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DOC 2014-09 Proposal for MS in Computer Engineering (MSCPE)

University of Dayton. School of Engineering

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PROPOSAL TO THE ACADEMIC SENATE

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Proposal:

MS in Computer Engineering (MSCPE)

University of Dayton

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Designation of New Degree Program

The School of Engineering and the College of Arts and Sciences at the University of Dayton propose to offer a new interdisciplinary Master of Science degree in Computer Engineering (MSCPE). The proposed MSCPE program will build upon both an MS degree program in Electrical Engineering (MSEE) as well as the Master's degree program in Computer Science (MCS).

The interdisciplinary MS degree will be offered through a collaboration of the Department of Electrical and Computer Engineering (ECE) within the School of Engineering and the Department of Computer Science (CPS) within the College of Arts and Sciences. This program will be housed in the ECE department, and students will be admitted to the program by the Graduate Program Director of Computer Engineering. The program director is expected to consult with both ECE and CPS faculty as required. CPE is a discipline that is growing rapidly. Recent polls show that a large percentage of engineers employed in the United States are CPEs. CPE is a discipline that involves both computer hardware and software design. Current courses already taught within ECE and CPS departments are sufficient to develop a curriculum for CPE.

Description of Proposed Curriculum

Traditionally, computer engineering involves the understanding and design of hardware and software components of modern day computing systems. Different levels of abstraction of a computing environment from VLSI (very large scale integrated circuits) design, to hardware description language design, to assembly instructions, and high-level computing languages are all part of the computer engineering discipline. Additional areas of computer engineering include, but are not limited to artificial intelligence, image processing, and robotics. A computer engineer may specialize in any aspect of levels of abstraction and different computing environments, but should be familiar with all. Computer engineers work in areas from chip design and layout, circuit board design, as well as the design, implementation and deployment of embedded software.

The proposed 30 semester hour curriculum is designed to educate individuals with the requisite skills and knowledge to meet these needs and includes both a thesis and a non-thesis option. All students will complete a 9 semester-hour core of 3 courses chosen from the following five courses: (1) Contemporary Digital Design, (2) Operating Systems, (3) Computer Design, (4) Data Communications, and (5) Embedded Systems. Students will have the flexibility to choose three of these five courses. Of the 5 core courses, 3 are housed within the ECE department, and 2 are within CPS. Each student must complete 3 semester-hours of CPS courses and 6 semester-hours of ECE courses of the available core.

Students completing a thesis will enroll in 3 specialization courses for 9 semester hours. Of these 3 courses, one must be a CPS course, and two must be ECE courses. Students will also be allowed 6 semester hours of technical electives. Each student will, in addition, enroll in 6 thesis semester hours.

Students who are not completing a thesis will complete 12 specialization semester hours, and 9 technical electives semester hours. All students, particularly those who express a desire to pursue doctoral training, will be encouraged to complete a thesis. If a student is a research assistant employed by the university, then they will be required to write a thesis. Thesis advisory committees will be interdisciplinary and include three faculty members chosen from the School of Engineering and the College of Arts and Sciences. Choice of appropriate electives that build on areas represented in the core may be used to develop a specialization. Upon entry into the program, each student, in consultation with her/his advisor will develop a program of study that will be used annually to evaluate progress toward the degree. Details of the proposed curriculum can be found in Appendix A.

Applicants must hold a baccalaureate degree in an appropriate area of study (e.g., electrical engineering, computer engineering, or computer science) and must show promise for pursuing graduate coursework satisfactorily. Previous course work in the areas of, computer programming, circuit theory, computer architecture, and operating systems is desirable. A minimum undergraduate grade point average of 3.0 will normally be required for admission to the program.

Students without an adequate background in either Electrical or Computer Engineering, or Computer Science will be required to complete prerequisite coursework in computer engineering in addition to the 30 credit hours required for the MSCPE degree. These background courses will carry undergraduate credit, and are designed to provide knowledge of appropriate fundamental concepts in the respective disciplinary areas and improve communication between students of different academic backgrounds. The necessary coursework will be determined by the Graduate Program Director for the MSCPE program on a per-student basis. The Program Director will coordinate with ECE and CPS department chairs to determine the proper recommendations for the student.

Graduate Capabilities

Graduates of the MSCPE program at UD will obtain the skills required to design and develop new products, technologies, and processes that incorporate one or more of the following areas: embedded systems, software engineering, operating systems and computer architecture, or communications and networking.

Program Specialization Tracks

The proposed MSCPE courses are broken into specialization tracks so that students may more easily navigate course offerings. Currently, the MSCPE program is divided into four separate concentration areas in embedded systems, software engineering, communications and networking, and operating systems and computer architecture. Figure 1 gives a Venn diagram of the available MSCPE courses and how they correspond to the four specialty tracks.

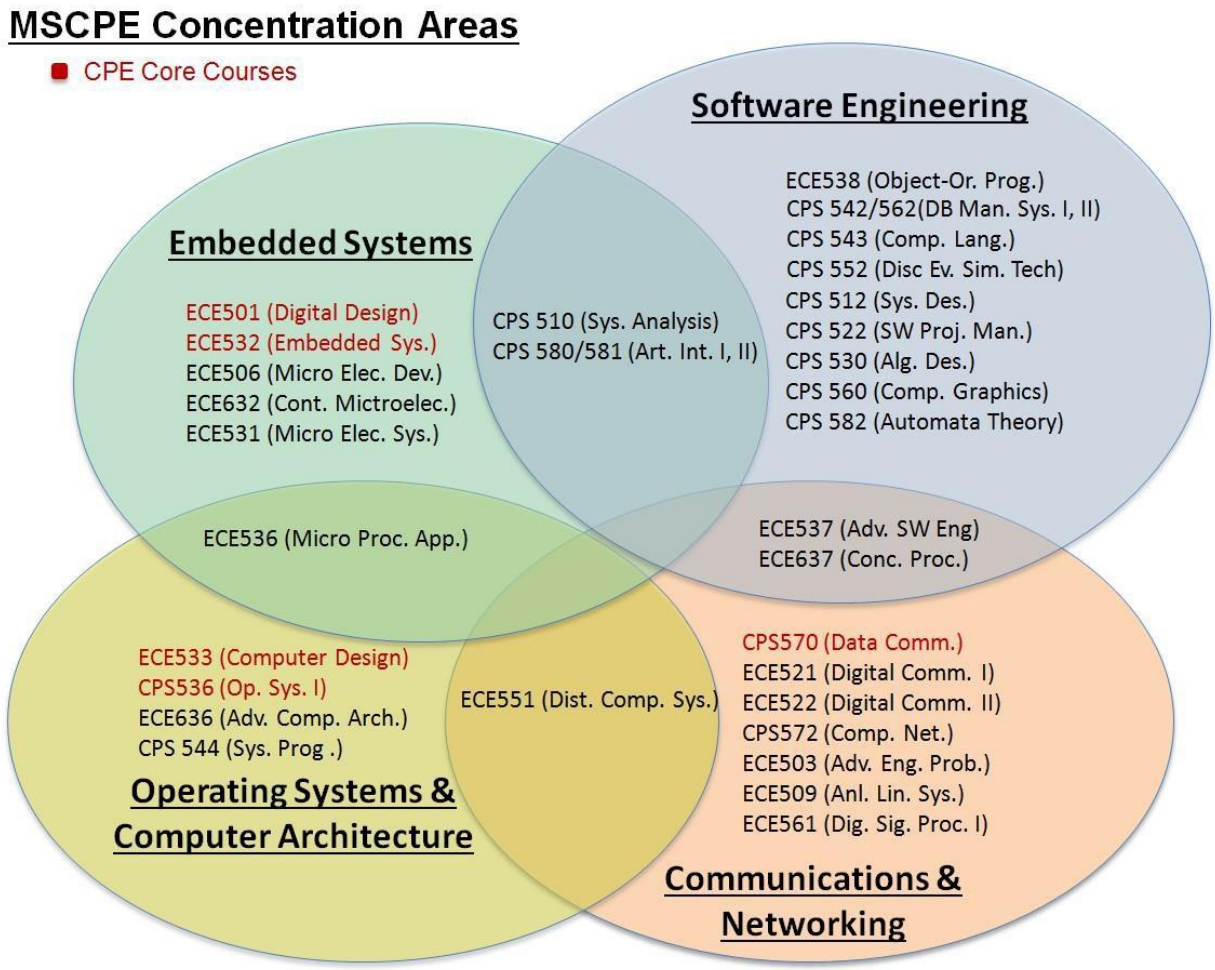

Figure 1 --- MSCPE concentration areas

As shown in Figure 1, there are a large number of course options in each of the four concentration areas. In the proposed MSCPE program, each student will fill out a course plan of study with his/her advisor which is approved by the MSCPE Program Director.

Administrative Arrangements

The proposed MSCPE program will be administered by the Department of Electrical and Computer Engineering within the School of Engineering and directed by the Graduate Program Director for the MSCPE program. The MSCPE Program Director will be advised on matters pertaining to the program, including curriculum and admission, by a multidisciplinary steering committee that includes faculty members from both the College of Arts and Sciences and the School of Engineering. This type of administrative model parallels that being successfully used by the University in its Electro-Optics and Bioengineering programs which are also offered through a collaboration of the School of Engineering and the College of Arts and Sciences.

The Departments of Electrical and Computer Engineering and Computer Science will be the major contributors to the program. Both currently offer Master's degrees and faculty members within each department are therefore experienced in graduate education. Both departments have traditionally offered coursework appropriate for this degree program and have offered an undergraduate degree in computer engineering for over 15 years. The proposed MSCPE program is designed to more fully represent the interdisciplinary nature of computer engineering and is strengthened by the integration of relevant disciplines.

Need for Program

Computer engineering is one of the fastest growing fields of engineering in the United States, and across the globe. **Softwareengineeringjobs.org** reports that in 2011, there were 875,000 computer engineering jobs within the United States, far surpassing any other engineering field. Additionally, according to the Job Outlook 2012 report from NACE research, a Master's degree in Computer Engineering is one of the five top Master's degrees in demand in the United States. Additionally, the Bureau of Labor Statistics job outlook report for 2012-2022 shows computer software developers growing at a rate of 22%, much faster than the national job growth average. (http://www.bls.gov/ooh/computer-and-information-technology/software-developers.htm).

Specifically, the Master of Science in Electrical Engineering (MSEE) program, currently offered at UD, is steadily growing. Over the past 3 years, the ECE department has seen a steady increase in the number of applications, and large number of incoming student classes. Table 1 gives admissions data for the past 3 academic years

Year	Applications	Admitted	Class Size
2011	214	114	62
2012	325	126	51
2013	404	155	90

Table 1 --- MSEE program admissions data over the past 3 years

As seen in Table 1, the MSEE program is steadily growing, and class sizes are in record numbers over the past 3 years. Additionally, the MSEE program offers a computer concentration that many computer engineering and computer science undergraduates have entered specifically

because UD does not yet offer a computer engineering Master's degree. From 2010 to 2013, 68 of the 135 graduates from our MSEE program were enrolled in the computer concentration. Additionally, the ECE department has received dozens of inquiries about a computer engineering Master's degree program.

Additionally, a review of universities in Ohio that grant engineering degrees reveals that 8 of 11 schools do offer an Master's degree in computer engineering (or similarly named degree with "computer" in the title). These universities are the Air Force Institute of Technology, Case Western Reserve, Cleveland State, Ohio State, Cincinnati, Miami, Toledo, and Write State. Only University of Akron, Ohio University, and the University of Dayton do not offer a computer engineering degree at the master's level. This review illustrates a void in the engineering degree offerings at UD when compared to other schools across the state.

Prospective Enrollment

As indicated previously, applicants holding a baccalaureate degree in an appropriate area of study (e.g., electrical engineering, computer engineering, computer science) who satisfy the admissions requirements will be eligible to enter the program. Based on the University's experience with its Electrical Engineering MS degree, it is anticipated that an initial class of approximately 20-25 students will enroll during the first year of the program, and that this will grow to entering classes of approximately 30-40 students in subsequent years of the program.

As mentioned in the program need section, we believe that the strong enrollment in our MSEE program, as well as several inquiries and requests for a computer engineering Master's degree offering justify an initial enrollment between 20 and 25 students.

It is expected that some of our current undergraduate students in Computer Engineering will enter the program following completion of their baccalaureate degrees. Plans also call for development of a combined BS/MS program to further enhance the preparation of our undergraduate students for the program and strengthen the pipeline of students who will enter it.

Special Efforts to Enroll and Retain Underrepresented Groups

The proposed program will utilize existing School of Engineering programs that are designed to enroll and retain students from underrepresented groups. The School of Engineering employs a full-time program manager to administer its Minority Engineering and Women-in-Engineering programs. Over the past several years, the University has sponsored a campus visit by undergraduate students from Central State University to recruit them to graduate programs such as the proposed MSCPE degree. Also, both the College of Arts and Sciences and School of Engineering are active participants in the state-wide Louis Stokes Alliance for Minority Participation program which provides support for minority STEM majors at the undergraduate level.

Faculty and Facilities Available

Currently, the Departments of Electrical and Computer Engineering and Computer Science have a number of faculty members with the expertise to offer coursework and support research associated with the proposed program. Several faculty members already teach courses and conduct research in computer engineering areas. The undergraduate curriculum in Computer Engineering has provided the required resources of faculty, curriculum, and research expertise to immediately offer the proposed MS degree.

Several academic and research laboratory facilities will be available for use in the program. Faculty research facilities are located in the Department of Electrical and Computer Engineering and Department of Computer Science. The Department of Electrical and Computer Engineering supports advanced research in signal and image processing, high-performance computing, embedded systems, and digital electronics. The Department of Computer Science supports advanced research in database and data mining systems, semantic web technologies, peer-to-peer networking and cloud computing, programming languages, human-computer interaction, graph algorithms and graph theory.

Need for Additional Facilities and Staff

Available faculty resources are sufficient to launch the program, but future enrollment could result in a need for additional faculty in both departments

Projected Costs

Because all of the courses included in this new degree program are already offered and currently being taught in the ECE and CPS departments, there is no up-front cost for launch of the program. Additionally, there will be no additional library resources needed for program launch. As the program enrollment grows over time, revenue will be used to acquire additional resources as needed. These resources may include new equipment, adjunct faculty, or lecturer positions. If the program is implemented, the University of Dayton will assume responsibility for all costs associated with the program.

Appendix A --- Proposed CPE Curriculum

Core CPE Coursework (9 Semester Hours) (6 ECE, 3 CPS)

ECE 501 Contemporary Digital Systems	3 Semester Hours
ECE 532 Embedded Systems	3 Semester Hours
ECE 533 Computer Design	3 Semester Hours
CPS 536 Operating Systems I	3 Semester Hours
CPS 570 Data Communications	3 Semester Hours

Specialization (9 Semester Hrs. for thesis, 12 Semester Hrs. for non-thesis) (6 ECE, 3 CPS min.)

Embedded Systems:

ECE 506 Microelectronic Devices	3 Semester Hours
ECE 531 Microelectronic Systems	3 Semester Hours
ECE 632 Contemporary Microelectronics	3 Semester Hours

Software Engineering:

ECE 538 Object-Oriented Programming	3 Semester Hours
CPS 510 Systems Analysis	3 Semester Hours
CPS 512 Systems Design	3 Semester Hours
CPS 522 Software Project Management	3 Semester Hours
CPS 530 Algorithm Design	3 Semester Hours
CPS 542 Database Management Systems	3 Semester Hours
CPS 543 Comparative Languages	3 Semester Hours
CPS 544 Systems Programming I	3 Semester Hours
CPS 552 Discrete Event Simulation Techniques	3 Semester Hours
CPS 560 Computer Graphics	3 Semester Hours
CPS 562 Database Management Systems II	3 Semester Hours
CPS 580 Artificial Intelligence	3 Semester Hours
CPS 581 Advanced Artificial Intelligence	3 Semester Hours
CPS 582 Automata Theory	3 Semester Hours

Operating Systems and Computer Architecture:

ECE 536 Microprocessor Applications	3 Semester Hours
ECE 636 Advanced Computer Architecture	3 Semester Hours
ECE 637 Concurrent Processing	3 Semester Hours

Communications and Networking:

ECE 503 Random Processes	3 Semester Hours
ECE 509 Analysis of Linear Systems	3 Semester Hours
ECE 521 Digital Communications I	3 Semester Hours
ECE 522 Digital Communications II	3 Semester Hours
ECE 561 Digital Signal Processing I	3 Semester Hours
CPS 572 Computer Networking	3 Semester Hours

Thesis (6 Semester Hours)

ECE 599 or CPS 599 (Depending on Advisor) Thesis	6 Semester Hours

Technical Electives (6 Semester hours for thesis, 9 Semester Hours for non-thesis)

Courses chosen with approval of advisor	6/9 Semester Hours
TOTAL	30 Semester Hours

Appendix B --- Minimum Prerequisite Courses

UD Equivalent	Title
ECE 215, ECE215L	Introduction to Digital Systems and Assoc. Laboratory
ECE 314, ECE314L	Computer Architecture and Assoc. Laboratory
CPS 150	Algorithms and Programming I
CPS 151	Algorithms and Programming II
CPS 350 / CPS 501	Data Structures and Algorithms / Abstract Data Structures and Applications

Appendix C ---MSCPE Course Descriptions

ECE 501. Contmp Digital Sys. 3 Hours

CONTEMPORARY DIGITAL SYSTEMS Introduction to sequential logic; state machines; high-performance digital systems: theory and application of modern design; alternative implementation forms and introduction to HDL; productivity, recurring and non-recurring costs, flexibility, and testability; software drivers; hardware/software integration; finite state machines. Prerequisite(s): ECE 215 or equivalent.

