OR RANDOM CHOICE?</b> .....	819
<i>Simonova, Ivana</i>	
<b>DEVELOPMENT OF INFORMATION SYSTEM FOR STUDENTS' PROJECT ACTIVITY MANAGEMENT</b> .....	824
<i>Gulyaeva, Kseniya V. ; Mozgaleva, Polina I. ; Zamyatina, Oxana M.</i>	
<b>AN ENHANCED BAYESIAN NETWORK MODEL FOR PREDICTION OF STUDENTS' ACADEMIC PERFORMANCE IN ENGINEERING PROGRAMS</b> .....	832
<i>Sharabiani, Ashkan ; Karim, Fazle ; Sharabiani, Anooshiravan ; Atanasov, Mariya ; Darabi, Houshang</i>	
<b>DEVELOPING ANDROID CLIENT APPLICATIONS FOR ONLINE LABORATORIES</b> .....	838
<i>Deaky, Bogdan-Alexandru ; Parv, Luminita</i>	
<b>USING THE CHIPKIT TO APPLY A NOVEL CONCEPT FOR CONFIGURING EMBEDDED ONLINE LABS</b> .....	844
<i>Deaky, Bogdan-Alexandru ; Parv, Luminita ; Faustino Andrade, Tiago</i>	
<b>A 360-DEGREE EVALUATION FRAMEWORK FOR DOCTORAL PROGRAMS</b> .....	850
<i>Calatrava Moreno, Maria del Carmen</i>	
<b>THE COLOR OF THE LIGHT: A REMOTE LABORATORY THAT USES A SMART DEVICE THAT CONNECTS TEACHERS AND STUDENTS</b> .....	854
<i>Carro, German ; Castro, Manuel ; Sancristobal, Elio ; Diaz, Gabriel ; Mur, Francisco ; Latorre, Miguel ; Chaparro, Mercedes ; Lopez-Rey, Africa ; Salzmann, Christophe ; Gillet, Denis</i>	
<b>A ROBOTIC ARM SIMULATOR SOFTWARE TOOL FOR USE IN INTRODUCTORY ROBOTICS COURSES</b> .....	861
<i>Gonzalez, Fernando ; Zalewski, Janusz</i>	
<b>SERIOUS GAMES AS EDX MOOC ACTIVITIES</b> .....	867
<i>Freire, Manuel ; del Blanco, Angel ; Fernandez-Manjon, Baltasar</i>	
<b>APPLYING LEARNING ANALYTICS TO SIMPLIFY SERIOUS GAMES DEPLOYMENT IN THE CLASSROOM</b> .....	872
<i>Serrano-Laguna, Angel ; Fernandez-Manjon, Baltasar</i>	
<b>FREE/OPEN SOURCE SOFTWARE PROJECTS AS EARLY MOOCS</b> .....	878
<i>Robles, Gregorio ; Plaza, Hugo ; Gonzalez-Barahona, Jesus M.</i>	
<b>EXPERIENCES OF RUNNING MOOCS AND SPOCS AT UC3M</b> .....	884
<i>Delgado Kloos, Carlos ; Munoz-Merino, Pedro J. ; Munoz-Organero, Mario ; Alario-Hoyos, Carlos ; Perez-Sanagustin, Mar ; Parada G., Hugo A. ; RUIPEREZ, Jose A. ; Sanz, Juan Luis</i>	
<b>MONITORING STUDENTS' MOBILE APP CODING BEHAVIOR DATA ANALYSIS BASED ON IDE AND BROWSER INTERACTION LOGS</b> .....	892
<i>Fuchs, Markus ; Heckner, Markus ; Raab, Felix ; Wolff, Christian</i>	
<b>REPRESENTING EXAMINATION QUESTION KNOWLEDGE INTO GENETIC ALGORITHM</b> .....	900
<i>Ibrahim Teo, Noor Hasimah ; Abu Bakar, Nordin ; Abd Rashid, Mohamad Rezduan</i>	
<b>TOWARDS A COLLABORATIVE PEDAGOGICAL MODEL IN MOOCS</b> .....	905
<i>Claros, Ivan ; Garmendia, Antonio ; Echeverria, Leovy ; Cobos, Ruth</i>	
<b>BUILDING AN UNDERGRADUATE ROBOTICS LABORATORY SERVING THE STEM CURRICULUM</b> .....	912
<i>Zalewski, Janusz ; Gonzalez, Fernando</i>	
<b>NEURAL NETWORK AND LINEAR REGRESSION METHODS FOR PREDICTION OF STUDENTS' ACADEMIC ACHIEVEMENT</b> .....	916
<i>Mohd Arsad, Pauziah ; Buniyamin, Norlida ; Ab Manan, Jamalul-lail</i>	



