The Center for Advanced Computer Studies

MS/PhD Programs in Computer Science and Computer Engineering

Spring 2011
The Center for Advanced Computer Studies (CACS) at the University of Louisiana at Lafayette (UL Lafayette) is one of the leading research-oriented departments of computer science and engineering in the nation. The primary missions of the Center are to conduct research and provide graduate-level education. The fifteen faculty members in the center have a number of active research grants from such organizations as National Science Foundation, NASA, National Security Agency, Office of Naval Research, Department of Energy, and Department of Defense. Approximately two hundred students are enrolled in the graduate programs.

The Center for Advanced Computer Studies operates a wide variety of computer equipment. Some of this equipment is for general use of the students, some is for faculty and staff use, and some is housed in the Center’s research laboratories (highlighted below). The Center's primary computing platforms are Unix workstations and servers. The Center has a number of mixed based (Sun and Intel) workstations and servers running various versions of Linux, Solaris, and Microsoft Windows and Apple operating systems. In total, the Center operates about 300 workstations and laptops and about 35 servers. Numerous peripherals are also available such as color and monochrome laser printers, large format color plotters, scanners, etc. The Center also operates a 96-Node Linux cluster which is used by faculty, staff, students and third parties involved in collaborative research with the Center.

The Center operates an extensive ethernet network with both gigabit ethernet and 100Mb ethernet services. All of the Center’s computers and most of the peripherals are connected to the department’s network. The Center also maintains a wireless network with access for students, faculty, staff and visitors to the department. The Center’s network is in-turn connected to the University’s gigabit ethernet campus-area-network. The University maintains connections to the commodity Internet via Louisiana’s LaNet network as well as a connection to the research-oriented Internet2 network. The university is connected to the Louisiana Optical Network Initiative (LONI).
Research Laboratories

- Bioinformatics
- CajunBot
- Computer Architecture and Networking (CAN)
- Entertainment Computing/Video Game Design
- FPGA and Reconfigurable Computing
- Integrated Wireless Information Networks (iWIN)
- Internet Computing (LINC)
- Micro/Nanoelectronic Embedded Computing
- Neurocomputing and Brain Simulation
- Software Systems
- Virtual Reality
- VLSI and SoC
- Wireless Systems and Performance Engineering

CACS also has a close working relationship with UL NASA Regional Application Center (RAC), The Center for Business and Information Technologies (CBIT), National Wetlands Research Center (NWRC), New Iberia Research Center and Louisiana Immersive Technologies Enterprise (LITE). These centers focus on economic development and technology transfer. CACS works with these centers to broaden the economic diversity of the state and region.

The Center has a distinguished lecture and colloquia series that attracts a number of internationally known researchers in the field. Active student chapters of the Association for Computing Machinery (ACM), the IEEE Computer Society, and Upsilon Pi Epsilon provide professional and social events to enrich the educational experience.

Founded in 1898, UL Lafayette is one of the largest universities in Louisiana. The current total enrollment is over 16,000 students.

**Degree Programs**

The Center for Advanced Computer Studies offers four graduate degrees: (1) Doctor of Philosophy in Computer Engineering (PhDCE); (2) Doctor of Philosophy in Computer Science (PhDCS); (3) Master of Science in Computer Engineering (MSCE); and (4) Master of Science in Computer Science (MSCS).
Admission Requirements

Admission into each of the graduate programs is based upon evaluation by the Graduate Admissions Committee. Factors considered are GRE scores (quantitative and verbal), previous academic achievements as measured by grades on all college-level work, and potential based upon the evaluations of at least three qualified persons who are familiar with the applicant’s previous academic accomplishments and likelihood of success in a graduate program. Competition for admission into the degree programs is intense. Consequently, only students with an excellent record should apply.

Students seeking admission to the computer science graduate programs preferably should have undergraduate degrees in computer science. Students seeking admission to the computer engineering graduate programs preferably should have undergraduate degrees in electrical or computer engineering. Students with undergraduate degrees in other fields may be admitted, but will be required to take courses to acquire the necessary background.

Degree Program Prerequisites

Each of the degree programs has certain prerequisites that must be satisfied prior to enrolling in graduate courses. A grade of A or B must have been earned in each prerequisite course taken prior to enrolling in one of the graduate degree programs, or the prerequisite course may need to be repeated.