ECE 532. Embedded Systems. 3 Hours

EMBEDDED SYSTEMS This course will introduce the student to the concept of embedded systems and the constraints imposed on hard real-time systems. Course will consist of design, development and test of selected hard-deadline hardware and software using Altera's DE2 development boards. The student will design selected hardware interfaces and develop real-time executive and application code in assembly language and C. Each student will design and implement hardware using Verilog HDL. Prerequisite(s): ECE 501 or equivalent.

ECE 533. Computer Design. 3 Hours

COMPUTER DESIGN Design considerations of the computer; register transfer operations; hardware implementation of arithmetic processors and ALU; instruction set format and design and its effect on the internal microengine; hardware and micro-programmed control design; comparative architectures. Prerequisite(s): ECE 501 or equivalent.

CPS 536. Operating Systms I. 3 Hours

OPERATING SYSTEMS I Models and algorithms pertinent to the design of computer operating systems; concurrent processes including synchronization, communication and deadlock problems, process and device scheduling policies, design of file systems, reliability and protection. Prerequisite(s): CPS 350.

CPS 570. Data Communications. 3 Hours

DATA COMMUNICATIONS The study of networks of interacting computers. The analysis of distributed processing and distributed databases. Prerequisite(s): CPS 350.

ECE 506. Microelectronic Dev. 3 Hours

MICROELECTRONIC DEVICES Crystalline structure of matter, quantum mechanics and energy band theory; bulk properties of semiconductors; p-n and metal-semiconductor junctions; bipolar junction transistors; field-effect transistors; heterostructures; optical properties of semiconductors; devices, modeling and applications. Prerequisite(s): ECE 304 or permission of instructor.

ECE 531. Microelectronic Sys. 3 Hours

MICROELECTRONICS SYSTEMS Introduction to the design and application of engineering micro-electronics; bipolar and MOS device theory and processing technology; CMOS logic and circuitry; design principles fundamental to chip design and fabrication; case studies employing introduction to HDL. Prerequisite(s): ECE 304.

ECE 632. Contemp Microel Desgn. 3 Hours

CMOS analog circuit design (oscillators, amplifiers, op-amps), mixed signal design (data converters), introduction to microelectron-mechanical system (MEMS) and wireless communications systems design, advanced VLSI digital design projects, seminar topics covering contemporary designs and techniques. Prerequisite(s): ECE 531.

ECE 538. Objct Orient Prg App. 3 Hours

OBJECT-ORIENTED PROGRAMMING APPLICATIONS A semi-formal approach to the engineering applications of object-oriented programming. Application of the concepts of classes, inheritance, polymorphism in engineering problems. Introduction to the use of class libraries. Effective integration of the concepts of application programmer interfaces, language features and class libraries. Prerequisite(s): C-programming experience.

CPS 510. Systems Analysis. 3 Hours

SYSTEM ANALYSIS Process-oriented, data-oriented, and object-oriented approaches for systems development; comparison of various systems development life cycles; DFD methodology for systems analysis using state-of-the-art CASE (Computer Aided Software Engineering) tools; logical and event analyses of DFD specifications; tools and techniques for modeling real-time systems; data modeling; introduction to object-oriented analysis methodologies. Prerequisite(s): CPS 350.

CPS 512. Systems Design. 3 Hours

SYSTEM DESIGN Principles of design, introduction to software design methodologies; issues in transition from analysis to logical and physical designs; detailed discussion of structured design methodology (Yourdon, Constantine, Myers); design guidelines; transform analysis; Warnier/Orr design methodologies; designing methodologies for real-time systems; introduction to object-oriented design; CASE tools and code generators. Prerequisite(s): CPS 510.

CPS 522. Software Proj Mgmt. 3 Hours

SOFTWARE PROJECT MANAGEMENT Cost and effort estimation models for software projects, planning techniques, productivity metrics, risk management, maintenance, reuse, quality assurance, configuration management, Capability Maturity Models (CMM and P-CMM), and ISO 9001. Prerequisite(s): CPS 510 or CPS 518 or CPS 520.

CPS 530. Algorithm Design. 3 Hours

ALGORITHM DESIGN The design and analysis of computer algorithms, including order notation, sorting, dynamic programming, graph algorithms, string matching, matrix multiplication, NP-completeness. Prerequisite(s): CPS 350.

CPS 542. Database Mgt Sys I. 3 Hours

DATABASE MANAGEMENT SYSTEMS Physical and logical organization of data files; hierarchical, network, and relational database models; data definition language and data manipulation language of a commercial database management system; query languages. Prerequisite(s): CPS 350.

CPS 543. Comparatve Languages. 3 Hours

COMPARATIVE LANGUAGES The evolution of programming languages. Study of the concepts common to languages, constructs, organization, specification, and analysis of languages. The role of languages in software development. Prerequisite(s): CPS 350.

CPS 544. Systms Programming. 3 Hours

SYSTEMS PROGRAMMING Analysis of compilers and their construction; programming techniques discussed in the current literature; advanced computer applications in both mathematical and nonnumeric areas. Prerequisite(s): CPS 350.

CPS 552. Discrte Evnt Simultn. 3 Hours

DISCRETE EVENT SIUMULATION TECHNIQUES Simulation models; random number generation testing, special purpose simulation languages, statistical analysis of output; regenerative models; trace-driven models. Emphasis on models related to computer operating system design and performance evaluation. Prerequisite(s): CPS 350; statistics.

CPS 560. Computer Graphics. 3 Hours

COMPUTER GRAPHICS Types of graphic hardware and their characteristics. Overview of software and techniques used in computer graphics. Two- and three-dimensional graphics displays. Prerequisite(s): CPS 350; programming ability in a procedure-oriented language.

CPS 562. Database Mgt Sys II. 3 Hours

DATABASE MANAGEMENT SYSTEMS II Study of query execution and optimization, transaction management, concurrency control, recovery and security techniques. Advanced data models and emerging trends in database systems, like object-oriented database systems, distributed database systems, client-server architecture, multidatabase and heterogeneous systems. Other current database topics and emerging technologies will be discussed. Prerequisite(s): CPS 542.

CPS 580. Artifcl Intellg. 3 Hours

ARTIFICIAL INTELLIGENCE Presentation of theoretical concepts for artificial intelligence in the areas of knowledge representation and search techniques. These are examined in the context of applications for expert systems, semantic networks, and planning problems. Issues concerning functional programming and logic programming are also presented. Prerequisite(s): CPS 350.

CPS 581. Adv Artificl Intell. 3 Hours

ADVANCED ARTIFICIAL INTELLIGENCE This course continues the studies pursued in Artificial Intelligence CPS 580. It delves more deeply into certain areas such as multiple agent systems and induction, and introduces new areas, such as neural networks and planning, not covered in CPS 580. As in CPS 580, each student shall complete a final project investigating some area of research in Artificial Intelligence. The project will encompass a literature search, paper, presentation, and implementation.

CPS 582. Automata Theory. 3 Hours

AUTOMATA THEORY Finite automata, sequential machines. Turing machines, computability, existence of self-reproducing machines. Prerequisite(s): CPS 528.

ECE 536. Microprocessr Appl. 3 Hours

MICROPROCESSOR APPLICATIONS Project studies, applications of microprocessors in practical implementations; logic implementation using software; memory mapped I/O problems and interrupt structure implementation; use of compilers; study of alternate microprocessor families including industrial controllers. Prerequisite(s): ECE 314 or equivalent; ECE 501.

ECE 636. Adv Comptr Architec. 3 Hours

ADVANCED COMPUTER ARCHITECTURE Examination of modern high performance computing architectures, including out-of-order execution RISC multicore processors and GPGPUs. Design projects integrate the concepts learned in class. Prerequisite (s): ECE 533.

ECE 637. Concurrent Proc. 3 Hours

CONCURRENT PROCESSING Introduction to the concepts and practices of parallel processing and concurrency. Multiprogramming and multitasking. Synchronous and asynchronous events. Critical sections, mutexes and semaphores. Use of shared memory in engineering applications. Atomicity on CISC and RISC machines. Applications of interval timers. Case studies in engineering applications. Prerequisite(s): ECE 537, ECE 636, or equivalent.

ECE 503. Random Processes. 3 Hours

RANDOM PROCESSES Random variables as applied to system theory, communications, signal processing and controls. Topics include advanced engineering probability, random variables, random vectors and an introduction to random processes Prerequisite(s): ECE 340 or equivalent.

ECE 509. Analy-Linear Systms. 3 Hours

ANALYSIS OF LINEAR SYSTEMS State variable representation of linear systems and its relationship to the frequency domain representation using transfer functions and the Laplace transform. State transition matrix and solution of the state equation, stability, controllability, observability, state feedback and state observers are studied.

ECE 521. Digital Communctn I. 3 Hours

DIGITAL COMMUNICATIONS I Fundamental limits on performance; Shannon's theorem; prefix codes; Huffman codes; signal vectors; orthonormal basis functions; signal detection and estimation; Wiener and adaptive filters; matched filters; sampling theory and process; waveform coding techniques; baseband shaping concepts. Prerequisite(s): ECE 503.

ECE 522. Digtl Communctn II. 3 Hours

DIGITAL COMMUNICATIONS II Waveform coding techniques, including binary and Mary PAM, DPCM, DM, ADM; baseband shaping concepts, including binary and M-ary PAM, ISI; digital modulation techniques, including ASK, PSK, FSK, QPSK, CPFSK, MSK, DPSK, M-ary PSK; error-control, including Block codes, cyclic codes; spread-spectrum modulation concepts. Prerequisite(s): ECE 521.

ECE 561. Digtl Signal Proc. 3 Hours

DIGITAL SIGNAL PROCESSING A study of one-dimensional digital signal processing, including a review of continuous system analysis and sampling. Topics include z-transform techniques, digital filter design and analysis, and fast Fourier transform processing techniques. Prerequisite(s): ECE 334 or equivalent.

CPS 572. Computer Networking. 3 Hours

COMPUTER NETWORKING A unified view of the broad field of local area and long haul networks. A survey of the state of the art. Topics covered include networking theory, design approaches, standards, topologies and protocols. Prerequisite(s): CPS 536, CPS 570.

Appendix D --- Response to RACGS Feedback

Case Western Reserve University:

- "It would be great if any courses, especially the two graduate level communication courses, could be made available online so that CWRU students could also take them."

  An online offering for our graduate courses is definitely something that we will discuss in the near future. However, we believe this topic to be outside of the initial offering of the proposed degree.

- "Offering of a technical elective course on Advanced VLSI Design should be considered if not already offered. This is an important subject for the students intending to put emphasis on learning the hardware aspect."

  Although our program does not specifically offer a course dedicated to VLSI, we do offer courses in microelectronic devices (ECE506),and microelectronic systems (ECE531) which cover many aspects of VLSI systems. Additionally, we offer a course in contemporary microelectronics (ECE632) which also covers VLSI technology.

- "Some of the core courses, e.g. Embedded Systems, should include a design project."

  Project-based courses are not specified within the curriculum, but many courses do have significant project requirements, including ECE501, ECE537, ECE538, and CPS544. Additionally, students who choose the thesis option will obtain significant project experience with their thesis topic.

- "Can you have a 9-semester hours thesis instead of proposed 6? It would provide students more time to do a better job with the thesis work."

  The 6 semester hours of thesis is consistent with all other MS degrees offered within the School of Engineering at the University of Dayton.

Kent State:

- "As indicted in market need analysis part- there is considerable job market also for Computer Engineers in USA. CPE mostly targets computer systems hardware/ VLSI design industry. It will be interesting to have some analysis how strong the current concentrations and future growth potentials of specifically computer hardware/systems manufacturing industries in Ohio. It will be beneficial if Ohio academic programs are designed in such a way that Ohio graduates stays in Ohio (i.e. there are employment

opportunities right in the state) rather than migrating to other states in search of job after being trained here."

The department of Electrical and Computer Engineering at the University of Dayton is the most diverse department within the university, drawing students from all over the country and throughout the world. Currently in the Electrical Engineering (EE) Master's program, over 60% of the active student body is natively outside of the United States. The majority of the graduates in our EE master's program obtain employment outside of Ohio but within the US. We believe that our MSCPE program will have a similar trend, and therefore, the US jobs market is the best metric for a needs analysis.

- "The array of courses supporting the new degree program is very strong. Given this wide range of courses, the program will benefit by further offering concentrations. Overall the program is well designed."

  The MSCPE program has been broken down into four concentration areas, or tracks. These areas are embedded systems, software engineering, communications and networking, and operating systems and computer architecture.

Akron:

- "It is critical to be able to state the minimum capabilities of any graduate from the proposed program."

  The following has been added to the MSCPE proposal:
  "Graduates of the MSCPE program at UD will obtain the skills required to design and develop new products, technologies, and processes that incorporate one or more of the following areas: embedded systems, software engineering, operating systems and computer architecture, or communications and networking. "
- "it is suggested that UD consider – Computer Architecture, Operating Systems, and Networking as the three common courses for all students in the first semester. This would constitute 9 semester hours as proposed and eliminate the options for students."

  The 3 suggested courses are currently included in the core. What is typically referred to as "Computer Architecture" we have named ECE533, "Computer Design". Additionally, we have CPS536, "Operating Systems", and our CPS570 course, "Data Communications" deals with communication and networking. Additionally, keeping a flexible core is helpful to tailor curriculum for students who want to specialize in different areas. Programs of study, however, require advisor approval as well as the approval of the MSCPE program director.

- "The courses listed in Appendix A can be organized into Specialty Tracks. For example, a Digital Systems Specialization could involve courses ECE 501, ECE 532, ECE 506, etc.

Similarly, tracks in Software Systems, Image & Signal Processing, Intelligent Systems, Distributed Systems, etc. can be envisioned."

Although we did not mention tracks in our initial PDP, the MSCPE program has been broken down into four concentration areas, or tracks. These areas are embedded systems, software engineering, communications and networking, and operating systems and computer architecture. More information on specialty tracks is given in the full proposal.

Cleveland State:

- "The discussion of market need in the proposal is surprisingly brief. An estimate of computer engineering jobs from a web site is given, but there is not any discussion of market need in the state of OHIO. This is probably because there are relatively few computer engineering jobs in Ohio. Every industry needs a few computer engineers, but there are few computer engineering-oriented companies in Ohio. So an MSCPE degree would probably not help Ohio much in terms of jobs - but it might help UD in terms of enrollment."

  The department of Electrical and Computer Engineering at the University of Dayton is the most diverse department within the university, drawing students from all over the country and throughout the world. Currently in the Electrical Engineering (EE) Master's program, over 60% of the active student body is natively outside of the United States. The majority of the graduates in our EE master's program obtain employment outside of Ohio but within the US. We believe that our MSCPE program will have a similar trend, and therefore, the US jobs market is the best metric for a needs analysis.

- "Page 2 says that non-thesis students take 6 hours of technical electives, but page 6 says that they take 9 hours of technical electives."

  This has been corrected.

- "The proposal says that "it is anticipated that an initial class of approximately 20-25 students will enroll during the first year of the program, and that this will grow to entering classes of approximately 30-40 students in subsequent years of the program." However, there is no support for this statement."

  We have added additional information to support our enrollment claim, including admissions information from our electrical engineering master's program.

- "I suggest that the choice of technical electives be more restricted than just saying 'with approval of advisor.'"