<b>NEW CONCEPTS OF AUTOMATIC ANSWER EVALUATION IN COMPETENCE BASED LEARNING.....</b>	<b>922</b>
<i>Umbleja, Kadri ; Kukk, Vello ; Jaanus, Martin ; Udal, Andres</i>	
<b>UNIFIED, MULTIPLE TARGET, COMPUTER ENGINEERING LEARNING PLATFORM.....</b>	<b>926</b>
<i>Zagar, Martin ; Frid, Nikolina ; Knezovic, Josip ; Hofman, Daniel ; Kovac, Mario ; Sruk, Vlado ; Mlinaric, Hrvoje</i>	
<b>BRINGING THE INQUIRING MIND BACK INTO THE LABS A CONCEPTUAL FRAMEWORK TO FOSTER THE CREATIVE ATTITUDE IN HIGHER ENGINEERING EDUCATION .....</b>	<b>930</b>
<i>Terkowsky, Claudius ; Haertel, Tobias ; Bielski, Emanuel ; May, Dominik</i>	
<b>YOUTH INTERESTS AS VEHICLES FOR THE ACQUISITION OF TECHNOLOGICAL COMPETENCE: INSIGHTS FROM TWO PARTICIPATORY PROJECTS.....</b>	<b>936</b>
<i>Berger, Thomas ; Hofstatter, Birgit ; Thaler, Anita ; Freitag, Daniela</i>	
<b>EXPLOITING THE SYNERGIES BETWEEN ROBOTICS AND SOFTWARE ENGINEERING: A PROJECT-BASED LABORATORY.....</b>	<b>939</b>
<i>Brugali, Davide</i>	
<b>THE EOLES PROJECT .....</b>	<b>943</b>
<i>Vaz Fidalgo, Andre ; Gericota, Manuel ; Barataud, Denis ; Andrieu, Guillaume ; De Craemer, Renaat ; Cristea, Mihai ; Benachenhou, Abdelhalim ; Ankrim, Mohammed ; Bouchlaghem, Karim ; Ferreira, Paulo</i>	
<b>WIKI AS A KNOWLEDGE MANAGEMENT TOOL AT THE MULTICULTURAL SCHOOL OF ATHENS.....</b>	<b>947</b>
<i>Kalagiakos, Panagiotis ; Koumpouros, Ioannis</i>	
<b>RECOMMENDER SYSTEM FOR WEB 2.0 SUPPORTED ELEARNING.....</b>	<b>953</b>
<i>Holenko Dlab, Martina ; Hoic-Bozic, Natasa</i>	
<b>ENGAGING STUDENTS WITH A MOBILE GAME-BASED LEARNING SYSTEM IN UNIVERSITY EDUCATION.....</b>	<b>957</b>
<i>Bartel, A. ; Hagel, G.</i>	
<b>CONTROLLING QUAD-COPTERS A PROJECT-BASED APPROACH IN THE TEACHING OF APPLICATION DESIGN .....</b>	<b>961</b>
<i>Winterfeldt, Gotz ; Hahne, Christina</i>	
<b>A PRACTICE-BASED MOOC FOR LEARNING ELECTRONICS.....</b>	<b>969</b>
<i>Garcia, Felix ; Diaz, Gabriel ; Tawfik, Mohamed ; Martin, Sergio ; Sancristobal, Elio ; Castro, Manuel</i>	
<b>THE BLUE TRACK SUSTAINABILITY IN THE STUDY PROGRAMS OF MECHANICAL AND ELECTRICAL ENGINEERING .....</b>	<b>975</b>
<i>Gross, Iris ; Rorig, Horst ; Franke, Dieter ; Seuser, Katharina</i>	
<b>TOPICAL TAPESTRY: WEAVING THREADS OF PARALLEL PROGRAMMING, COMPUTER GRAPHICS, AND ARTIFICIAL INTELLIGENCE INTO UNDERGRADUATE CS COURSES .....</b>	<b>979</b>
<i>Wolfer, James</i>	
<b>JUST-IN-TIME TEACHING IN SOFTWARE ENGINEERING: A CHINESE-GERMAN EMPIRICAL CASE STUDY .....</b>	<b>983</b>
<i>Tao, Ye ; Liu, Guozhu ; Mottok, Jurgen ; Hackenberg, Rudi ; Hagel, Georg</i>	
<b>IEEE DIRECT TO STUDENT PROGRAM (D2S): CHANGING DYNAMICS OF EDUCATION AND INNOVATION .....</b>	<b>987</b>
<i>Mandal, Subhamoy ; Usop, Kauthar ; Ong, Rainier ; Gonzalez, Emmanuel A ; Reilly, Rob</i>	
<b>EXPERIMENTAL MODELLING VS. NUMERICAL SIMULATION IN GEOTECHNICAL TRAINING.....</b>	<b>991</b>