Prerequisites may be taken at UL Lafayette subsequent to admission to a degree program. Students must earn a grade of A or B in all prerequisite courses taken at UL Lafayette. The UL Lafayette course numbers for the various prerequisites appear in parentheses in the remainder of this section.

For all degree programs, the prerequisites include elementary programming and knowledge of at least one well-structured, procedure-oriented language such as Ada, Pascal, or C++ (CMPS 150).

The mathematics prerequisites are: (1) for the MSCS, at least two courses in college-level differential and integral calculus (MATH 270, 301); and (2) for the PhDCS, PhDCE, and MSCE, differential and integral calculus through differential equations (MATH 270, 301, 302, 350). The MSCS and PhDCS programs require one course in applied statistics and probability (STAT 427).
All degree programs require knowledge of software design and data structures (CMPS 260-261), assembly language programming (CMPS 351), and discrete mathematics and logic design (CMPS 341).

Students entering the PhDCS program must have studied elementary concepts of computer architecture (CMPS 430), programming languages (CMPS 450), operating systems (CMPS 455), and database management systems (CMPS 460).

For the MSCE and PhDCE programs, students must have studied elementary digital logic, microprocessor hardware and software concepts (EECE 240, 342, and 340). In addition, students entering the PhDCE program must have studied basic computer architecture (CMPS 430) and operating systems (CMPS 455).

All international students for whom English is not their native tongue are required to take an English proficiency test on the UL Lafayette campus just prior to their first registration. Depending upon the results of this test, they may be required to satisfactorily complete one or two remedial courses in written and/or spoken English. The Graduate School requires that all students (U.S. or international) intending to write a thesis or dissertation pass a language examination in written English. All such students should consult the Graduate School office for procedures.

Since prerequisite courses form a foundation for graduate courses, students are required to schedule prerequisites in preference to other courses, and complete them as soon as offerings permit.

Degree Requirements

The requirements for the graduate programs offered by the Center are outlined in the sections that follow. A course requirement can be satisfied by completing it at UL Lafayette, transferring it from another university or having the course waived. Certain restrictions are placed on whether particular courses (that have been satisfactorily completed) may be applied towards a degree.

The following rules apply to all graduate degrees.

1. A minimum grade of B must be earned in all courses waived, transferred, required, or applied towards a degree.
2. A minimum GPA of 3.0 must be maintained during all semesters at UL Lafayette, including semesters when prerequisites are taken.
3. Transfer courses must be approved by the Graduate Coordinators and by the Graduate School. The Graduate School requires that all transfer credits be earned in residence as a graduate student in an accredited American institution which regularly grants the Master’s or PhD degree. A signature in support of the transfer from an appropriate CACS faculty member must accompany the student’s petition.  
4. Courses taken in other departments (at UL Lafayette) should be pre-approved by the Graduate Coordinator or Director to be counted towards a degree.  
5. Waived courses must be approved in writing by the appropriate faculty member. Waived courses may satisfy requirements, but their hours are not applied towards a graduate degree.  
6. Courses taken by a student while an undergraduate cannot be applied towards a graduate degree. Such courses may be waived or repeated (e.g., to improve the grade), but they never apply towards the hour requirements of any graduate degree.  
7. Thesis and dissertation defense exams may be conducted during the fall, spring or summer semesters.  
8. Students must enroll in Graduate Seminar (CMPS/EECE 595) during each regular semester until credit has been earned for the course three times for MS students and five times for PhD students. The credits earned in CMPS/EECE 595 are not applied towards any graduate degree.  

University regulations, as recorded in the UL Lafayette Graduate Bulletin, also apply. A student is subject to the requirements in effect at the time of first registration in a particular graduate program. A student may petition the CACS Appeals Committee for an exception to any of these regulations.

**PhD Degree Requirements**

The following requirements apply to the PhD in both computer science and computer engineering:

1. At least 9 hours of EECE/CMPS 6x9 research courses are required.  
2. At most 9 hours of graduate work in a field other than EECE or CMPS may be applied to the PhD. All such outside courses must be approved in writing by the Graduate Coordinator or the student’s dissertation advisor.
3. The remaining courses must be chosen from EECE/CMPS 500/600 level courses. (If prerequisites at the 400G level are required, they are considered for the record as applying to the PhD, but hours required for the degree are increased for each 400G course taken, so that the number of courses required at the 500/600 level remains unchanged.)