Typically, graduate programs are designed to be less restrictive than undergraduate programs. The flexibility of a graduate program allows student and advisor to map out the coursework that will be most beneficial for a student's particular area of interest. Also, for students who choose the thesis option, less restriction allows them to choose courses that will support work in their specialized thesis area.

- "I suggest that the specialization courses be grouped into specific specialization areas. As it stands now, a student could take Random Processes, Microprocessor Applications, and Database Management Systems as his specialization courses. What kind of specialization is that?"

  Although we did not mention tracks in our initial PDP, the MSCPE program has been broken down into four concentration areas, or tracks. These areas are embedded systems, software engineering, communications and networking, and operating systems and computer architecture. Additionally, each student must prepare a program of study which requires advisor approval as well as the approval of the MSCPE program director. More information on specialty tracks is given in the full proposal.

- "There does not seem to be enough difference between UD's current MSEE and the proposed MSCPE. Given the range of technical electives in both programs, it looks like one student's MSEE program could be identical to another student's MSCPE program."

  Certainly, there is overlap between the areas of electrical engineering, computer engineering, and computer science. However, the distinction of our MSCPE program and our MS in electrical engineering is the number of available and required courses in computer science. The computer engineering discipline is a blend of electrical engineering and computer science disciplines. We believe that the proposed curriculum accurately encompasses the computer engineering discipline.

- "Saying that "Previous course work in the areas of ... operating systems is desirable," seems to preclude BSEE students from pursuing the MSCPE degree."

  We have constructed a path for electrical engineering undergraduates to be able to cross over into a computer engineering masters program. When utilizing technical electives in their undergraduate program, students will be able to obtain the requisite computer engineering skills to be able to enroll in the MSCPE program.

<u>Wright State:</u>

- "The brief overview of the curriculum provided in the PDP suggests the proposed program will be virtually identical to the Masters of Science in Computer Engineering offered at Wright State."

  We understand that many MSCPE programs may be similar.

- "Our (WSU's) computer engineering program is currently not at full capacity; starting another program at a university 15 minutes away will only serve to split the student population between our institutions and weaken both programs. I would strongly urge the University of Dayton to consider customizing their degree so it is focused on some application area that is not in direct competition with our existing programs. We are eager to collaborate with University of Dayton in such an effort."

  Since the majority of our electrical engineering MS students specialize in digital and computer offerings, the proposed CPE degree will better reflect their choices. Our program is drawing from both the national and international population more than from the local area. The national and world-wide need for computer engineers is expanding and we expect that this program will draw from that population.

  Additionally, some of our current MS students in Electrical Engineering take courses offered by WSU, and those credits transfer due to the DAGSI agreement. So, an MSCPE degree at UD may help enrollment at WSU.

<u>Ohio State:</u>

- "It is not clear why this new degree is needed and why it is referred to as an interdisciplinary degree."

  The need for the MSCPE program has been clarified in the full proposal under the "Need for Program" section.

- "Since UD already has an Electrical and Computer Engineering (ECE) department and the Computer Science department is in the College of Arts and Sciences, the natural home for the Computer Engineering degree would be ECE."

  To be consistent with our undergraduate CPE program, the proposed program is a joint program between the ECE and CPS departments.

<u>Miami University:</u>

- "In regards to the Need for Program, while it is true that, nationally, the need is great, the proposal does not show a need for another program such as this in this geographical area. We note that, at Miami University, we currently have a program entitled MS in Computational Science and Engineering (MS CS&E) that, in some sense, mirrors this program. Hence, is there any value added by the proposed UD program?"

  The need for the MSCPE program has been clarified in the full proposal under the "Need for Program" section.

- " In addition, the statement that there are 875,000 computer engineering jobs currently in the United States is derived from a report on the website – "Softwareengineeringjobs.org"; this statement would have more impact if it were from a more recognized source or sources; an example of such a source is a US government entity like the Bureau of Labor Statistics."

  In addition to our initial research, we have included statistics from the Bureau of Labor Statistics showing a projected 22% increase in software development jobs from 2012-2022. Also, we have included enrollment and admissions data from our MS in Electrical Engineering program to further clarify the need for the MSCPE program at UD.

- "In regards to the Prospective Enrollment in such a program, the proposal relies upon enrollments from a similar albeit different program that is broader in scope, namely the MS in electrical engineering. This section would be better served if it presented data from a local market survey at the least."

  In addition to our initial research, we have included enrollment and admissions data from our MS in Electrical Engineering program to further clarify the need for the MSCPE program at UD.

Appendix E --- Faculty Vitae

Dale E. Courte

Name and academic rank:

Dale E. Courte, Associate Professor, Department of Computer Science, University of Dayton, 300 College Park, Dayton, OH 45469-2160; Phone: (937) 229-3831.

Email: Dale.Courte@notes.udayton.edu

Degrees with fields, institution, and date:

B.S. (Computer Science, Magna Cum Laude), Wright State University, 1977
M.S. (Computer Science), Wright State University, 1981
Ph.D. (Computer Science and Engineering), Wright State University, 2002.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Assistant Professor, August 15 2002 – August 14, 2008
Associate Professor, August 15, 2008 – June 30, 2009
Associate Professor and Chair of Computer Science, July 1, 2009 - present

Other related experience, i.e., teaching, industrial, etc:

June 1992 - July 1998: Associate Director, Computing and Telecommunications Services (CaTS), Wright State University.

July 1990 - June 1992: Senior Academic Programming Consultant, CaTS, Wright State University.

September 1987 - June 1990: Computer Engineer, Department of Computer Science and Engineering, and University Computing Services (UCS), Wright State University.

1979-1980: Programming Consultant, Research and Instructional Computation Center (RICC), Wright State University.

Consulting, patents, etc.

None

States in which professionally licensed or certified, if applicable:

None

Principal publications of the last five years:

Dale E. Courte, "Hybrid Evolutionary Code Generation Optimizing both Functional Form and Parameter Values", to appear in *Intelligent Engineering Systems through Artificial Neural Networks*, vol. 17 (ANNIE 2007), ASME Press, 2007.

D. Courte, L. Tamburino, and M. Rizki, "Evolving Illumination Parameters for Improved Target Recognition", *Proceedings of SPIE, Intelligent Computing: Theory and Applications IV (Defense and Security Symposium 2006), Volume 6229, SPIE.*

Karthik Ganesan Pillai and Dale Emery Courte, "Distributed Optimization of Feature Mining Using Evolutionary Techniques", *Proceedings of the 2006 International Conference on Artificial Intelligence (IC-AI'06), Volume I, CSREA Press.*

Scientific and professional societies of which a member:

IEEE Computer Society
Association for Computing Machinery

Honors and awards:

Institutional and professional service in the last five years:

Department Committees
- CPS Curriculum Committee (2003-present)
- CPS Graduate Program Committee (2004-present)
- CPS Graduate Program Director (2007-present)
- CPS member of Computer Engineering (CPE) Program Committee (2005-present)
- CPS Systems Administrator Search Committee (2007)

College Committees
- Search Committee, Director of Information Technology (2007)

University Committees
- Academic Senate (winter 2004-2007)
- Student Academic Policies Committee of the Academic Senate (2004-2007) Co-Chair (2006–2007)
- Executive Committee of the Academic Senate (2006-2007)
- Educational Leadership Council (2006-2007)
- Future Direction of University Libraries Committee (2006-2007)
- Search Committee, Director of Diversity and Inclusion Initiatives (2006-2007)

Percentage of time available for research or scholarly activities: 10%

Percentage of time committed to the program: 90%**.**

As Chair, most of my time is devoted to administrative support of our academic programs.

Don Moon

Name and academic rank:

Don Moon, Professor, Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232; Phone: (937) 229 3179.

Email: don.moon@notes.udayton.edu

Degrees with fields, institution, and date:

Ph.D. in Electrical Engineering, Ohio State University, 1974.

M.S. in Electrical Engineering, University of Toledo, 1966.

B.S. in Electrical Engineering, West Virginia University Institute of Technology, 1963

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Professor: August 1984-Current.

Assistant Professor: August 1967-1973

Other related experience, i.e., teaching, industrial, etc:

U.S. Air Force Avionics Laboratory WPAFB, OH, resigned as acting Chief Scientist after serving as a supervisory Engineer, Researcher and Consultant on Avionics Technology and Systems, July 1974 - June 1985.

University of North Carolina at Charlotte, Associate Professor of Electrical Engineering, June 1973 – June 1974

NCR Corporation, Dayton, OH, Senior Design Engineer, Group Leader, Product Engineering, June 1965 – August 1967.

AVCO Corporation, Cincinnati, Ohio, Design Engineer, Communication Circuits and Systems, June 1963 – September 1964.

Consulting, patents, etc.

NCR Corporation - Consulting Professor of Design Automation, 1968-72

Harris Corporation - Multiplex System Analyst, 1973

Magnavox Corporation - Digital Avionics Systems Analyst, 1985-86

U.S. Air Force/Army - Avionics Display Systems Analysis, 1985-91

States in which professionally licensed or certified, if applicable: None

Principal publications of the last five years: None

Scientific and professional societies of which a member:

IEEE, Senior Member, Chairman, Dayton Section (1993)

IEEE/ASSP Society, Chairman, Dayton Group (1986)

IEEE/AESS Society, Member, National Board of Governors (1989-95)

ASEE, Member (1990-Present)

Honors and awards:

Eta Kappa Nu

NSF Fellow (1963)

USAF Sustained Superior Performance Award (1975-84)

President's Excellence in Teaching Award (1969)

IEEE, Service Recognition Award (1987, 1990)

Institutional and professional service in the last five years:

Chairman, ECE Department (2007 – 2010)

Associate Dean, Graduate Engineering Programs and Research (1994-2007)

ABET Evaluator (1998 – 2006)

School of Engineering Graduate Studies Committee, Chair (1994 – 2007)

School of Engineering Academic Leadership Committee (1994 – present)

University Graduate Leadership Council (1999 - 2007)

Percentage of time available for research or scholarly activities: 0%

Percentage of time committed to the program: 100%.

Elena Guliants

Name and academic rank:

Elena Guliants, Assistant Professor, Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232;

Phone: (937) 229 3523.

Email: Elena.gulaints@notes.udayton.edu

Degrees with fields, institution, and date:

PhD in Electrical Engineering, SUNY Buffalo, 2000.

M.S. in Electronics, Moscow State University, Russia, 1993.

B.S. in Electronics, Moscow State University, Russia, 1991.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Assistant Professor: May 2004 - present.

Other related experience, i.e., teaching, industrial, etc:

Taitech, Inc., Dayton, OH, Sr. Research Scientist, 2000-2003.

Motorola, East-European Branch, Moscow, Russia, 1996-1997.

Consulting, patents, etc.

"Hydrogen Gas Generation from Aluminum-Oleic Acid Core-Shell Nanoparticles with Room-Temperature Tap Water: Localized Hydrogen Production for Power Generation" submitted May 2009.

States in which professionally licensed or certified, if applicable:

None.

Principal publications of the last five years:

C.E. Bunker, M.J. Smith, K.A.S. Fernando, B.A. Harruff, W.K. Lewis, **E.A. Guliants**, and D.K. Phelps, "'Green' Hydrogen from Organic-Capped Al Nanoparticles and Water", submitted to *Science*, 2009.

S.W. Chung, **E.A. Guliants**, C. E. Bunker, D.W. Hammerstroem, Y. Deng, M. A. Burgers, P.A. Jelliss, and S. W. Buckner, "Capping and Passivation of Aluminum Nanoparticles Using Alkyl-Substituted Epoxides", *Langmuir **25**, 8883 (2009).*

M. Germain, P. Fraundorf, S. Lin, **E.A. Guliants**, C.E. Bunker, and S. Buckner, "Synthesis and Characterization of Srilankite Nanowires", *Journal of Nanoscience and Nanotechnology* **8(3)**, 1481 (2008).

E. A. Guliants, R. Schwarb, H. Bearbower, C.E. Bunker, and J.R. Gord, "Functional Nanoparticles in Thin Films as Sensing Media", *Reviews on Advanced Materials Science* **4**, 289 (2005).

J. Kim, W.A. Anderson, C.E. Bunker, and **E.A. Guliants**, "Morphological Changes During the Growth of Nickel Monosilicide Nanowires", in *Stability of Thin Films and Nanostructures, MRS Proceedings* **854E**, U 5.10 (2005).

Scientific and professional societies of which a member:

Member (present and past), Materials Research Society (MRS), since 1999, Electrochemical Society (ECS), American Institute of Physics (AIP) Society, since 2000, The Minerals, Metals & Materials Society (TMS), since 2001.

Institutional and professional service in the last five years:

August 2009-Current: Chair, Wohlleben-Hochwalt Outstanding Professional Research Award Committee, UD Research Institute, 2009-2010.

Organizer and Chair, *Session on Functional Magnetic Nanomaterials* for the International TMS conference in Orlando, FL (Feb. 2007).

Seminar Speaker at the Women in Engineering summer camp, Summer Honors Institute, and the Wright Scholar lecture series, UD (Summer 2006-2009).

Invited speaker, the Ohio Chapter of First Lego League (FLL) Kick-Off Meeting on Nano Quest, Wright State University (Sept. 2006).

ECE Speaker, Underclared Engineers, School of Engineering, 2006, 2007, 2008, 2009.

Percentage of time available for research or scholarly activities: 60%.

Support by AFOSR, AFRL, DTRA:

Nanoenergetics

Nanoparticle-based thin-film opto-chemical sensors and electro-chemical sensors Protein-coated magnetic iron oxide nanoparticles for bio-sensing and drug delivery

Percentage of time committed to the program: 40%.

Eric Balster

Name and academic rank:

Eric Balster, Assistant Professor, Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232; Phone: (937) 229 2683.

Email: balsteej@notes.udayton.edu

Degrees with fields, institution, and date:

PhD in Electrical Engineering, The Ohio State University, 2004.

M.S. in Electrical Engineering, University of Dayton, 2000.

B.E. in Electrical Engineering, University of Dayton. Graduate Magna Cum Laude, 1998.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Assistant Professor: August 2008-present.

Other related experience, i.e., teaching, industrial, etc: Adjunct

Professor, University of Dayton, August 2007. Adjunct

Professor, Wright-State University, January 2007.

Consulting, patents, etc.

On-site contractor, Air Force Research Laboratory (AFRL), since June of 2009.

1 patent pending.

States in which professionally licensed or certified, if applicable:

None.

Principal publications of the last five years:

E. J. Balster, and W. F. Turri. "Efficient Processing of Optimally Truncated JPEG2000 Imagery", Submitted with 1 revision to ***SPIE Journal of Optical Engineering*, October 2009.**

E. J. Balster, Y. F. Zheng, and R. L. Ewing. "Combined Spatial and Temporal Domain Wavelet Shrinkage Algorithm for Video Denoising". ***IEEE Transactions on Circuits and Systems for Video Technology*, vol. 16, no. 2, pp. 220-230, Feb. 2006**.

E. J. Balster, Y. F. Zheng, and R. L. Ewing. "Feature-BasedWavelet Shrinkage Algorithm for Image Denoising". ***IEEE Transactions on Image Processing*, vol. 14, no. 12, pp. 2024-2039, Dec. 200**5.

Scientific and professional societies of which a member:

Member, IEEE, since 2004. Member, Eta Kappa Nu. Member, Tau Beta Pi

Honors and awards:

Sensors Directorate Director's Cup Team Award, AFRL, Dec. 2007
Information Directorate Oliver G. Tallman Award, AFRL, June 2007
Information Directorate Fred I. Diamond Award, AFRL, June 2006
Information Directorate Division Technology Achievement Award, March 2006

Institutional and professional service in the last five years: August 2009-

Current: member, CPE program committee. August 2009- Current:

member, ECE Chair selection committee.

Reviewer for IEEE Transactions on Image Processing, IEEE Transactions on Circuits and Systems for Video Technology.

Percentage of time available for research or scholarly activities: 30%.

Recent research on a real-time JPEG2000 compression engine using FPGAs. Funded by AFRL/RY, IDCAST.

Recent research on wide area surveillance processing. Funded by Ohio Future JOBS committee, IDCAST.

Percentage of time committed to the program: 70%.

Frank Scarpino

Name and academic rank:

Frank Scarpino, Professor Emeritus , Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232; Phone: (937) 229 3611.
Email: Frank.Scarpino@notes.udayton.edu

Degrees with fields, institution, and date:

PhD in Electrical Engineering, University of Dayton, 1987.
M.S. in Electrical Engineering, University of Cincinnati, 1970.
B.S. in Electrical Engineering, University of Cincinnati, 1963.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Professor: August 1994- Current.
Associate Professor: August 1987-1994.