<i>Marques, Jose Couto</i>	
<b>PROBLEMS ENCOUNTERED IN TECHNICAL EDUCATION OF THE BLIND, AND RELATED AIDS: VIRTUAL CUBARYTHMS AND 3D DRAWINGS.....</b>	<b>995</b>
<i>Mikulowski, Dariusz ; Brzostek-Pawlowska, Jolanta</i>	
<b>ARE THERE COMPETENCES EVERY COMPUTER SCIENTIST SHOULD HAVE? .....</b>	<b>999</b>
<i>Broker, Kathrin ; Magenheim, Johannes</i>	
<b>ALLES ING! COUNT ME IN! ATTRACTING HUMAN TALENTS IN PROVIDING OPEN ACCESS TO UNIVERSITIES WITH FOCUSING ON INDIVIDUAL OPPORTUNITIES IN ENGINEERING SCIENCES.....</b>	<b>1003</b>
<i>Zeuch, Mark ; Janssen, Theresa ; Petermann, Marcus ; Kilzer, Andreas</i>	
<b>STAKEHOLDERS-ORIENTED QUALITY OF EDUCATION ASSURANCE SYSTEM FOR SUCCESSFUL INSTITUTIONAL ACCREDITATION .....</b>	<b>1006</b>
<i>Moscinska, Katarzyna</i>	
<b>DEVELOPING A GRADUATE LEVEL EMBEDDED SYSTEM PROGRAMMING COURSE CONTENT BY USING BLENDED PROGRAMMING METHODOLOGIES: TEXT-BASED AND GRAPHICAL.....</b>	<b>1010</b>
<i>Korkmaz, Hayriye ; Cosgun, Ercan ; Azaklar Bal, Sezen ; Toker, Kenan</i>	

<b>DESIGNING ROBOTIC AVATARS IN SECOND LIFE - A TOOL TO COMPLEMENT ROBOTICS EDUCATION</b> .....	1016
<i>Buiu, Catalin ; Gansari, Mihai</i>	
<b>NEW SUSTAINABLE TEACHING APPROACHES IN SOFTWARE ENGINEERING EDUCATION</b> .....	1019
<i>Kropp, Martin ; Meier, Andreas</i>	
<b>EVALUATION OF STUDENT PERFORMANCE IN LABORATORY APPLICATIONS USING FUZZY DECISION SUPPORT SYSTEM MODEL</b> .....	1023
<i>Yildiz, Zehra ; Baba, A.Fevzi</i>	
<b>TOWARDS A SOCIAL E-LEARNING PLATFORM FOR DEMANDING USERS</b> .....	1028
<i>Valtolina, Stefano ; Mesiti, Marco ; Epifania, Francesco ; Apolloni, Bruno</i>	
<b>VOLITION-DRIVEN ADAPTION FOLLOWING THE INDIVIDUAL GOALS OF ENGINEERS IN E-LEARNING PROCESSES</b> .....	1032
<i>Heimbuch, Alexander ; Saul, Christian ; Lucht, Martina</i>	
<b>STUDENT EXCHANGE PROGRAMS IN ENGINEERING SCIENCES BETWEEN USA AND GERMANY</b> .....	1038
<i>Strenger, Natascha ; Petermann, Marcus ; Frerich, Sulamith</i>	
<b>TRANSITION IN STUDENT MOTIVATION DURING A SCRATCH AND AN APP INVENTOR COURSE</b> .....	1042
<i>Nikou, Stavros A. ; Economides, Anastasios A.</i>	
<b>WHAT SHOULD THEY LEARN? A SHORT COMPARISON BETWEEN DIFFERENT AREAS OF COMPETENCE AND ACCREDITATION BOARDS' CRITERIA FOR ENGINEERING EDUCATION</b> .....	1046
<i>May, Dominik ; Terkowsky, Claudius</i>	
<b>WORK IN PROGRESS - ROLE OF LEARNING STRATEGIES IN ELECTRICAL CIRCUITS AND ANALOG ELECTRONICS COURSES</b> .....	1051
<i>Ramirez-Echeverry, Jhon J. ; Olarte, Andres ; Garcia-Carrillo, Agueda</i>	
<b>EDUCATIONAL ROBOTICS AS LEARNING TOOLS WITHIN THE TEACHING AND LEARNING PRACTICE</b> .....	1055
<i>Eteokleous, Nikleia ; Ktoridou, Despo</i>	
<b>LANDSCAPE FORMAT - A COURSE CONCEPT TO STIMULATE INTERDISCIPLINARY DIALOGUE</b> .....	1059
<i>Berbuir, Ute ; Berens, Tobias ; Petermann, Marcus ; Wagner, Pia</i>	