4. The student should apply for PhD candidacy after: (1) fulfilling the Breadth Requirement, and (2) passing a written comprehensive exam. The Breadth Requirement is satisfied by completing six 500-level courses in CACS with GPA of at least 3.5. (For complete details, see the PhD Comprehensive brochure.) The written comprehensive exam is given during the regular registration period of the fall and spring semesters each year, and two areas must be passed, in a maximum of two attempts, in three consecutive offerings. The syllabus, which is updated during each September, must be consulted for up-to-date regulations. The syllabus and past exams are available from the CACS Library.

5. The oral PhD prospectus exam must be passed in a maximum of two attempts. The prospectus exam can be scheduled when the written prospectus has been approved by the Dissertation Committee and can be scheduled no sooner than two weeks after such approval. The Dissertation Committee will consist of a minimum of 3 members; the majority must be regular CACS/CMPS faculty members. The prospectus exam is conducted by the student’s Dissertation Committee, plus one additional examiner from the graduate faculty of the Center chosen in consultation with the student and the Dissertation Committee chairperson. If the Dissertation/Thesis Director is not a regular CACS/CMPS faculty member, a Co-Director from CACS shall be designated.

6. The oral PhD Dissertation Defense must be passed in a maximum of two attempts.

7. The exams must be completed in sequence: (1) PhD comprehensive exam; (2) PhD prospectus exam; and (3) PhD dissertation defense.

8. Exactly 24 hours of EECE/CMPS 699 (dissertation credit) must be applied towards the degree.

9. At least seventy-two semester hours of graduate credit must be applied towards the degree, which includes the 24 hours of EECE/CMPS 699.

10. All degree requirements must be completed within seven years of enrolling in the first graduate-level course at the Center.
11. At least one academic year must be completed in full-time residence at the Center.
12. All students admitted to the doctoral program will be assigned a faculty mentor, who will advise the student on choice of courses, and monitor the student’s progress until a research area and advisor is chosen.

**PhDCE Degree Requirements**

1. EECE 530 is required.
2. The Breadth Requirement is satisfied by completing, with GPA of at least 3.5: (1) two 500-level courses in hardware, (2) one 500-level course in software, (3) one 500-level course in theory, (4) one other 500-level course in areas not listed in (1)-(3), and (5) any accepted 500-level course. These courses cannot be transferred or waived. For courses accepted for parts of the Breadth Requirement, consult a current listing available from the CACS office.
3. The written comprehensive exam consists of two areas chosen from the following: (1) computer architecture, (2) operating systems, (3) algorithms and theory of computation, (4) database and information systems, (5) programming languages and compilers, (6) artificial intelligence and cognitive science, (7) software engineering, (8) computer design and implementation, and VLSI, (9) computer communications and networks, (10) linear systems and signal processing, (11) logic design and fault tolerance, (12) computer graphics, with at least one in areas (1), (8), (10), or (11).

**PhDCS Degree Requirements**

1. CMPS 500 is required.
2. The Breadth Requirement is satisfied by completing, with GPA of at least 3.5: (1) one 500-level course in hardware, (2) two 500-level courses in software, (3) one 500-level course in theory, (4) one other 500-level course in areas not listed (1)-(3), and (5) any accepted 500-level course. These courses cannot be transferred or waived. For courses accepted for parts of the Breadth Requirement, consult a current listing available from the CACS office.
3. The written comprehensive exam consists of two areas chosen from the following: (1) computer architecture, (2) operating systems, (3) algorithms and theory of computation, (4) database and
information systems, (5) programming languages and compilers, (6) artificial intelligence and cognitive science, (7) software engineering, (8) computer design and implementation and VLSI, (9) computer communications and networking (10) linear systems and signal processing, (11) logic design and fault tolerance, (12) computer graphics, with at least one in areas (1), (2), (3), (4), (5), (6), or (7).

MS Degree Requirements

The following regulations apply to the MS in both computer science and computer engineering.

1. At least 33 hours for the non-thesis option and 30 hours for the thesis option of EECE/CMPS graduate credit must be applied towards the degree.