Other related experience, i.e., teaching, industrial, etc:

January 1985-August 1987	Division Manager, Air Force Flight Controls, Advanced Flight Controls Division Wright Patterson Air Force Base
June 1978-January 1985	Division Manager, Systems Division Air Force Avionics Laboratory Wright Patterson Air Force Base
May 2004-Present	Chief Technology Officer Balance-Back LLC Kettering Ohio
June 1989-August 1991	Chief Operating Officer, Insight Technology Corporation, Dayton, Ohio

Consulting, patents, etc.

Consultant to ATT New Jersey 1992-1999
Consultant to NCR Corporation 1999-1003
1 patents pending, 1 patent issued.

States in which professionally licensed or certified, if applicable:

None.

Principal publications of the last five years:

Scarpino, Frank and F. Ahmed, An Educational Project Using FPGAs to Implement a BPSK Detector, IEEE Transactions on Education, Feb 2005

Shafer, J, F. Scarpino, J. Fieler and S. Nichols, A Case for a Collaborative Engineering Tool for Video and Image Compression, Computer Engineering Conference, San Diego, January 2004

VHDL and AHDL Digital System Implementation, F. A. Scarpino, Prentice Hall, 1998

Scientific and professional societies of which a member:

Member, IEEE, since 1987.

Honors and awards:

2008 IEEE Dayton Section Harrell Noble V. Award

Institutional and professional service in the last five years:

I have directed the PhD and Masters research (Thesis and associated research) of approximately 10 students in the past 5 years through my research work at Wright Patterson AFB. The research program which I started has graduated 24 students (PhD + Masters Degrees) in the past 10 years. I have served on 3 PhD committees at Wright State University

Percentage of time available for research or scholarly activities: 25%.

I currently work part time at Wright Patterson Air Force Base. I perform research on advanced surveillance systems and mixed signal processing systems.

Percentage of time committed to the program: 25%.

I am retired (Professor Emeritus) and teach part time (1 course per semester)

Guru Subramanyam

Name and academic rank:

Guru Subramanyam, Professor, Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232; Phone: (937) 229 3188.

Email: Guru.Subramanyam@notes.udayton.edu

Degrees with fields, institution, and date:

PhD in Electrical Engineering, University of Cincinnati, 1993.

M.S. in Electrical Engineering, University of Cincinnati, 1988.

B.E. in Electrical & Electronics Engineering, University of Madras, India. Passed with First Class and Distinction, 1984.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Professor: August 2008- Current.

Associate Professor: August 2003-2008.

Assistant Professor: August 1998-2003.

Other related experience, i.e., teaching, industrial, etc:

Assistant Professor, University of Northern Iowa, Cedar Falls, IA, August 1993-98.

Sabbatical work at Air Force Research Laboratory, Sensors Directorate, AY 2004-05.

Consulting, patents, etc.

NASA/OAI Summer Faculty Fellow, Summers of 1997, 1998, 1999, and 2000.

AFOSR/NRC Summer Faculty Fellow, Summers of 2001, 02, and 03.

On-site contractor, Air Force Research Laboratory (AFRL), since summer of 2004.

Consultant to Analog Bridge Inc, July 2007-current.

5 patents pending, one patent issued.

States in which professionally licensed or certified, if applicable:

None.

Principal publications of the last five years:

P. Varanasi, K. Leedy, D. Tomich, **G. Subramanyam**, "Large area BST thin films for microwave applications deposited by pulsed laser ablation", **Thin Solid Films, vol. 517, no.9, pp. 2878-81, 2009.**

Huadong Li, and **G. Subramanyam,** "Performance of Thin-film Ferroelectric Capacitors for EMC Decoupling", **IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control v 55, no. 12, pp. 2552-58, 2008.**

G. Subramanyam, K. Leedy, C. Varanasi, R. Neidhard, K. Stamper, and M. Calcatera, "A Low Voltage Tunable Analog Phase Shifter Utilizing Ferroelectric Varactors**",** ***Integrated Ferroelectrics*****, vol. 100, no. 1, pp. 156 – 164, 2008.**

C. Bartsch, **G. Subramanyam**, J. Grote, F. Hopkins, L. Brott, and R. Naik,"A new capacitive test structure for microwave characterization of biopolymers", **Microwave and Optical Technology Letters, vol. 49, no.6, pp. 1261-65, 2007.**

G. Subramanyam, E. Heckman, J. Grote, and K. Hopkins, "Characterization of DNA based polymers for microwave photonics applications", **IEEE Microwave and Wireless Technology Letters, vol. 15, no.4, pp.232-234, 2005.**

Scientific and professional societies of which a member:

Senior Member, IEEE, since 2000. Member of ASEE, Materials Research Society, American Physical Society, and Eta Kappa Nu

Honors and awards:

Alumni Award for Excellence in Scholarship, University of Dayton, April 2008.
IEEE Dayton Section's Noble Award for Contributions in Electronic Devices, April 2007.
Sigma Xi's Noland Award for Excellence in Research, UD Sigma Xi Chapter, April 2007.

Institutional and professional service in the last five years:

August 2009-Current: Chair, ELE program committee.

January 2000-August 2009: Counselor to the IEEE student branch, University of Dayton

Reviewer for IEEE Microwave and Wireless Component Letters, IEEE Transactions on Microwave Theory and Techniques, Applied Physics Letters, Integrated Ferroelectrics, Journal of Electronic Materials. Also organized special sessions on tunable dielectrics for microwave applications in several international symposia.

Percentage of time available for research or scholarly activities: 25%.

Recent research on Barium Strontium Titanate thin film varactors funded by DARPA, AFRL, NSF, and industries (Analog Bridge Inc., Pole-zero Corp.)

Recent research on DNA based biopolymers for electronics, photonics and sensors funded by DARPA, AFOSR, and AFRL.

Percentage of time available for the program : 75%

James P. Buckley

Name and academic rank:

James P. Buckley, Associate Professor, Department of Computer Science, University of Dayton, 300 College Park, Dayton, OH 45469-2160;

Email: James.Buckley@notes.udayton.edu

Degrees with fields, institution, and date:

Doctor of Philosophy in Computer Science, Tulane University, July 1994. Master of Engineering in Computer Science, Tulane University, May 1990. Bachelor of Arts in Computer Science, State University of New York, May 1981.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Associate Professor, August 1993 – present

Chair of the Computer Science Department, 2001 - 2009

Other related experience, i.e., teaching, industrial, etc:

Software Systems Engineer, Texas Instruments 1982-1985.
Systems Analyst, Boeing Petroleum, 1985-1990.
Teaching Assistant, Tulane University, 1990-1993.

Consulting, patents, etc.

None

States in which professionally licensed or certified, if applicable:

None

Principal publications of the last five years:

Seitzer, J and Buckley, J. P., "*Cycle Mining in Active Database Environments*"; Proceedings of the 2000 Data Mining and Knowledge Discovery Conference in SPIES 14th Annual International Symposium, Orlando, Florida, April 24-28 2000. Pages 230-239.

Seitzer J., Buckley J. P., Pan Y., and Adams, L. A., "*The Parallelization of a Knowledge Discovery System with Hypergraph Representation*"; Proceedings of the 3rd Workshop of High Performance Data Mining of the International Parallel and Distributed Processing Symposium. Cancun, Mexico, May 2000. Lecture Notes in Computer Science, Volume 1800, Pages 374-381, Springer-Verlag.

Seitzer J., Buckley J. P., Pan Y., "*Interconnected Knowledge-Based Systems*"; Proceedings of the Third Grace Hopper Celebration of Women in Computing 2000; Cape Cod, Massachusetts, September 2000.

Scientific and professional societies of which a member:

IEEE
ACM

Honors and awards:

Upsilon Phi Epsilon Honor Society
President's List
Dean's List

Institutional and professional service in the last five years:

Member CPE Committee, 2004 - 2009
Co-Director of the Computer Science Graduate Program (1997-2001) Co-advisor for the student chapter of ACM (1998-2001)
Advisor/Coach for the Computer Science Student Programming Team (ACM) (1995-1999)
Member of the College of Arts and Sciences Graduate Committee (1997-2001)

Percentage of time available for research or scholarly activities: 20%

Percentage of time committed to the program: 80%**.**

John Loomis

Name and academic rank:

John Loomis, Associate Professor, Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232;
Phone: (937) 229 3981.
Email: John.Loomis@notes.udayton.edu
Home page: www.johnloomis.org

Degrees with fields, institution, and date:

Ph.D., Optical Sciences, University of Arizona, 1980
M.S., Physics, University of Illinois, 1968
B.S., Physics, Case Institute of Technology, 1966

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

2002-Present	Associate Professor of Electrical and Computer Engineering
1980-2002	Professor, Electro-Optics (part time), instructor Computer Science (part time)

Other related experience, i.e., teaching, industrial, etc:

1979-2002	Research Optical Physicist, University of Dayton Research Institute
1974-1979	Graduate Assistant, University of Arizona, Optical Sciences
1969-1974	United States Air Force (High Energy Laser Program, Kirtland AFB, NM)

Consulting, patents, etc.

1974-1979	Consulting with UDRI, Honeywell, Oak Ridge National Laboratory, Livermore Laboratory

States in which professionally licensed or certified, if applicable:

None

Principal publications of the last five years:

None

Scientific and professional societies of which a member:

Eta Kappa Nu, Tau Beta Pi, Sigma Xi

Honors and awards:

None

Institutional and professional service in the last five years:

CPE Program Committee, 2006 – present, Chair 2006 – 2008, 2009 – present
Eta Kappa Nu, local chapter faculty advisor, 2008 – present
Accreditation and Continuous Improvement Committee, Dean's office, 2006 – 2008

Percentage of time available for research or scholarly activities: 5%

Research interests include computer and digital design, optics, computer graphics, engineering software development, computer vision and image processing. Research is usually associated with special topic graduate classes.

Percentage of time committed to the program: 95%**.**

John Weber

Name and academic rank:

John G. Weber, Professor and Assistant Dean for Recruitment and Continuous Improvement, University of Dayton, 300 College Park, Dayton, OH 45469-0232

Email: John.Weber@notes.udayton.edu

Degrees with fields, institution, and date:

Ph.D.E.E., University of Missouri, 1971
M.S.E.E., University of Missouri, 1964
B.S.E.E., St. Louis University, 1963

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

2005-Present Assistant Dean of Engineering, University of Dayton, Dayton, OH
2001-2005 Visiting Professor of Electrical and Computer Engineering, University of Dayton, Dayton, OH

Other related experience, i.e., teaching, industrial, etc:

2007-2009 Principal Investigator – Advanced Electronics for Muon Tomography in Support of Decision Sciences Corporation, San Diego, CA.
1994 – 2001 Vice President and Chief Technology Officer, GreyStone Technology, Inc, San Diego, CA
1997-1999 Independent Consultant, San Diego, CA
1992-1994 President, Technology Source Corp., Dayton, OH
1990 – 1992 Vice President and General Manager, Tactical Systems Group, Sverdrup Technology, Inc., Fort Walton Beach, FL
1982 – 1990 Chief Scientist, Ball System Engineering Division, San Diego, CA
1981 – 1982 Senior Engineer, TRW, Inc., San Diego, CA
1980 – 1981 Member of the Technical Staff, VERAC, Incorporated, San Diego, CA
1979 – 1980 Member of the Technical Staff, Simulation Technology, Inc., Dayton, OH
1963 – 1979 Officer, United States Air Force

Consulting, patents, etc.

States in which professionally licensed or certified, if applicable:

None

Principal publications of the last five years:

Scientific and professional societies of which a member:

Honors and awards:

Institutional and professional service in the last five years:

Percentage of time available for research or scholarly activities: 20%

Percentage of time committed to the program: 80%.

Keigo Hirakawa

Name and academic rank:

Keigo Hirakawa, Assistant Professor, Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232; Phone: (937) 229-3100.

Email: k.hirakawa@notes.udayton.edu

Degrees with fields, institution, and date:

PhD, Electrical and Computer Engineering, Cornell University, Ithaca, NY, 2005.
M.S., Electrical and Computer Engineering, Cornell University, Ithaca, NY, 2002.
B.S., Electrical Engineering, Princeton University, Princeton, NJ, 2000.
M.M., Jazz Performance, New England Conservatory, Boston, MA, 2006.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Assistant Professor: January 2010- Current.

Other related experience, i.e., teaching, industrial, etc:

Research Associate, Harvard University, Cambridge, MA, 2008-2009.
Postdoctorate Research Fellow, Harvard University, Cambridge, MA, 2007-2008.
Preceptor/Lecturer, Harvard Unviersity, Cambridge, MA, 2006-2007.

Consulting, patents, etc.

4 patents, two patents issued.

States in which professionally licensed or certified, if applicable:

None.

Principal publications of the last five years:

V. Ramachandra, K.H., M. Zwicker, T. Nguyen, "Spatio-Angular Sharpening for Multiview 3D Display," IEEE Trans. Visualization and Graphics, to appear.
K.H., P.J.Wolfe, "Spatio-Spectral Color Filter Array Design," IEEE Trans. Image Processing, Oct. 2008.
K.H., T.W. Parks, "Total Least Squares Method for Image Denoising," IEEE Trans. Image Processing, Sept. 2006.
K.H., T.W. Parks, "Joint Demosaicing and Denoising," IEEE Trans. Image Processing, Aug. 2006.
K.H., T.W. Parks, "Adaptive Homogeneity-Directed Demosaicing Algorithm," IEEE Trans. Image Processing, Mar. 2005.
Chakrabarti, K.H., T. Zickler, "Computational Color Constancy with Spatial Correlations," IEEE Pattern Analysis and Machine Intelligence, under review.
K.H., P.J.Wolfe, "Skellam Shrinkage: Wavelet-Based Intensity Estimation for Inhomogeneous Poisson Data," Anals of Stats, under review.
K.H., P.J. Wolfe, "Rewiring Filterbanks for Local Fourier Analysis: Theory and Practice, IEEE Trans. Information Theory, under review.

Scientific and professional societies of which a member:

IEEE, Member. SPIE, Member.

Honors and awards:

Keynote Speaker: IS&T CGIV 2008, PCSJ-IMPS 2009.
Plenary Speaker: CSAJ 2009.
Docomo USA Labs Innovative Paper Award, IEEE ICIP 2007.
Lockheed Martin Fellowship Award, 2001.
Princeton University: magna cum laude, 2000. New England Conservatory, Cum Laude.
Sigma Xi Scientific Research Society, 2000; Tau Beta Pi National Engineering Honor Society, 1999.

Institutional and professional service in the last five years:

Organization Committee: IEEE ICIP 2012, SPIE VIPC 2011, OSA DIPA 2010.
Residency, Institute for Mathematics and Its Applications (IMA), Univ. of Minnesota, 2007.
Tutorial, IEEE ICIP 2008; Session Chair, IEEE ICASSP 2007 & 2008.
Reviewer for IEEE Trans. Image Processing, IEEE Trans. Signal Processing, IEEE Trans. Circuits Systems for Video Technology, IEEE Signal Processing Letters, IEEE CVPR, IEEE ICASSP, IEEE ICIP, OSA DIPA, SPIE Journal of Electronic Imaging.

Percentage of time available for research or scholarly activities: 25%.

Research on Signal-Dependent Noise Removal funded by Sony Corp.

Percentage of time committed to the program: 75%.

Malcolm W. Daniels

Name and academic rank:

Malcolm W. Daniels, Associate Professor, Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232;

Email: Malcolm.Daniels@notes.udayton.edu

Degrees with fields, institution, and date:

Ph.D.	Electrical Engineering, University of Strathclyde (Scotland), 1982
B.Sc.	Electrical and Electronic Engineering, University of Strathclyde (Scotland), 1979

Faculty Service:

Associate Dean (Graduate Programs and Research)	2007 – present
Chairperson (Elec. & Comp. Engr.)	2005-2007
Associate Dean (Undergraduate Programs)	2001-2005
Assistant Professor	1985-2001

Other related experience, i.e., teaching, industrial, etc:

Research Fellow, Industrial Control Center, University of Strathclyde (1988-1985)
Research Engineer, BMS Associates (Glasgow, Scotland), 1982-1983.

Consulting, patents, etc.

No current commitments.

States in which professionally licensed or certified, if applicable:

None

Principal publications of the last five years:

"Development and Simulation Model for an Aircraft Electrical Main Generator", IEEE APEC Conference (Autston, TX), 2008 (co-author).