<b>SIMPLE AND ACHIEVABLE EDUCATIONAL PROJECTS BY INTERCONNECTING DIFFERENT INTEGRATED CIRCUITS</b> .....	1062
<i>Rodrigues Quintas, Manuel ; Faustino Andrade, Tiago ; Restivo, Maria Teresa ; Caracinha, Diogo</i>	
<b>IDENTIFYING BASE COMPETENCIES AS PREREQUISITES FOR SOFTWARE ENGINEERING EDUCATION</b> .....	1069
<i>Thurner, Veronika ; Botcher, Axel ; Kamper, Andreas</i>	
<b>USING MOBILE DEVICES &amp; SOCIAL MEDIA IN SUPPORTING ENGINEERING EDUCATION</b> .....	1077
<i>Khan, M M H ; Chiang, Jeffrey C L</i>	
<b>COMPETENCE BASED INTERACTIVE LEARNING WITH HOMELABKITS: EXPERIENCE AND WORK IN PROGRESS</b> .....	1082
<i>Jaanus, Martin ; Umbleja, Kadri ; Kukk, Vello ; Udal, Andres</i>	
<b>TEACHING "DESIGN FIRST" INTERLEAVED WITH OBJECT-ORIENTED PROGRAMMING IN A SOFTWARE ENGINEERING COURSE</b> .....	1085
<i>Giordano, Daniela ; Maiorana, Francesco</i>	
<b>A LABVIEW BASED EXPERIMENT EXECUTION ENGINE TO EASE THE DEVELOPMENT OF ISA BATCH LAB SERVERS</b> .....	1089
<i>Zutin, Danilo G. ; Auer, Michael</i>	
<b>APPLICATION OF REMOTE EXPERIMENTS IN BASIC EDUCATION THROUGH MOBILE DEVICES</b> .....	1093
<i>de Lima, J.P.C. ; Rochadel, W. ; Silva, A.M. ; Simao, J.P.S. ; da Silva, J.B. ; Alves, J.B.M.</i>	
<b>PREPARATION ON CULTURAL DIFFERENCES FOR ALL</b> .....	1097
<i>Welzer, Tatjana ; Holbl, Marko ; Druzovec, Marjan ; Jaakkola, Hannu</i>	
<b>USING LABVIEW FOR BUILDING LABORATORY SERVER: PROS AND CONS, DESIGN PATTERNS, SOFTWARE ARCHITECTURING AND COMMON PITFALLS</b> .....	1101
<i>Titov, Igor</i>	
<b>LOOKING FOR SUSTAINABLE SOFTWARE FOR EDUCATION IN DEVELOPING COUNTRIES</b> .....	1108
<i>Munoz-Hernandez, Susana</i>	

<b>SUPPORTING OPENNESS OF MOOCS CONTENTS THROUGH OF AN OER AND OCW FRAMEWORK BASED ON LINKED DATA TECHNOLOGIES .....</b>	<b>1112</b>
<i>Piedra, Nelson ; Chicaiza, Janneth ; Lopez, Jorge ; Tovar Caro, Edmundo</i>	
<b>ACCREDITATION PROCESS FOR ENGINEERING PROGRAMS IN SAUDI ARABIA: CHALLENGES AND LESSONS LEARNED .....</b>	<b>1118</b>
<i>Abou-Zeid, Azza ; Taha, Mahmoud A.</i>	
<b>REQUIREMENTS ON LEARNING ANALYTICS FOR FACILITATED AND NON FACILITATED GAMES .....</b>	<b>1126</b>
<i>Baalsrud Hauge, Jannicke ; Kalverkamp, Matthias ; Bellotti, Francesco ; Berta, Riccardo ; De Gloria, Alessandro ; Barabino, Giulio</i>	
<b>HETEROGENEOUS ABILITY-CENTERED TEAM BUILDING TO AID ENQUIRY BASED LEARNING IN ENGINEERING CLASSROOM .....</b>	<b>1133</b>
<i>Shakir, Muhammad Zeeshan ; Baig, Saira Dawer ; Imran, Muhammad Ali ; Hussain, Syed Imtiaz ; Abbasi, Qammer Hussain ; Qaraqe, Khalid A.</i>	
<b>VISIR WORK IN PROGRESS .....</b>	<b>1139</b>
<i>Gustavsson, Ingvar ; Zackrisson, Johan ; Lundberg, Jenny</i>	
<b>VIRTUAL -C A PROGRAMMING ENVIRONMENT FOR TEACHING C IN UNDERGRADUATE PROGRAMMING COURSES .....</b>	<b>1142</b>
<i>Pawelczak, Dieter ; Baumann, Andrea</i>	
<b>AUTHOR INDEX</b>	