2. At most 6 hours of (a) transfer credit from another university, or (b) courses at UL Lafayette in a field other than EECE/CMPS, may be applied to the degree. Certain courses from other departments of UL Lafayette are pre-approved. (A list is available from the Graduate Coordinator.) All others require written approval of the Graduate Coordinator. (Note that these hours do not satisfy requirement 4 below.)

3. At most 6 hours (for the non-thesis option) and 9 hours (for the thesis option) of EECE/CMPS 6x9 research courses may be applied towards the degree.

4. At least 18 hours for the thesis option and 21 hours for the non-thesis option of EECE/CMPS 500/600 level lecture courses (excluding EECE/CMPS 590, 599 and 6x9) must be applied towards the degree. (Two CMPS 598s may be applied to this requirement.)

5. All degree requirements must be completed within five years of enrolling in the first graduate-level course at the Center.

6. Students admitted to the PhD program may satisfy these requirements, and apply for and receive the MS degree on the way to the PhD, unless this is prohibited by an agreement between the student and the Center or the University. Courses applied to the MS may also be applied to the PhD if otherwise acceptable.

7. Students seeking a second Master’s degree should carefully consult applicable Graduate School regulations. No more than nine hours credit for one Master’s degree may be applied to another.
8. For the thesis option, the rules for the thesis committee and oral defense are the same as for a dissertation.

**MSCE Degree Requirements**

1. EECE 455G, 530, and either 583 or 585 are required.
2. For the thesis option, exactly 6 hours of EECE 599 must be applied towards the degree. For the non-thesis option, exactly 6 hours of EECE 590 must be applied towards the degree.

**MSCS Degree Requirements**

1. CMPS 500 is required.
2. CMPS 430G, 450G, 455G, and 460G are required. This requirement may be satisfied by having passed the course in question as a UL Lafayette undergraduate with a grade of B or better, not more than six years prior to graduate enrollment, or by similar performance in a graduate or undergraduate course at another institution, approved in writing by a CACS faculty member designated for the course. If the same faculty member so advises, this requirement may also be satisfied by completion of CMPS 530, 550, 555 and 561 or 562, in place of 430, 450, 455, and 460, respectively. At most 6 hours of graduate credit earned for CMPS 430G, 450G, 455G, and 460G may be applied towards the degree. For the thesis option, exactly 6 hours of CMPS 599 must be applied towards the degree. For the non-thesis option, 3 hours of CMPS 590 may be applied to the degree. For students supported on CACS assistantship or fellowship, 599 or 590 is required.

**Appeals**

Any student placed on suspension or made ineligible to continue due to low grades or other reasons may appeal to the CACS Appeals Committee, by a letter explaining the student’s difficulties and proposing remedies, accompanied by recommendation letters from instructors. Students made ineligible for assistantship may appeal similarly to the Financial Support Committee. Appeals for regulations of the Graduate School must be made to the Graduate Appeals Committee of the University.
Applications

An application consists of: (1) an application form for graduate admission; (2) official copies of GRE scores; (3) an application fee ($25 for US citizens, permanent residents and refugees and $30 for international students); (4) two official transcripts from all universities attended; (5) for non-native English speaking applicants, official TOEFL scores; (6) three letters of recommendation; (7) proof of immunization; and (8) financial statement for international applicants. Note that all these elements of the application are required by the Graduate School, and only the Dean of the Graduate School can allow modifications or exceptions. All application materials must be submitted to the Graduate School, and received by: (1) 1 April for the summer session, (2) 1 May for the fall semester, and (3) 15 November for the spring semester. (Note that all applications and supporting material must be sent to the Graduate School, not to CACS.)

All applications are evaluated first by the Graduate School, then, if acceptable, by CACS. A four year Bachelor’s degree in Computer Science, Computer or Electrical Engineering, or a related area, with GPA greater than or equal to 2.75, (or First Class Honors from universities using that system) is expected. The GRE (General Test) is required of all applicants. GRE-V not less than 380, and GRE-Q not less than 600 are expected. At least three letters of recommendation from professors in Computer Science or Engineering or related areas, or others well qualified to evaluate the applicant’s professional abilities are required. A personal statement of purpose from the applicant is also expected.