Scientific and professional societies of which a member:

American Society for Engineering Education

Honors and awards:

Magnus McLean Memorial Medal for Distinction in Electrical Engineering (1979)
Epsilon Delta Tau - Outstanding Faculty Achievement Award (1990)

Institutional and professional service in the last five years:

Dayton Area Graduate Studies Institute: Operating Committee & Research Committee
NSF ADVANCE Program: LEADER Consortium – Institutional Coordinator and Council Member
FUTURE JOBS Program – Steering Committee
University Marshall
Provost and President Councils, Academic Senate and multiple University Committees
Leadership workshops; Regional and National Deans Council

Percentage of time available for research or scholarly activities: 0%

Percentage of time committed to the program: 100%**.**

Monish Chatterjee

Name and academic rank:

Monish Chatterjee, Professor, Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232; Phone: (937) 229 3594.

Email: monish.chatterjee@notes.udayton.edu

Degrees with fields, institution, and date:

PhD in Electrical & Computer Engineering, University of Iowa, Iowa City, 1985.

M.S. in Electrical & Computer Engineering, University of Iowa, Iowa City, 1981.

B.Tech. (Hons) in Electronics & Electrical Communications Engineering, Indian Institute of Techonlogy (I.I.T.), Kharagpur, India, 1979.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Professor: August 2002 - Current.

Other related experience, i.e., teaching, industrial, etc:

Associate Professor, State University of New York, Binghamton, NY, August 1992-2002.
Assistant Professor, State University of New York, Binghamton, NY, August 1986-1992.
Visiting Assistant Professor, University of Iowa, Iowa City, Iowa, August 1985-July 1986.
Sabbatical, 1994-1995, I.I.T. New Delhi and Kanpur, India, from SUNY Binghamton.

Consulting, patents, etc.

None.

States in which professionally licensed or certified, if applicable:

None.

Principal publications of the last five years:

P.P.Banerjee, M.R.Chatterjee, N.Kukhtarev and T.Kukhtareva, "Volume Holographic Recording and Readout for 90-deg Geometry," **Opt. Eng.**, vol. 43, no. 9, pp. 2053-2060, Sept. 2004.

M.R. Chatterjee, “Poetic Intuition and Cosmic Reality,” in Rabindranath Tagore: Universality and Tradition, P. Hogan and L. Pandit, Eds., Fairleigh Dickinson University Press, 2004.

P.P.Banerjee, G.Nehmetallah and M.R.Chatterjee, "Numerical modeling of cylindrically symmetric nonlinear self-focusing using an adaptive fast Hankel split-step method," **Opt. Comm.**, vol. 249, no. 1-3, pp. 293-300, 2005.

M.R. Chatterjee and S.-T. Chen, "Digital Holography and 3-D Display," chapter 13, pp.379-425. T. -C. Poon, Ed.; Springer Verlag, June 2006.

M.R. Chatterjee, P.P. Banerjee and P.R. Anugula, "Investigation of Negative Refractive Index in Reciprocal Chiral Materials," presented at the SPIE Annual Meeting, San Diego, CA, August 2006. Published in *The Nature of Light: Light in Nature*, K. Creath, Ed., **Proc. SPIE 6285**, pp. 628504-1-6.
P.P. Banerjee and M.R. Chatterjee, "Negative index in the presence of chirality and material dispersion," **JOSA B**, vol. 26, no. 2, pp. 194-202, February 2009.
A.K. Ghosh, P. Verma, S. Cheng, R.C. Huck, M.R. Chatterjee, and M. al-Saedi, "Design of acousto-optic chaos based secure free-space optical communication links," in **Proc. SPIE 7464**, San Diego, CA, USA, August 2009.

Scientific and professional societies of which a member:

Senior Member, IEEE, since 1988. Member of OSA, SPIE, ASEE and Sigma Xi.

Honors and awards:

Binghamton University Award for Excellence in Teaching, 2000.
SUNY Chancellor's Award for Excellence in Teaching, 2000.
Golden Key International Honor Society, 2000.
Humanities Fellow (with Professor Patricia Johnson), University of Dayton, 2005-2007.

Institutional and professional service in the last five years:

ECE Graduate Studies Committee, Fall 2004-2008.
Graduate Studies and Research Committee, Fall 2004-2008.
ECE ABET Coordinator, 2008-2009.
ELE Program Committee, Fall 2009-.
University of Dayton Grievance Hearing Board, Fall 2009-.
Reviewer of Archival Journal Papers, JOSA A/B, Applied Optics, Optics Letters.
Invited Panelist, National Science Foundation, 2008.
Invited Feature Editor, Applied Optics Feature Issue on Acousto-Optics, 2008.

Percentage of time available for research or scholarly activities: 25%.
Recent research topics have included

analysis of population dynamics in an EDFA
negative refractive index via dispersion in chiral and other materials;
signal encryption and decryption using acousto-optic chaos.

Percentage of time available for the program: 75%.

Partha Banerjee

Name and academic rank:

Partha Banerjee, Professor, Department of Electrical and Computer Engineering and Electro-optics, University of Dayton, 300 College Park, Dayton, OH 45469-0232; Phone: (937) 229 3561. Email: partha.banerjee@notes.udayton.edu

Degrees with fields, institution, and date:

PhD in Electrical Engineering, University of Iowa, 1983.

M.S. in Electrical Engineering, University of Iowa, 1980.

B.Tech. in Electronics & Electrical Communication Engineering, Indian Institute of Technology, India, 1979.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Professor: August 2000- Current.

Other related experience, i.e., teaching, industrial, etc:

Professor, University of Alabama in Huntsville, 1993-2000

Associate Professor, University of Alabama in Huntsville, 1991-1993

Associate Professor, Syracuse University, 1988-1991

Assistant Professor, Syracuse University, 1984-1988

Visiting assitant professor, university of Iowa, 1983-1984.

Sabbatical work at Air Force Research Laboratory, Materials Directorate, AY 2008-2009.

Sabbatical work at Army Research labs, and at Osaka City University, AY 1998-1999.

Consulting, patents, etc.

AFRL Summer Faculty Fellow, Summers of 2008 and 2009.

NASA Summer Faculty Fellow, Summers of 1999 and 2000.

On-site contractor, Air Force Research Laboratory (AFRL), since summer of 2008.

Consultant to DMS Technology July 2006-current.

One patent issued.

States in which professionally licensed or certified, if applicable:

None.

Principal publications of the last five years:

P.P. Banerjee and M.R. Chatterjee, "Negative index in the presence of chirality and material dispersion", J. Opt. Soc. Am. B **26** pp. 194-202 (2009).

Y. Abdelaziez and **P.P. Banerjee**, "Modeling and characterization of PLZT adaptive microlenses", Journal of Microlithography, Microfabrication, and Microsystems **7**, pp. 013011:1-10 (2008).

R. Aylo, **P. P. Banerjee** and G. Nehmetallah, "Optical Propagation through a Homogeneous Mixture of Positive and Negative Index Materials", Proceedings of SPIE **7029** 702917-1 – 702917-10 (2008).

P.P. Banerjee, R. Aylo and G. Nehmetallah, "Baseband and envelope propagation in media modeled by a class of complex dispersion relations", J. Opt. Soc. Am. B **25**, pp. 990-994 (2008).

P. P. Banerjee and G. Nehmetallah, "Linear and Nonlinear Propagation in Negative Index Materials", J. Opt. Soc. Am. B **23** pp. 2348-2355 (2006).

G. Nehmetallah and **P. P. Banerjee**, "Stabilization of a (D+1)-dimensional Dispersion Managed Solitons in Kerr Media by an Alternating Dispersion Structure," J. Opt. Soc. Am. B **23**, pp. 203-211 (2006).

Scientific and professional societies of which a member:

Fellow OSA, 1998; Fellow SPIE, 1999; Senior Member, IEEE, 1988.

Honors and awards:

Sigma Xi's Noland Award for Excellence in Research, April 2004.
NSF Presidential Young Investigator Award, 1988.

Institutional and professional service in the last five years:

Chair, ECE 2000-2005

Chair, ECE graduate committee, 2005-2007.

Reviewer for J. Opt. Soc. Amer. A and B, Applied Optics, Opt. Lett., Microwave and Opt. Tech Lett., Opt. Express, Opt. Comm.

Organizer of OSA digital holography topical meeting, 2010; member of technical committee since 2008; committee member in SPIE Photorefractive Materials and Devices since 1996.

Percentage of time available for research or scholarly activities: 25%.

Recent research on aircraft attitude determination, droplet holography, surface crack mesaurement and metamaterial lenses, funded by AF, Army, and DARPA.

Percentage of time committed to the program: 75%.

Ralph Barrera

Name and academic rank:

Ralph Barrera, Adjunct Professor, Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232; Phone: (937) 229 3188.

Email: Ralph.Barrera@notes.udayton.edu

Degrees with fields, institution, and date:

DE in Electrical Engineering, University of Dayton, 1988.

M.S. in Electrical Engineering, The Ohio State University, 1974.

B.S. in Electrical Engineering, The Ohio State University, 1971.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Adjunct Professor: January 2000- Present.

Lecturer: January 2009-May 2009.

Other related experience, i.e., teaching, industrial, etc:

Curtiss-Wright / Systran Corp., Dayton, Ohio 1996-2008

ITCN Inc., Miamisburg, Ohio 1993-1996

Digital Technology Inc., Dayton, Ohio 1984-1992

Harris Corporation, Dayton, Ohio 1980-1984

U.S.A.F. Wright-Patterson AFB, Dayton, Ohio 1971-1980

Consulting, patents, etc.

US Patent # 4,495,582 “Control system for pre-setting and operation of a printing press and collator”, January 22, 1985

States in which professionally licensed or certified, if applicable:

None.

Principal publications of the last five years:

"**Error-Free Data Acquisition and Archival for Today's Demanding High-Bandwidth Military Applications**," Barrera, R. E., September 2007, *Defense Tech Brief*

"**Optimizing Data Recorder System Architecture**," Barrera, R. E., May 2007, *RTC Magazine*

"**Image fusion: Shared memory supports flexible, multiple sensor imaging systems**," Barrera, R. E., April 2006, *Embedded Computing Design*

"**Shared Memory Network Targets Video-Centric Data Acquisition**," Barrera, R. E., January 2006, *RTC Magazine*

"**Serial-FPDP on XMC Delivers On Offloading the VME Backplane**," Barrera, R. E., January 2006, *MIL/COTS Digest*

"High-Speed Data Acquisition Systems Benefit from New Shared-Memory Communication Technology," Barrera, R. E., Cosenza, L., April 2005, *COTS Journal*

"**High Speed Sensors and Shared Memory**," Barrera, R. E., March 2005, *RTC Magazine*

Scientific and professional societies of which a member:

None

Honors and awards:

None

Institutional and professional service in the last five years:

Percentage of time available for research or scholarly activities: 20%.

Percentage of time committed to the program: 80%.

Raúl Ordóñez

Name and academic rank:

Raúl Ordóñez, Associate Professor, Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232; Phone: (937) 229 3183.

Email: Raul.Ordonez@notes.udayton.edu

Degrees with fields, institution, and date:

PhD in Electrical Engineering, The Ohio State University, 1999.

M.S. in Electrical Engineering, The Ohio State University, 1996.

B.E. in Electrical Engineering, Monterrey Institute of Technology (ITESM), Monterrey, Mexico, 1994, Summa Cum Laude.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Associate Professor: August 2006-current.

Assistant Professor: August 2001-2006.

Other related experience, i.e., teaching, industrial, etc:

Assistant Professor, Dept. Electrical and Computer Engineering, Rowan University, Glassboro, NJ, August 1999-2001.

Boeing Welliver Faculty Fellow, Seattle, WA, summer 2008.

Sabbatical work at Air Force Research Laboratory, Sensors Directorate, AY 2009-10.

Consulting, patents, etc.

None.

States in which professionally licensed or certified, if applicable:

None.

Principal publications of the last five years:

C. Zhang, **R. Ordonez**, "Robust and adaptive design of numerical optimization-based extremum seeking control," Automatica, Vol. 45, Issue 3, pp. 634-646, March 2009.
Z. Jiang**, R. Ordonez**, "On-line robust trajectory generation on approach and landing for reusable launch vehicles," Automatica, Vol. 45, Issue 7, pp. 1668-1678, July 2009.
K. Jahan, **R. Ordóñez**, R. Ramachandran, S. Balzer, M. Stern, "Modeling Biodegradation of Nonylphenol," Water, Air and Soil Pollution, Vol. 8, pp. 395-404, Aug. 2008.
V. Gazi, **R. Ordóñez**, "Target Tracking Using Artificial Potentials and Sliding Mode Control," International Journal of Control, 80:10, 1626 - 1635, Oct. 2007.
J. Yao, **Ordóñez R**., V. Gazi, "Swarm Tracking Using Artificial Potentials and Sliding Mode Control," ASME J. Dyn. Sys., Meas., Control, Vol. 129, Sept. 2007, Issue 5, pp. 749-754.
Zhang C., **Ordóñez R**., "Numerical Optimization-Based Extremum Seeking Control with Application to ABS Design," IEEE Transactions on Automatic Control, Vol. 52, No. 3, pp. 454-467, March 2007.

Ordóñez R., Spooner J. T., Passino K.M., "Experimental Studies in Nonlinear Discrete-Time Adaptive prediction and Control," IEEE Transactions on Fuzzy Systems, Vol. 14, No. 2, pp. 275-286, 2006.
Maggiore M., **Ordóñez R**., Passino K. M., Adibhatla S., "Estimator Design in Jet Engine Applications," Engineering Applications of Artificial Intelligence, Vol. 16, pp. 579-593, 2003.
Ordóñez R., Passino K.M., "Control of Discrete Time Nonlinear Systems with a Time-Varying Structure," Automatica, Vol. 39, No. 3. pp 463 – 470, 2003.

Scientific and professional societies of which a member:

Member, IEEE, since 1999. Member of IEEE Control Systems Society.

Honors and awards:

Boeing Welliver Faculty Fellowship, 2008.

Institutional and professional service in the last five years:

Associate Editor for the journal Automatica, since 2006

Publications Chair, 2008 IEEE Multiconference on Systems and Control (MSC2008)

Member of the Conference Editorial Board of the IEEE Control Systems Society

Publicity Chair, 2001 International Symposium on Intelligent Control

Member of the Program Committee and Program Chair, 2001 Conference on Decision and Control

Technical Publication Reviewer: IEEE Transactions on Automatic Control, IEEE Transactions on Control Systems Technology, IEEE Transactions on Neural Networks, IEEE Transactions on Fuzzy Systems, International Journal of Control, Automatica, International Journal of Systems Science, Fuzzy Sets and Systems.

Percentage of time available for research or scholarly activities: 25%.

Recent research on multi-UAV coordination, funded by AFRL

Recent research on industrial robotics, funded by Motoman, Inc.

Percentage of time committed to the program: 75%.

Robert Penno

Name and academic rank:

Robert Penno, Associate Professor, Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232; Phone: (937) 229 3984.

Email: Robert.penno@notes.udayton.edu

Degrees with fields, institution, and date:

PhD in Electrical Engineering, University of Dayton, 1987.

M.S. in Electrical Engineering, Rose-Hulman Institute of Technology, 1984.

B.S. in Mechanical Engineering, Rose-Hulman Institute of Technology, 1971

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Associate Professor: August, 2000 -Present.
Assistant Professor: August 1987-2000.

Other related experience, i.e., teaching, industrial, etc:

General Electric Company, 1971-1981
Sabbatical work at Air Force Research Laboratory, Sensors Directorate, 2007.
Sabbatical work at Air Force Research Laboratory, Sensors Directorate, 1994-1995.

Consulting, patents, etc.

AFOSR Summer Faculty Fellow, Summers of 1994-1996, 2007
IPA, 1997-2001, 2002-2004
On-site contractor, Air Force Research Laboratory (AFRL), since Summer of 2004.