Fellowships

A number of Fellowships valued at up to $24,000 per year, plus tuition and most fees are available for entering PhD students with a superior academic record and exceptional GRE scores. These PhD Fellowships provide up to four years of support. Fellowships valued at up to $9,500 per year, plus tuition and most fees, are available for entering MS students with superior academic records and strong GRE scores. All Fellowship application materials must be received by 15 February for consideration by the Graduate School.
Assistantships

The Center normally has 70-90 assistantships for the support of graduate students in Computer Science and Computer Engineering. However there are many well qualified applicants for each open position, so that competition is intense, and no student can be assured of a position before awards are made.

Deadlines

The deadline for applications is 1 March for the fall semester and 1 November for the spring semester. All supporting material (transcripts, test scores, letters) must be received by these dates, not just the application form. Late applicants will be considered at a lower priority than others, if at all. Applicants will be notified of their success in 4-6 weeks following the deadline. All available assistantships will be awarded at that time, and a waiting list will be formed, from which additional vacancies may be filled. Awards are made for a semester, but are continued to succeeding semesters if performance is satisfactory.

An offer of an assistantship is accompanied by an acceptance form and a deadline by which the assistantship must be accepted and the signed acceptance form returned. If the form is not received in the office of the Center by this deadline, then the offer may be withdrawn and the position offered to another candidate. Signing of the acceptance form is a binding commitment to the Center and the University to fulfill the duties of the assistantship, and not to accept any offer of another institution without release from the University.

The largest number of new awards is made for the fall semester, though some are usually made for spring as well. There are no assistantships for summer session, though tuition waivers and instructorships are offered to a few well-qualified continuing assistants.

Award Criteria

Awards are given to those students judged most likely to succeed in graduate study and who meet the work needs of the Center. Factors on which awards are based include:

- UL Lafayette graduate hours and GPA (if a continuing student),
- progress toward UL Lafayette degree (if a continuing student),
- MS GPA (if any) and undergraduate GPA,
GRE scores,
• TOEFL and other evidence of facility in English (for international students),
• recommendations (those from UL Lafayette faculty preferred),
• teaching and research experience.

No one of these factors is considered to the exclusion of others, and there is no predefined formula for combining the factors. Applicants are evaluated initially by the Admissions Committee, and final choices are made by the Director, advised by the Financial Support Committee.

Preference is given to students with:
• a degree or significant coursework in Computer Science or Engineering,
  - from UL Lafayette,
  - from a US or Canadian university,
• an advanced degree,
• acceptance into the PhD program,
• teaching or research experience, especially at a US institution.

Students selected for certain positions may also be required to pass interviews with prospective supervisors.

Research Assistantships
Research appointments with individual faculty members are typically filled by recommendation of the faculty member of students who have previously studied under that faculty member. Thus these awards are seldom made to new students, and separate applications from new students to individual faculty members are rarely useful.

Reapplication
Students admitted to graduate study, but not offered an assistantship, are encouraged to reapply for subsequent semesters. This must be done in writing, by the same deadlines as for a new application. A new application form is not mandatory, but may be advisable if the student has additional qualifying information to report. It is especially valuable to obtain recommendation letters from those UL Lafayette faculty members who have observed the student’s work.
Conditions

Assistantship awards are made with the expectation of duties to be performed (usually a work obligation of about 20 hours per week). The student is expected to carry and to complete exactly nine hours of courses applicable to the degree per semester, to maintain a GPA of at least 3.5, and to make satisfactory progress towards the degree. Assistants (and all graduate students) are also required to enroll in CMPS 595, Graduate Seminar, which requires attendance at Center colloquia, but does not carry credit toward the degree. No student on assistantship may hold any other employment without consent of the Center and the Dean of the Graduate School.

Graduate assistants supported by the Center for at least two semesters, and pursuing the Master’s degree, are required to apply 3 or more hours of CMPS/EECE 590 or 599 to the Master’s degree. Research assistants supported by a faculty member may be required to register for courses or projects relevant to their research duties.

Assistantships may be revoked at any time for unsatisfactory performance in duties or academic work. If performance and progress are good, the assistantship may be renewed without reapplication, up to a maximum of eight regular semesters for PhD students, and three regular semesters for MS students. Complaints of inadequate work from the student’s supervisor in assistantship duties, or academic deficiencies, such as a grade below “B” in any course, graduate GPA less than 3.5, unjustified dropping or incompletion of courses, or excessive delay in completing the degree, are cause for review and possible loss of the assistantship. Students supported on assistantship are expected to complete the degree as quickly as possible and to apply for the degree in the semester that requirements are expected to be satisfied.

No student on assistantship may withdraw from or take an incomplete in any course without submitting a written statement of reasons to the Director of the Center, endorsed by the course instructor, and securing permission of the Director.

PhD students holding an assistantship are expected to attempt and pass the comprehensive examination promptly, normally within two years of the beginning of graduate study at the Center.
Internship and Practical Training

Graduate students in the Center may receive appointments to Internship and Practical Training positions in business and industry during the summer sessions and at other times. International students must be approved for Curriculum Practical Training (CPT) or Post-completion Practical Training (OPT). It is the student’s responsibility to arrange for the timely submission of these documents:

1. offer letter from the prospective employer;
2. written approval of the International Office and the Graduate School;
3. written approval of the faculty member who will be advising the student in CPT projects; and
4. written approval of the Graduate Coordinator or Department Head.

This must be completed before the end of the previous semester.

CACS Faculty

Professors

Magdy A. Bayoumi, Director of CACS; Department Head, CMPS; PhD, Univ of Windsor. VLSI design, image and video signal processing, parallel processing, neural networks, wide-band and multimedia network architectures.

Chee-Hung Henry Chu, PhD, Purdue Univ. Computer vision, signal and image processing, pattern recognition.

Arun Lakhotia, PhD, Case Western Reserve Univ. Computer security, malware analysis, robotics, autonomous ground vehicles.

Vijay V. Raghavan, PhD, Univ of Alberta. Information retrieval and extraction, conceptual categorization of text/images, knowledge discovery in databases, integration of unstructured, semi-structured and structured data, bioinformatics.

Nian-Feng Tzeng, PhD, Univ of Illinois at Urbana-Champaign. Networked and distributed computer systems, wireless and sensor networks.
Associate Professors
Christoph Borst, PhD, Texas A&M. Virtual reality, computer graphics, visualization.
Kemal Efe, PhD, Univ of Leeds. Parallel and distributed systems, Internet computing, search engines, information retrieval.
Gui-Liang Feng, PhD, Lehigh Univ. Error-correcting codes, data compression, fault-tolerant, cryptography, network coding, wireless network coding.
Rasiah Loganantharaj, PhD, Colorado State Univ. Bioinformatics including gene regulation, functional annotations, microarray analysis, mining for interesting patterns from genomic sequences and databases.
Anthony S. Maida, PhD, SUNY at Buffalo. Neurocomputing, artificial intelligence, cognitive science.
Dmitri Perkins, PhD, Michigan State. Wireless networks, mobile systems.
Hongyi Wu, PhD, SUNY at Buffalo. Computer networks.
Danella Zhao, PhD, SUNY at Buffalo. VLSI testing, embedded systems, wireless.

Assistant Professors
Miao Jin, PhD, Stony Brook Univ. Computer graphics, geometric modeling, medical imaging, computer vision, visualization, computational conformal geometry.
Dirk Reiners, PhD, Dr.-Ing., Technical Univ. of Darmstadt. Software systems for interactive 3D graphics, complex problem visualization, virtual reality, high quality displays.

CACS Research Faculty
Ryan Benton, PhD, UL Lafayette. Internet and Grid Computing.
Suresh Golconda, PhD, UL Lafayette. Robotics.
Computer Science Department Faculty

Frank Ducrest, MS, USL. Software development for mobile devices applications.

Nona Etheredge, MS, California Polytechnic State. Software development.

James N. Etheredge, PhD, USL. Expert systems, neutral networks, computer networking.

Ramesh Kolluru, PhD, USL. Intelligent machines, robotics, multimedia databases, computer integrated manufacturing.

Ashok Kumar, PhD, UL Lafayette. Sensor Networks, Hardware Prototyping, Low Power Systems.

Mark G. Radle, PhD, USL. Artificial intelligence, affective computing.

Andrew Walenstein, PhD, Simon Fraser Univ. Software Security.

Electrical & Computer Engineering Department Faculty

Carolina Cruz-Neira, PhD, Univ. of Illinois at Chicago. Visualization.

Afef Fekih, PhD, National Engineering School of Tunis. Control theory and applications, nonlinear and robust control, dynamic system modeling.

Robert R. Henry, PhD, New Mexico State Univ. Wireless systems call admission, local area network multi-access methods and wireless LANs.