States in which professionally licensed or certified, if applicable:

Washington, Indiana

Principal publications of the last five years:

Peer-reviewed journal articles:

"Broadband Microstrip Leaky Wave Antennas with Inhomogeneous Materials", Hai Jiang, Robert Penno, Krishna Pasala, Leo Kempel, Stephen Schneider, Communication, IEEE Transactions on Antennas and Propagation, May, 2009

"A New Application of Nonlinear Control Theory to the Coupled Oscillator Array", Hai Jiang, Raul Ordonez, Robert Penno, *Automatica* (submitted for publication)

Papers published in proceedings from scholarly meetings:

"Randomness of Free Running Frequencies in Coupled Oscillator Arrays with the Effects of Amplitude Dynamics", Hai Jiang, Robert Penno, IEEE APS Conference, Charleston, SC,, June, 2009

"Controlling the Main Beam of a Half-Width Microstrip Leaky-Wave Antenna Using a Row of Inductive Posts", Michael Corwin, Robert Penno, Leo Kempel Steve Schneider, Robert Clemmons, Joshua Radcliffe, IEEE APS Conference, Charleston, SC,, June, 2009

"Effects of Amplitude Dynamics for Nonlinear Coupled Oscillator Arrays", Hai Jiang, Krish Pasala, Robert Penno, IEEE APS Conference, San Diego, CA, June, 2008

"Effects of Amplitude Dynamics in Coupled Oscillator Arrays", Hai Jiang, Robert Penno, NAECON/IEEE Conference 2008, Dayton, OH, July, 2008

Development of the Two D Wall for Simulation of Glint from Atmospheric Propagation and Multipath, Robert Penno, Seng Hong, John Glett, Mark Haenni, Rey Febo, Proceedings of the 2008 Aerospace Conference, (March, 2008)

"Leaky Wave Antenna Research at AFRL", Dan Janning, John McCann, Michael Corwin, Thomas Dalrymple, Leo Kempel, Daniel Killips, Krishna Pasala, Robert Penno, Joshua Radcliffe, Stephen Schneider, and Kyle Zeller, 2007 Antenna Applications Symposium, Monticello, Illinois

"Finite Element-Boundary Integral Simulation of a Conformal Microstrip Leaky-wave Antenna", J. Radcliffe, S. Schneider, L. Kempel, and R. Penno, 2007 *IEEE Antennas and Propagation Society Symposium,* Honolulu, HI, June 2007.

***"Back Lobe Elimination Using a Conformal Microstrip Leaky Wave Antenna*", R. Penno, Proceedings of 2006 IEEE Radar Conference, April, 2006,**

***"Multidisciplinary Design Optimization Through Use of Stochastic Mutation Algorithm",* Seng M. Hong, Gary A. Thiele, and Robert P. Penno, SPIE Defense and Security Symposium 2006, April, 2006**

***"Back Lobe Elimination Using a Conformal Microstrip Leaky Wave Antenna*", Proceedings of 2006 IEEE Radar Conference, (April, 2006),**

Scientific and professional societies of which a member:

Senior Member, IEEE, since 2001.
Member of Sigma Xi and Eta Kappa Nu.

Honors and awards:

Finalist, *1999 Dr. Samuel Burka Award,* AFRL, WPAFB, for scientific research done at WPAFB in the development of angle estimation techniques using single aperture, multi-mode antennas.
Finalist, *2001 Dr. Samuel Burka Award*;

Institutional and professional service in the last five years:

August 2009-Current: Chair, Undergraduate Laboratories Committee.

January 2004-May, 2007: Vice-President, Academic Senate, University of Dayton

Percentage of time available for research or scholarly activities: 20%

Simulation and modeling of dynamic radar returns from airborne platforms

Percentage of time committed to the program: 80%.

Russell C. Hardie

Name and academic rank:

Russell C. Hardie, Professor, Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232; Phone: (937) 229 3188. Email: rhardie@udayton.edu

Degrees with fields, institution, and date:

Ph.D. in Electrical Engineering, University of Delaware, May 1992.
M.S. in Electrical Engineering, University of Delaware, Newark, Delaware, May 1990.
Bachelor of Engineering Science (*Magna Cum Laude)*, Loyola College, May 1988.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Professor: August 2005-present.
Associate Professor: August 1999-2005.
Assistant Professor: August 1993-1999.

Other related experience, i.e., teaching, industrial, etc:

Senior Scientist, Earth Satellite Corporation, Rockville, Maryland: August 1992-1993.

Consulting, patents, etc.

iCAD, Beavercreek, Ohio and L-3 Communications Cincinnati Electronics, Mason, Ohio

Patent No.: US 7,486,812 B2, Feb. 3, 2009. *Shape Estimation and Temporal Registration of Lesions and Nodules.* Metin N. Gurcan, Russell C. Hardie, Steven K. Rogers. iCAD, Inc. Beavercreek, OH.

States in which professionally licensed or certified, if applicable: None.

Principal publications of the last five years:

P. C. Hytla, **R. C. Hardie**, M. Y. Eismann, and J. Meola, "Anomaly Detection in Hyperspectral Imagery: A Comparison of Methods Using Diurnal and Seasonal Data," J. Appl. Remote Sens., Vol. **3**, 033546 (2009); doi:10.1117/1.3236689

T. Messay, **R. C. Hardie** and S. K. Rogers, "A New Computationally Efficient CAD System for Nodule Detection in CT Imagery," *Medical Image Analysis*, 2008 Jun;12(3):240-58. Epub 2007 Oct 25.

R. C. Hardie, S. K. Rogers, T. Wilson, and A. Rogers, "Performance analysis of a new computer aided detection system for identifying lung nodules on chest radiographs," *Medical Image Analysis*, Vol. 12, Issue 3, pp 240-258, June 2008. doi:10.1016/j.media.2007.10.004

M. T. Eismann, J. Meola, and **R. C. Hardie**, "Hyperspectral change detection in the presence of diurnal and seasonal variations," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 46, pp. 237-249, January 2008.

R. C. Hardie, "A Fast Super-Resolution Algorithm Using an Adaptive Wiener Filter," *IEEE Transactions on Image Processing*, Vol. 16, No. 12, Dec. 2007 pp. 2953-2964.

R. C. Hardie and D. R. Droege, "A MAP Estimator for Simultaneous Super-Resolution and Detector Nonuniformity Correction," *EURASIP Journal on Advances in Signal Processing*, Volume 2007 (2007), Article ID 89354, 11 pages, doi:10.1155/2007/89354.

B. Narayanan, **R. C. Hardie**, K. E. Barner, and M. Shao, "A computationally efficient super-resolution algorithm for video processing using partition filters," *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 17, No. 5, May 2007.

Y. Lin, **R. C. Hardie**, Q. Sheng, M. Shao, and K. E. Barner, "Improved Optimization of Soft Partition Weighted Sum Filters and Their Application to Image Restoration," *OSA Applied Optics*, Vol. 45, No. 12, April 2006.

M. Shao, K. E. Barner, and **R. C. Hardie**, "Partition-Based Filters for Image Demosaicking and Super-Resolution Reconstruction," *Optical Engineering*, Vol. 44, pp. 107003-1-107003-14, Oct. 2005.

Y. Lin, **R. C. Hardie**, and K. E. Barner, "Subspace partition weighted sum filters for image restoration," *IEEE Signal Processing Letters*, Vol. 12 No. 9, September 2005, pp. 613-616.

B. Narayanan, **R. C. Hardie**, and R. A. Muse, "Scene-based nonuniformity correction technique that exploits knowledge of the focal-plane array readout architecture," OSA *Applied Optics*, Vol. 44, No. 17, pp. 3482-3491, June 2005.

M. T. Eismann and **R. C. Hardie**, "Hyperspectral resolution enhancement using high resolution multispectral imagery with arbitrary response functions," *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 43, pp. 455-464, March 2005.

Scientific and professional societies of which a member:

Senior Member of IEEE (2001-present) and IEEE Signal Processing Society.

Honors and awards:

SOCHE Award for Excellence in Teaching, 2006.
University of Dayton **Alumni Award in Teaching**, 2006.
School of Engineering **Award of Excellence in Teaching**, 1999.
Rudolf Kingslake Medal and Prize from SPIE. Principal author on journal paper selected by the SPIE awards committee as the most noteworthy original paper to appear in *Optical Engineering* in 1998.

Institutional and professional service in the last five years:

University of Dayton Academic Senate (Jan. 2004-2007).
Member of the Electrical Engineering Program Committee (2005-present).
University of Dayton Faculty Board 2008-2010.
Chair of the School of Engineering Stander Symposium Committee (2006).
School of Engineering First Year Experience Committee (2004-2008).

Percentage of time available for research or scholarly activities: 25%.

AFRL sponsored research on super-resolution and image restoration

Percentage of time committed to the program: 75%.

Saverio Perugini

Name and academic rank:

Saverio Perugini, Associate Professor, Department of Computer Science, University of Dayton, 300 College Park, Dayton, OH 45469-2160; Phone: (937) 229 4079.

Email: Saverio.Perugini@notes.udayton.edu

Degrees with fields, institution, and date:

Ph.D. in Computer Science, Virginia Tech, 2004.

M.S. in Computer Science, Virginia Tech, 2001.

B.S. in Computer Science, Villanova University, 1998.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Associate Professor: August 16, 2010–present.
Assistant Professor: August 16, 2004–August 15, 2010.

Principal publications of the last five years:

Perugini, S. (2010). Personalization by website transformation: Theory and practice. *Information Processing and Management*, 46(3), 284-294.

Perugini, S. & Ramakrishnan, N. (2010). Program transformations for information personalization. *Computer Languages, Systems and Structures*, 36(3), 223-249.

Perugini, S. (2010). Supporting multiple access paths to objects in information hierarchies: Faceted classification, faceted search, and symbolic links. *Information Processing and Management*, 46(1), 22-43.

Perugini, S. & Ramakrishnan, N. (2009). *Exploring out-of-turn interactions with websites*. *Journal of Digital Information*, 10(4).

Perugini, S. (2008). Symbolic links in the Open Directory Project. *Information Processing and Management*, 44(2), 910-930.

Perugini, S., Anderson, T.J., & Moroney, W.F. (2007). A study of out-of-turn interaction in menu-based, ivr, voicemail systems. *Proceedings of the 25th International ACM Conference on Human Factors in Computing Systems*, 961-970. New York, NY: ACM Press.
Perugini, S. & Ramakrishnan, N. (2007). Mining functional dependencies for flexible information access. *Journal of the American Society for Information Science (JASIST)*, 58(12), 1805-1819. (In special issue of JASIST on Mining Web Resources for Enhancing Information Retrieval.)

Perugini, S. & Ramakrishnan, N. (2006). Interacting with web hierarchies. *IEEE IT Professional*, 8(4), 19-28.

Scientific and professional societies of which a member:

Upsilon Pi Epsilon, inducted April 1997.

Association for Computing Machinery (ACM), 1999–2010.

Institute of Electrical and Electronics Engineers (IEEE), 2001–2010.

IEEE Computer Society (IEEE-CS), 2001–2010.

Honors and awards:

Upsilon Pi Epsilon/IEEE Computer Society Award for Academic Excellence, 2001. The IEEE Computer Society gives only four such awards internationally each year. Recipients announced in *IEEE Computer*, 35(4), 76, 2001.

S.N. Alexander ACM Fellowship Award (Washington, DC Chapter), 2000. The Washington, DC chapter of the ACM gives only one such award annually to a student enrolled in a graduate program at a college or university in MD, VA, or DC.

Virginia Tech College of Engineering P.E. Torgersen Ph.D. Graduate Student Research Excellence Award, first-place winner of three finalists (of 23 applicants).

Institutional and professional service in the last five years:

CPS Member of the Computer Engineering Curriculum Committee, August 2009–present

CPS Member of the Computer Engineering Curriculum ABET Accreditation Sub-committee, August 2009–present.

Graduate Program Committee Member, Department of Computer Science, University of Dayton, since Fall 2009.

Computer Science Chair Search Coordination Committee, Department of Computer Science, University of Dayton, October–December 2008.

Computer Science Colloquium Series Coordinator, Department of Computer Science, University of Dayton, Fall 2006–Spring 2010.

Coach, University of Dayton Programming Team, since Fall 2005–Fall 2008.

Webmaster (http://www.udayton.edu/~cps/), Department of Computer Science, University of Dayton, since Fall 2007.

Percentage of time available for research or scholarly activities: 50%

Percentage of time committed to the program: 50%**.**

R. Sritharan

R. Sritharan, Associate Professor, Department of Computer Science;
Phone: (937) 229-3831. Email: srithara@notes.udayton.edu

Degrees with fields, institution, and date:

Ph. D. (Computer Science), Vanderbilt University, August 1995.
M. S. (Computer Science), Vanderbilt University, May 1988.
B. Tech (Computer Science and Engineering), Indian Institute of Technology, Kharagpur, May 1985.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Associate Professor of Computer Science, University of Dayton, August 2003 - present.
Assistant Professor of Computer Science, University of Dayton, August 1999 - July 2003.
Assistant Professor of Computer Science, Indiana State University, August 1995 - July 1999.

Other related experience, i.e., teaching, industrial, etc:

Programmer, Vanderbilt University Computer Center, May 1991 – July 1995.

Adjunct Faculty, Computer Science Department, Tennessee State University, Fall 1990.

Graduate Teaching Assistant, Computer Science Department, Vanderbilt University, September 1985 – August 1990.

Principal publications of the last five years:

Accepted to appear in refereed journals

E. M. Eschen, C. T. Hoàng, J. P. Spinrad, and R. Sritharan, On graphs without a C_4 or a diamond. To appear in *Discrete Applied Mathematics*.

P. Heggernes, F. Mancini, C. Papodopoulos, and R. Sritharan, Strongly chordal and chordal bipartite graphs are sandwich monotone, To appear in *Journal of Combinatorial Optimization*.

Published in refereed journals

A. Abueida, A. H. Busch, and R. Sritharan, A min-max property of chordal bipartite graphs with applications, *Graphs and Combinatorics* 26 (2010), 301-313.

A. Brandstädt, V. B. Le, and R. Sritharan, Structure and linear time recognition of 4-leaf powers, *ACM Transactions on Algorithms* 5 (2009), no. 1, Art. 11, 22 pp.

R. Sritharan, Chordal bipartite completion of colored graphs, *Discrete Mathematics* 308 (2008), 2581-2588.

D. Kratsch, J. P. Spinrad, and R. Sritharan, A new characterization of hh-free graphs, *Discrete Mathematics* 308 (2008), 4833-4835.

K. Cameron, E. M. Eschen, C. T. Hoàng, and R. Sritharan, The complexity of the list partition problem for graphs, *SIAM Journal on Discrete Mathematics* 21 (2007), 900-929.

R. B. Hayward, J. P. Spinrad, and R. Sritharan, Improved algorithms for weakly chordal graphs, *ACM Transactions on Algorithms* 3 (2007), no. 2, Art 14, 19 pp.

E. M. Eschen, C. T. Hoàng, and R. Sritharan, An $O(n^3)$-time recognition algorithm for hhds-free graphs, *Graphs and Combinatorics* 23 (2007), suppl. 1, 209-231.

C. M. H. de Figueiredo, L. Faria, S. Klein, and R. Sritharan, On the complexity of the sandwich problems for strongly chordal graphs and chordal bipartite graphs, *Theoretical Computer Science* 381 (2007), 57-67.

A. Brandstädt, E. M. Eschen, and R. Sritharan, The induced matching and chain subgraph cover problems for convex bipartite graphs, *Theoretical Computer Science* 381 (2007), 260-265.

A. Abueida and R. Sritharan, Cycle extendability and Hamiltonian cycles in chordal graph classes, *SIAM Journal on Discrete Mathematics* 20 (2006), 669-681.

A. Abueida and R. Sritharan, A note on the recognition of bisplit graphs, *Discrete Mathematics* 306 (2006), 2108-2110.

E. M. Eschen, C. T. Hoàng, M. Petrick, and R. Sritharan, Disjoint clique cutsets in graphs without long holes, *Journal of Graph Theory* 48 (2005), 277-298.

Scientific and professional societies of which a member:

Society for Industrial and Applied Mathematics (SIAM) since 1993.

Honors and awards:

Institutional and professional service in the last five years:

Faculty advisor to student chapter of ACM, University of Dayton, Fall 2006 - present.

Member, Faculty Search Committee, Computer Science Department, University of Dayton, Fall 1999 – present

Member, Tenure and Promotions Committee, Computer Science Department, University of Dayton, Fall 2003 - present

Percentage of time available for research or scholarly activities:

When semesters are in session : at most 10%.

Percentage of time committed to the program:

When semesters are in session : 90% involving courses serving three programs (CPS, CPE, CIS)

Tarek Taha

Name and academic rank:

Tarek Taha, Associate Professor, Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232; Phone: (937) 229 3119.

Email: Tarek.Taha@notes.udayton.edu

Degrees with fields, institution, and date:

PhD in Electrical Engineering, Georgia Institute of Technology, 2002.

M.S. in Electrical Engineering, Georgia Institute of Technology, 1998.

B.E.E.E. in Electrical Engineering, Georgia Institute of Technology, 1996.

B.A., Pre-Engineering, DePauw University, 1996.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Associate Professor: August 2009- Current.

Other related experience, i.e., teaching, industrial, etc:

Assistant Professor, Clemson University, Clemson, SC, Dec 2002 - Aug 2009.