Renuka P. Jindal, PhD, Univ. of Minnesota. Fundamental studies of noise behavior of scaled sub-micrometer MDS devices.

Mohammad Madani, PhD, LSU. Microelectronic circuit and device processing, mixed signal electronic circuits design.

Zhongqi Pan, PhD, Univ. of Southern California. Optical fiber communications systems.

Michael Pratt, PhD, UL Lafayette. Digital signal and image processing, computer and information system security.

George Thomas, PhD, IIT. High performance packet switches, new dynamic beam-shaping for wireless packet networks.
Graduate Courses

All graduate courses may be applied towards either Computer Engineering or Computer Science degrees except for those that are specifically identified as being in Computer Engineering (EECE) or Computer Science (CMPS).

411G System Simulation
415G Computer Graphics
420G Artificial Intelligence
425G Introduction to Robotics
427G Video Game Design & Development (CMPS)
430G Computer Architecture
430G Digital Signal Processing (EECE)
434G Data Communications (EECE)
435G Wireless Communications (EECE)
440G Theory of Computation (CMPS)
450G Programming Languages (CMPS)
451G Compiler Construction (CMPS)
452G User Interface Design
453G Introduction to Software Methodology
455G Operating Systems
458G Communications Engineering II (EECE)
460G Computer Information Systems (CMPS)
461G Control Systems (EECE)
466G Communications Networks (EECE)
480G Computer Aided Engineering (EECE)
481G Intelligent Robots: The Integration of Microcomputers and Robotic Technology (EECE)
499G Special Topics in Computer Science
500 Design and Analysis of Algorithms
502 Computational Basis of Bioinformatics
503 Computational Genomics
506 System Theory
507 Digital Signal Processing
508 Image Processing
509 Pattern Recognition
512 Network Security
513 Computer Communications and Networks
514 Error Control Codes for Computer Systems
515 Advanced Computer Graphics
516 Cryptography and Data Security
517 Digital Techniques in Telecommunications
518 Principles Lossless & Lossy Data Compression
520 Principles of Artificial Intelligence
Automated Reasoning
Automonomous-agent Architectures (EECE)
The Computational Basis of Intelligence
Computer Control Based Robotics and Automation Systems
Intelligent Machines: Theory, Design & Applications
Cognitive Science I
Cognitive Science II
Principles of Computer Architecture
Parallel Processing Organization
Distributed Computing Systems
Modeling and Performance Evaluation of Computer Systems
Entertainment Computing (CMPS)
Principles of the Theory of Computation
Automata Theory
Formal Languages
Prin. of Programming Languages (CMPS)
Compiler Design
Software Methodology
Operating Systems Theory
Software Requirements and Specifications
Software Testing and Verification
Information Storage and Retrieval
Data Base Management Systems
Information Retrieval Theory
Adv Database Systems
Data Mining
Silicon Compilation
Combinatorics and Geometric Algorithms
Analog VLSI Design
Wireless Computing Systems (CMPS)
Mobile Computing and Applications (CMPS)
Logic Design and Switching Theory
Computer Arithmetic
Computer Design and Implementation
Fault Diagnosis of Digital Systems
VLSI Design
VLSI Architecture
VLSI Fabrication Principles
Neural Networks
Introduction to Fuzzy Logic Systems
Special Project
Graduate Seminar
Special Topics
Thesis Research and Thesis
608  Theory and Paradigms in Machine Vision
609  Adv. Topics in Machine Vision
613  Adv. Computer Communications & Networks
614  Fault-Tolerant Computing
615  Virtual Reality and Visualization
619  Adv. Topics in Computer Science/Engineering
621  Adv. Topics in Automated Reasoning
629  Adv. Topics in Artificial Intelligence
631  Adv. Parallel Processing
639  Adv. Topics in Computer Architecture
642  Adv. Formal Languages
645  Models of Software Information Content
649  Adv. Topics in the Theory of Computation
650  Language Processing for Distributed Systems
653  Adv. Software Methodology
655  Adv. Operating Systems
659  Adv. Topics in Computer Software Systems
661  Database Theory
662  Info. Systems for Minicomputers and Networks
669  Adv. Topics in Computer Information Systems
679  Adv. Topics in CAD/CAM
689  Adv. Topics in Hardware Design
699  Dissertation Research and Dissertation
899  Examinations Only

For additional information, please contact:

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