AFRL Summer Faculty Fellow, Summers of 2004, 2005, 2006, and 2007.

States in which professionally licensed or certified, if applicable:

None.

Principal publications of the last five years:

K. L. Rice, T. M. Taha, A. M. Chowdhury, and A. Awwal, "Design and Acceleration of Phase-only Filter Based Optical Pattern Recognition for Fingerprint Identification," *Optical Engineering,* Volume 48, Issue 11, November 2009.

A. Awwal, K. L. Rice, and T. M. Taha, "Hardware Acceleration of Position Determination Using Dual Mode Multi-class Filter Operation of the Corner Cube Reflected Images," *Applied Optics*, 48:(27), 5190-5196, September 2009.

C. Vutsinas, K. L. Rice, and T. M. Taha, "A Streaming Architecture for Cognitive Computing," *Microprocessors and Microsystems,* 33:(2), 117-128, March 2009.

A. Awwal, K. L. Rice, and T. M. Taha, "Fast Implementation of Matched Filter Based Automatic Alignment Image Processing," *Journal of Optics and Laser Technology*, 41:(2), 193-197, March 2009.

K. L. Rice, C. Vutsinas, and T. M. Taha, "A Scaling Analysis of a Neocortex Model Implementation on the Cray XD1," *Journal of Supercomputing,* 47:(1), 21-43, January 2009.

K. L. Rice, C. Vutsinas, and T. M. Taha, "Hardware Acceleration of Image Recognition through a Visual Cortex Model," *Journal of Optics & Laser Technology*, 40:(6), 795-802, September 2008.

T. M. Taha, and D. S. Wills, "An Analytical Model of Superscalar Processor Performance," *IEEE Transactions on Computers*, 57:(3), 389-403, March 2008.

Scientific and professional societies of which a member:

IEEE, Member since 2002, Student member since 1994. Eta Kappa Nu, Phi Beta Kappa, Sigma Pi Sigma, and Alpha Lambda Delta.

Honors and awards:

NSF CAREER Award (2007).
Clemson University Board of Trustees Award for Faculty Excellence (2008).
Faculty Honors, Georgia Institute of Technology (Fall 94, Spring 95, Fall 95, Winter 96).

Institutional and professional service in the last five years:

August 2009-Current: CPE program committee.

Reviewer for NSF, IEEE Transactions on Computers, IEEE Transactions on VLSI, Applied Optics, Integration, the VLSI Journal. Also on the committee for several conferences and workshops.

Percentage of time available for research or scholarly activities: 25%.

Research on Neuromorphic Architectures funded by NSF and AFRL.

Research on Cluster implementation of neuromorphic algorithms funded by AFOSR and AFRL.

Percentage of time committed to the program: 75%.

Vijayan Asari

Name and academic rank:

Vijayan K. Asari, Ohio Research Scholars Chair in Wide Area Surveillance, and Professor, Department of Electrical and Computer Engineering, University of Dayton, 300 College Park, Dayton, OH 45469-0232; Phone: (937) 229 4504.
Email: Vijayan.Asari@notes.udayton.edu

Degrees with fields, institution, and date:

PhD in Electrical Engineering, Indian Institute of Technology, Madras, 1994.
M. Tech. in Electrical Engineering, Indian Institute of Technology, Madras, 1984.
B.Sc. in Electronics and Communications Engineering, University of Kerala, India, 1978.

Number of years of service on this faculty, including date of original appointment and dates of advancement in rank:

Professor and Endowed Chair: February 2010 - Current.

Other related experience, i.e., teaching, industrial, etc:

Professor, Old Dominion University, Norfolk, VA, May 2007 - January 2010.
Associate Professor, Old Dominion University, Norfolk, VA, August 2000 - May 2007.
Research fellow, Nanyang Technological University, Singapore, July 1998 - July 2000.
Research fellow, National University of Singapore, Singapore, October 1996 - June 1998.
Assistant Professor, University of Kerala, Oct 1984 - June 1990, July 1994 - Sept 1996.

Consulting, patents, etc.

US Patent: Color Image Characterization, Enhancement and Balancing (with Dr. Ming-Jung Seow), April 22, 2008.
US Patent: Visibility Improvement in Color Video Stream (with Dr. Li Tao), September 23, 2008.
US Patent: Optical Pattern Recognition Technique (with Dr. Mohammad Nazrul Islam and Dr. Mohammad A. Karim), (pending).

States in which professionally licensed or certified, if applicable:

None.

Principal publications of the last five years:

Satyanadh Gundimada, Neeharika Gudur, and Vijayan Asari, "Face recognition in multi-sensor images based on a novel modular feature selection technique," *Information Fusion: An International Journal on Multi-Sensor, Multi-Source Information Fusion*, vol. 11, no. 2, pp. 124-132, 2010.
Ming J. Seow and Vijayan Asari, "Towards representation of a perceptual color manifold using associative memory for color constancy," *Journal of Neural Networks*, vol. 22, pp. 91-99, 2009.
Adam Livingston, Ming-Jung Seow, and Vijayan Asari, "A real-time emotion detection system for human computer interaction: A binary decision tree approach," *International Journal of Factory Automation, Robotics and Soft Computing*, no. 1, pp. 156-164, 2009.
Ming J. Seow and Vijayan Asari, "Recurrent neural network as a linear attractor for pattern association," *IEEE Transactions on Neural Networks*, vol. 17, no. 1, pp. 246-250, 2006.

Praveen Sankaran, Rajkiran Gottumukkal, and Vijayan Asari, "An automated feature localization algorithm for a feature specific modular approach for face recognition," *International Journal of Intelligent Systems Technologies and Applications*, vol. 2, no. 4, pp. 329-344, 2007.
Satyanadh Gundimada and Vijayan Asari, "Facial recognition using multi-sensor images based on localized kernel eigen spaces," *IEEE Transactions on Image Processing*, vol. 18, no. 6, pp. 1314-1325, 2009.

Scientific and professional societies of which a member:

Senior Member of the IEEE since 2001, and member of the IEEE Computational Intelligence Society (CIS), IEEE CIS Intelligent Systems Applications Technical Committee, IEEE Computer Society, IEEE Circuits and Systems Society, Association for Computing Machinery (ACM), Society of Photo-Optical Instrumentation Engineers (SPIE), and American Society for Engineering Education (ASEE).

Honors and awards:

Outstanding Teacher Award, Department of Electrical and Computer Engineering, Old Dominion University, April 2002.
Excellence in Teaching Award, Frank Batten College of Engineering and Technology, Old Dominion University, April 2004.
Outstanding Researcher Award, Department of Electrical and Computer Engineering, Old Dominion University, April 2006.
Excellence in Research Award, Frank Batten College of Engineering and Technology, Old Dominion University, April 2006.
Faculty Advising Award, Department of Electrical and Computer Engineering, Old Dominion University, April 2009.

Institutional and professional service in the last five years:

Guest Editor, Journal of Computers, Academic Publisher, 2008 - present
Editorial Board of Journal of Hybrid Computational Research, 2007 - present
Program Committee Member, International Symposium on Neural Networks – ISNN , 2008 - present
Program Committee Member, International Symposium on Visual Computing – ISVC, 2006 - present

Percentage of time available for research or scholarly activities: 50%.

Recent research on Detection of Wounded Individuals on a Battlefield and Comprehensive Wound Healing, under the program *Bioelectrics Research for Casualty Care and Management*, US Army Medical Research and material Command (USAMRMC).
Recent research on Multi-Sensor Electro-Optic Image Based Scene Understanding for Navy Security Automation, Office of Naval Research (ONR), US Department of Defense.

Percentage of time committed to the program: 50%.

Appendix F --- Approval Documentation

a. Nov 7, 2012, CPS Department message indicating the department approval of MS CPE PDP
b. Feb 12, 2013, CAS Graduate Committee minutes showing approval of MS CPE PDP
c. Oct 2, 2013, ECE Department minutes showing faculty approval of the MS CPE
d. Oct 21, 2013, CAS Graduate Committee minutes showing approval of MS CPE
e. Jan 22, 2014, SOE Graduate Studies Committee, showing approval of MS CPE
f. Jan 29, 2014, SOE Academic Leadership Council, showing approval of MS CPE
g. Mar 26, 2014, message from Associate Provost, Graduate Academic Affairs, affirming that the GLC Exec has approved the MS CPE University Proposal
h. Apr 1, 2014, CAS Graduate Committee message indicating the College approval of MS CPE PDP and MS CPE

--------- Forwarded message ----------
From: **Dale Courte** <dcourte1@udayton.edu>
Date: Wed, Nov 7, 2012 at 3:08 PM
Subject: MS-CPE PDP for next meeting
To: Donald Polzella <dpolzella1@udayton.edu>
Cc: Paul Benson <pbenson1@udayton.edu>

Hi Don (cc: Paul).

The attached document contains the Program Development Plan for a Master of Science Program in Computer Engineering. This program will be offered as a partnership between the CPS department in the College and the ECE department in the School of Engineering. The attached document has now been approved by both departments. ECE has forwarded the plan to the SOE Graduate Committe. Please consider this message a request that the plan be discussed and hopefully approved at the next College Graduate Committee meeting.

Dale E. Courte, Ph.D.
Associate Professor and Chair
Computer Science Department
University of Dayton

dcourte1@udayton.edu 937-229-3831

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Donald J. Polzella, Ph.D.
Associate Dean for Faculty Development and Graduate Programs
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College of Arts and Sciences Graduate Committee
Meeting Minutes February 12, 2013

Present: Kevin Church, Dale Courte, Paul Eloe, Linda Hartley, Mark Nielsen, Don Polzella, Bill Portier, Roger Reeb, Andrew Slade, Don Yoder

Guests: Amy Doorley

Excused: Mo Ahoujja, Grant Neeley, Shuang-Ye Wu,

Approval of Minutes of February 12, 2013

- The minutes of the February 12, 2013 Graduate Committee meeting were approved unanimously.

Announcements:

- Masters of Science in Computer Engineering (MSCPE) Program Development Plan

The Masters of Science in Computer Engineering (MSCPE) Program Development Plan as approved by the Graduate Committee via e-mail in December of 2012. This was subsequently approved by the Graduate Executive Council.

It was noted that there is synergy between College of Arts and Sciences Department of Computer Science and the School of Engineering Department of Electrical and Computer Engineering which is what makes this Program Development Plan possible.

New Business:

- MPA 599 Public Administration Capstone – New Course Proposal

A motion was made by Mark Nielsen and seconded by Roger Reeb to approve the new course proposal. The new course proposal for MPA 599 Public Administration Capstone was approved unanimously.

- MPA Change of Program to meet external (NASPAA) accreditation standards.

A motion was made by Don Polzella and seconded by Roger Reeb to approve the proposed change in the MPA Program. The change in the MPA was approved unanimously.

It was noted that this change is being proposed in order to satisfy accreditation requirements.

Old Business:

- Unresolved BPM tuition issues.

The issues identified are:

How much tuition is a student in their fourth year charged for a graduate course which will be applied to the graduate program of study?
Should a fifth year BPM student be given priority for financial aid?

It was noted that this an ongoing issue.

Other:

- The question was asked: Why does fall registration for graduate students wait to begin until July 1.

  Amy Doorley mentioned that she had asked the register's office last year this question and the answer she received was that the School of Education has certain courses that have to been taken in order and they do not have all the information they need until the middle of June to schedule the courses.

  Religious Studies has all their graduate students fill out a paper registration form before they leave for the summer and use this as their workaround.

  The comment was made that this gap in registration could impact retention.

  Dr. Polzella will ask the question of Graduate Academic Affairs.

Adjournment

This meeting was adjourned at 2:45 p.m.

Minutes Submitted By: Colleen Brennan, CAP-OM

ELECTRICAL & COMPUTER ENGINEERING DEPARTMENT

FACULTY MEETING MINUTES

October 2, 2013

11:00 A.M. KL 505

DRAFT

Present: G. Subramanyam (Chair), V. Asari, E. Balster, M. Chatterjee, M. Daniels, E. Guliants, R. Hardie, K. Hirakawa, J. Loomis, D. Moon, R. Ordonez, B. Penno, J. Weber,

Absent: P. Banerjee, T. Taha, N. Striebich

1. Approval of Minutes – ECE Faculty Meeting minutes for August 28, 2014 were approved.

2. Enrollment Details for Fall 2013 – Our current enrollment is 150 MS students, 60 PhD students and 260 undergraduate students

3. Undergraduate Program Committee Updates - ECE 201 is back in the curriculum (3 contact hours + 1 extra hour for problem session = 4 contact hours). Tuesday/Thursday class plus a 50 minute problem session, perhaps on Wednesday.

   Russ Hardie shared the new flow chart. One modification suggested is the prerequisite for ECE 201, MTH 168.

   Discussions continued on: RCL circuits, included in Chapter 9; transients of RCL circuits included in ECE 303; PHY 210L or another lab can be moved to semester 3 so that it will be 17 hours.

   The flowchart for ELE was approved with the amendment of PHY 210L. Russ pointed out that the CAP model for our students is on the backside of the flowchart page.

   A motion was made to approve ECE 201 and ECE 201L by Russ Hardie and seconded by John Weber.

4. Graduate Program Update:

   Eric Balster proposed the MS degree in CPE. John Weber did check to see how many students in the past three years took the four CPE courses that are part of the proposed MS degree. Sixty-eight of 135 graduated students took these courses.

   No changes were made on the previously approved document. Eric Balster made a motion to approve the current proposal and was seconded by Bob Penno. The motion was approved with one faculty abstaining (Monish Chatterjee).

   Raul Ordonez is currently working on developing curriculum for ECE 696, ECE 697 and ECE 698 courses. He is also modifying the graduate application to determine the applicant's area of interest for PhD students. Raul requested help from the faculty to provide input into the admission process.

Due to time constraints the following items were discussed briefly:

5. Lab Committee Task: Faculty input requested by Bob Penno for the upcoming year's lab funds. More Alterra boards (40-50 more) will be necessary.

6. Cyber Security Initiative: Guru updated the department on the emerging cyber security issues. We have a good potential to work with Boeing, and other major companies on this initiative. Boeing folks will be in our department on Friday, October 4th. Guru will bring the visitors to lab tours in the department.

7. New Program with Riverside Research on Advanced Technical Intelligence (ATI): Guru updated the faculty on the Riverside Research's proposed ATI courses. Riverside is willing to offer the courses at no-cost to us. Riverside has signed an NDA with our School of Engineering. The classes can be offered on campus or at their site. Guru asked the graduate program committee to provide potential dates for a meeting with Riverside to discuss the courses.

8. Announcements
    a. Tarig Algady, a PhD student (advisee of Monish Chatterjee) won one of the eight research awards for SPIE Annual Meeting
    b. Potential Research Support up to $3,000 for International Ph.D. Students (Grad School & Dean). A new initiative by the Grad School to support research expenditures up to $3000 per year per PhD student. This initiative is only for students who are self-funded (or funded by their governments). Students under research contracts are not eligible.
    c. Boeing visit 10/4/13 10:00 a.m. – 12:00 noon.
    d. Department Advisory Committee Meeting, November 15, 2013
    e. ABET interim report. Guru asked Russ Hardie and Eric Balster to prepare a table regarding changes that have taken place since the 2010 ABET onsite visit.
    f. Budget update: Guru had discussions with Tony Saliba for changing our budget model. Will touch base with Tony on this.
    g. Textbook order forms will be distributed next week. Please update the forms and return them to Nancy by October 15th.

Minutes taken by Guru Subramanyam and prepared by Nancy Striebich.

Respectfully submitted,

Nancy Striebich

College of Arts and Sciences Graduate Committee
Meeting Minutes
October 21, 2013

Present: Mo Ahoujja, Grant Neeley, Don Polzella, Bill Portier, Roger Reeb, Anna Langhorne, Dale Courte/Jim Buckley, Amit Singh, Shuang-Ye Wu

Guests: Amy Doorley

Excused: Kevin Church, Paul Eloe, Linda Hartley, and Andrew Slade

Approval of Minutes of the April 9, 2013 and September 9, 2013 meetings.

A motion was made by Dr. Polzella to approve both sets of minutes. Both sets of minutes were approved unanimously

Announcements:

- E-Learning Fellows
  - Includes development of hybrid courses
  - The question was raised, are Graduate Assistants included as instructional staff?

- MAGS Distinguished Thesis Award
  - The selected disciplines eligible to apply are Biology and the Humanities programs.

New Business:

- Proposal for MS Program in Computer Engineering The proposal was prepared in partnership with the College and the School of Engineering

  A motion to approve the proposal was made by Dr. Reeb and seconded by Dr. Singh. The proposal was approved unanimously.

- International graduate students, internships and CPT (Curricular Practical Training). CIP has recently loosened their interpretation of the qualifications regarding such internships.

  - International students can do an internship, if it appears on their transcript. An example would be DEV 500.
  - An internship does not have to be required by the program they are part of in order for these students to register.

Old Business:

- GA Contract

  Pease be very careful when writing graduate assistant contracts, paying close attention to the start date and end dates. Students must start working on the start date shown on their contract and must end work on the end date stated in the contract.

- Early Registration

  Let Brad Duncan know when you are ready to register your students.

Other:

- International Students who are in IEP part time

  Grant Neeley mentioned there are some international students on campus who are in IEP part time and are applying to graduate programs.

  These are some of the things that the MPA program is doing:

  - MPA strengthened the TOEFL requirement.
  - MPA suggested that they are willing to work with CIP to use the VSP Program in the spring term to have these students take 12 hours at the undergraduate level. This will show whether they will qualify for the graduate program. CIP thinks this is a great idea.
  - No guarantees will be made to the participating students for being accepted into the graduate program upon completion of this program.
  - It was noted that the TOEFL score is composed of reading and communication skills based on the undergraduate level.
  - Suzanne Richardt in IEP is willing to work with the Program Directors.

Adjournment:

The meeting was adjourned at 1: 15p.m.

Minutes Respectfully Submitted By: Colleen Brennan, CAP-OM

Graduate Studies Committee
January 22, 2014 – 11:00 a.m., KL 205

Present: D. Chase, J. Doty, V. Jain, D. Klosterman, K. Myers, R. Ordonez, A. Sarangan, J. Weber

Excused: P. Eloe, T. Murray

1. **Approval of Minutes** - Minutes from the December 9, 2013 meeting were unanimously approved.

2. **New Course Proposals**
   GSC-13-05, ECE 696 Graduate Seminar
   GSC-13-06, ECE 697 Guided Research Leading to Conference Publication GSC-13-07, ECE 698 Guided Research Leading to Journal Publication

   Dr. Ordonez presented the three courses to the committee and clarified the following details about the courses:
   - ECE 696 is a required course and students will take this course a total of three semesters
   - ECE 697 and ECE 698 are elective courses and will be taken only if the advisor and student deem necessary
   - ECE 697 and ECE 698 would count towards the total coursework hours required for a PHD
   - For ECE 697, the student would be required to finish the paper by the semester end and present it at a conference at the earliest opportunity
   - ECE 698 requires the student submit a final paper to a journal
   - ECE 698 requires more work than ECE 697 and therefore is worth more credit hours
   - If approved, courses will be rolled out during the fall 2014 semester.

   Dr. Doty felt that what is being offered in these courses is really something the dissertation advisor should handle but if the department is willing to take on the administrative load he is not opposed to approving the courses.

   Dr. Weber shared that the courses are mostly being presented to help reduce the course load of the PHD program in order to be competitive with other PHD programs.

   The committee suggested that permission of instructor be added to the prerequisites.

   MOTION: The new course proposal be approved with the prerequisite change and forwarded to the Graduate Leadership Council Executive Committee for approval (Doty/Ordonez). PASSED 8-0.

3. **New Program Proposal**
   GSC-13-09, MS Computer Engineering (MSCPE)
   Dr. Ordonez presented to the committee the proposal for the MS in Computer Engineering. The department of Electrical and Computer Engineering is proposing the addition of this degree program because of the demand for a Computer Engineering degree. If approved by the GSC, the proposal will then move to the Academic Leadership Council for approval. Because some of the content for this degree will be delivered by the Computer Science department, the proposal will also have to be approved by the Computer Science department and the College of Arts and Sciences.

MOTION: The new program proposal be approved and forwarded to the Academic Leadership Council for approval. PASSED 8-0.

4. **Graduate Faculty Status**

   Dr. Sarangan presented Dr. Rita Peterson for appointment to Graduate Faculty Status. The question arose as to whether or not Dr. Peterson is financially supporting any graduate students. Dr. Sarangan indicated that she is financially supporting both Ryan Feaver and Dayen Voratovic. MOTION: Dr. Peterson be approved for Graduate Faculty Status and her application be forwarded to the Graduate Leadership Council Executive Committee for approval. PASSED 8-0.

5. **Discussion Items**

   - Dr. Sarangan presented to the committee the details of a Proposal Writing Workshop that he has offered in the past to EOP students and would like to open up to all School of Engineering graduate students. The committee agreed that it would be a good opportunity for all students. Details will be finalized and the workshop advertised to students.

   - Dr. Weber reminded committee members that forms for various procedures can be found on Porches under the Engineering or Graduate School tabs. These are the most up to date forms and should be used by students and faculty.

The meeting was adjourned.

Respectfully submitted,
Johanna Lantz

School of Engineering
Academic Leadership Council
January 29, 2014

Attendees: R. Alakkad, P. Banerjee, K. Bloemer, C. Browning, D. Chase, M. Elsass, K. Kissock, E. Mykytka, P. Piechota, T. Saliba, S. Schneider, G. Subramanyam, J. Weber
Guests: Laura Bistrek, Program Manager, WEP/MEP; Dr. Richard Chenoweth, Graul Chair, Department of Music, and Aili Bresnahan, Assistant Professor, Department of Philosophy

1. The opening prayer was provided by K. Bloemer.
2. Following introductions, R. Chenoweth and A. Bresnahan presented an overview of the Rites.Rights.Writes (RRW) program, which is a faculty and student engagement program that started in FA13. The program's focus of the current academic year is "Human Rights". For AY 2014/15 the focus will be "Faith and Reason" followed by "It's Your Nature" in AY 2015/16. R. Chenoweth would like to see the SoE more involved in this program. It gives faculty the opportunity to interconnect with other disciplines and offer programs they do not ordinarily use or develop. They suggested a program involving the Flight Simulator be developed. There is very little funding available in the program but T. Saliba said he would support any faculty member who is interested in taking part in this program. He went on to say that engineering education has always centered on well-rounded engineers who can be leaders in both their profession and community. Student groups can also participate in developing an event/project that fits under RRW. R. Chenoweth asks that they contact him. He feels that the marketing and promotion of these events by RRW will enable them to be successful.
3. L. Bistrek gave an overview of the upcoming 2014 Women in Engineering Proactive Network (WEPAN) Conference coming up on June 9-11 in Minneapolis, MN, which she is chairing. She feels that it is imperative that the engineering culture recognize value, as well as engage and leverage difference to support advanced innovation and business performance. There are very high level speakers scheduled for the conference. Registration begins February 1. T. Saliba volunteered to support any faculty member (male or female) who is interested in attending the Conference. He would like to see a representative from each department this great networking event.
   L. Bistrek and B. Hart have been working on new and innovative ways for recruiting, retaining and graduating minorities. They are also looking at how to improve our website to attract more minorities. During the FA13 Explore Engineering, L. Bistrek's team introduced a new program which included a Friday night event for minorities and women along with an overnight stay prior to the Saturday Explore Engineering event. The event received very high marks. She reported that registrations for the SP14 program is already at capacity for women who plan to attend. T. Saliba said the SoE continues to be the flagship on campus for minority recruiting, with 40% of UD minorities enrolled in the SoE. We currently have 21.5% female enrollment in the SoE and our goal is 25%.
4. Classrooms – The three new classrooms in KL are now SoE classrooms. We will have first priority to them in the FA14 semester. After our classes are scheduled, they will be released to Patsy Martin who will schedule the rest of campus in available rooms. T. Saliba thinks we should continue to schedule our other classrooms as we have in the past and schedule the three new classrooms depending on class size. Requests for classroom changes and the scheduling of these three new rooms (KL 407, 445, 446) will be handled by Stephanie McChesney. T. Saliba stated we need to continue to keep our classes at ~40 students. If they go higher than 44-46, they should be split and PT faculty should be hired to teach if necessary. With our past high enrollments, we will be stretched for the next two years of higher level classes. T. Saliba would like to see future first year enrollment remain at 425.
   Classroom 203 – D. Chase asked if a change could be made in KL 203 this summer. Dr. Saliba will ask S. McChesney to look at possible concepts and will return her recommendation to the ALC for a final decision.
   Classrooms 445/446 – The original plan included a movable partition between these two rooms but a permanent wall was built. T. Saliba will look into the costs of a movable wall and bring it back to the

ALC to make a final decision.

5. Approval of January 8, 2014 minutes.
   Action items:
   - Placement Information: Career Services provided updated placement rates of 96% in 2013 for the SoE with 91% response rate. T. Saliba will distribute info to ALC members.
   - T. Saliba has been unable to obtain additional information on Post Tenure Review process and due dates.

   Minutes were approved with no changes.
6. Master of Science in Computer Engineering (MSCPE) – J. Weber reviewed past history of this program proposal. Following submission to the State last summer, several minor changes were recommended. All have been included in a revised document and it is ready to move forward again. C. Browning asked if cyber security was part of the document. G. Subramanyam said it would come in the Communication & Networking segment or that it could be added following final approval. G. Subramanyam also stated that all of the resources (labs, faculty) are already in place. Following a short discussion, the proposal was unanimously approved.
7. KEEN Foundation has invited UD to submit a new proposal for a 3-year grant which would amount to $1.5 to $2M per K. Bloemer. UD is looking at several potential grant focus areas:
   - Faculty Engagement – we hope to broaden the impact of the grant and have 50% of faculty engaged within 3 years. We will look at the Lawrence Technological University model currently in use. This focus would also contact alumni to ask "what they wished they had learned in undergraduate engineering."
   - Co-op and Internship Opportunities – the SoE currently has 30% of their students participating in co-ops and internships. They would consider developing a survey to find out what draws them to these opportunities, how they benefit from them, and how companies can provide more business experience during their co-ops. J. Weber announced that his team had just been awarded an $800k OMII grant, of which 40% is to be used for co-op salaries.
   - Communication Skills – under this focus, they would strive to strengthen communication skills. There would be the possibility of creating a KEEN Center for Excellence in Communication for all engineering students which would provide assessment, feedback and editing for projects, papers, etc. This would be in conjunction with other University resources on campus. This topic is one of high priority to T. Saliba.
   - Expanding Interdisciplinary Studies – the focus of this proposal would seek to improve their partnerships with the School of Business students. Currently only 1 out of 4 projects include a student from the School of Business.

     Conversations will continue with the SoE and School of Business to finalize a proposal to KEEN. On Friday, February 7, KEEN personnel will be on campus to discuss what we are considering.
8. R. Alakkad –
   - Deadline for FA14 Composites is February 14. R. Alakkad asked they be sent to him two days earlier for review.
   - Encouraged chairs to provide sufficient sections in EGR 201/202/203 to fulfill our needs. He will review and try to provide an appropriate number of seats needed in each course.
   - Graduation Check Lists - January 17 was the deadline for SP14 graduation. He has received 40/45 out of 187 to date. He will advise each department on how many they have not yet submitted.
   - Change of Grade – this process is now done online under Workload. Simply go to the roster from the semester that the course was taken and change the grade. Once they submit the change, it will be sent to R. Alakkad for approval.
   - FE Review – Following a discussion by a team consisting of R. Alakkad, D. Chase, and P. Piechota, it was determined that no review course would be offered SP14. D. Chase said his faculty will be providing some review of some courses for their students; he will notify the departments when they will take place. R. Alakkad suggested the students also check out other review courses at other universities and Kaplan.

- Engineering GPA – currently a report with student GPA is being created in COGNOS. Once ready, he will notify Chairs.
- Transcript Evaluations – The transcript evaluation requests are being sent to the departments by Registration. He asked that these reviews be done in a timely manner and forwarded to him for final review.

9. Announcements
   - Digital Measures – T. Saliba reported that K. Updyke uses the information from Digital Measures to prepare her "Research and Scholarship" document. He asked that all faculty members continue to complete the Digital Measures.
   - T. Saliba reminded members that if active retirees are being hired to teach, they must be approved by the Provost Office prior to PAF being completed. The approvals can be requested on an annual basis.
   - Videoconferencing – T. Saliba said there was a need to have the capability of videoconferencing in Kettering Labs. S. Segalewitz evaluated equipment needs, with KL 205 and KL 141 as possible locations. It was decided that KL 205 would be the best option and we would use the Lifesize System. T. Saliba will also update current equipment in KL 141 that is in need of replacement.
   - The cost of equipping KL 205 for videoconferencing will be approximately $20k; M. Riggins will oversee the installation. The equipment should be installed within 30 days.
   - Call for Proposals: "Domestic Minority Student Recruitment" and "New Programs". Currently R. Alakkad, M. Cofield and L. Bistrek are working on a proposal for minority student recruiting. T. Saliba encouraged anyone else who has something to coordinate it with R. Alakkad. For New Programs, T. Saliba suggested proposals be prepared for ISE and Automation & Control. J. Weber will also submit a proposal for MSCPE.
   - Unit Review Initiatives – an email was previously sent to members. The monetary requests must be for use during AY14-15 and be in line with our current initiatives. They must be submitted to T. Saliba by February 10 for review prior to submission to the Provost Office by February 21.
   - ABET Assessment Software – G. Subramanyam has obtained information on this new software. He will research it more thoroughly and bring back to the ALC.
   - Any departmental donations over $1,000 will be forwarded to the departments. All donations checks received must be forwarded to Ann Rush in Advancement. The account where it is to be deposited should be noted on the front of the check. This ensures the recording of donations with a receipt and a thank you letter being sent to each donor.

Respectfully submitted,

Jill Morgan

Action Items:

- Classroom 203 – T. Saliba to discuss possible concepts to make KL 203 more conducive to teaching classes and will bring ideas back to the ALC.
- Classroom 445/446 – T. Saliba will investigate costs of changing permanent wall between rooms to a movable wall and will bring back to ALC.
- Updated Placement Information – T. Saliba will distribute to ALC members.
- Post Tenure Review – T. Saliba will obtain additional information on timeline and process and will distribute to ALC members.
- Composites must be submitted to R. Alakkad prior to University 2/14/14 deadline for review.
- R. Alakkad will provide to departments the number of seats needed in FA14 for EGR 201/202/203.

- Graduation Checklists – R. Alakkad will advise departments of number not yet submitted to his office. Checklists were due January 17.
- Student GPA reports being created; R. Alakkad will forward to departmental chairs when available.
- Evaluations and Digital Measures – Evaluations are due to Dean's office by mid-February; Digital Measures should be submitted online at the same time.
- Initiative Requests – due to T. Saliba by 2/10/14 and to the Provost Office 2/21/14.
- G. Subramanyam will obtain additional information on new ABET assessment software.

UNIVERSITY of DAYTON

John Weber <jweber1@udayton.edu>

GLC Exec Approval of MS Computer Engineering and MEd Leadership for Educational Systems

1 message

Paul Vanderburgh <pvanderburgh1@udayton.edu>
Wed, Mar 26, 2014 at 10:27 AM
To: Carolyn Phelps <cphelps1@udayton.edu>
Cc: John G Weber <jweber1@udayton.edu>, Barbara De Luca <bdeluca1@udayton.edu>

Carolyn

Hope all is well in your world. I'm just letting you know that GLC Exec approved the full proposals for MS Computer Engineering and MEd in Leadership for Educational Systems at our last meeting (March 14, 2014).

If you haven't already, you should be hearing from John Weber and Barbara De Luca to have these two proposals reviewed by ECAS to determine if they should receive full Senate approval (per our brand new Senate document 2014-04: Actions pertaining to degree programs and academic departments). Thanks much,

Paul

Paul M. Vanderburgh, EdD
Associate Provost, Graduate Academic Affairs
Professor, Health & Sport Science
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UNIVERSITY of DAYTON

MS in Computer Engineering

1 message

Donald Polzella <dpolzella1@udayton.edu>
Tue, Apr 1, 2014 at 10:06 AM
To: John Weber <jweber1@udayton.edu>
Cc: Mehdi Zargham <mzargham1@udayton.edu>, Paul Benson

<pbenson1@udayton.edu> Dear John,

The Graduate Committee of the College of Arts and Sciences voted to approve the PDP for the MS in Computer Engineering on March 12, 2013 and the full proposal on October 21, 2013. The relevant documents are attached.

Best, Don

--
Donald J. Polzella, Ph.D.
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4 attachments

3-12-13 Final Minutes.pdf
296K

10-21-13 Draft Minutes.docx
16K

CPS endorsement of the MS in Computer Engineering.docx
13K

MS-CPE PDP Voting Results.docx
17K