

Computer Science

College of Engineering

The Department of Computer Science offers programs of study leading to the Master of Science in Computer Science and Doctor of Philosophy degrees. Admission to these programs is highly competitive and based upon academic record, GRE scores, and letters of recommendation. It is strongly suggested that applicants present evidence of mathematical maturity as well as competence in computer science. Full details of the requirements for degree programs are available from the department upon request.

Since very few specific courses are required for the graduate degree programs, all candidates in the M.S. program are expected to demonstrate proficiency in the fundamental areas of computer science by taking four core courses in specific areas.

Both thesis (Plan A) and non-thesis (Plan B) options are available in the program leading to the Master of Science degree. A project is required of non-thesis candidates. No language requirement (other than proficiency in English) is mandated.

The doctoral program in Computer Science is a research degree granted primarily on the demonstration of substantial research achievement. To be admitted to candidacy for this degree, candidates must satisfy the requirements of the Graduate School and pass the qualifying examination. This examination consists of written and oral sections covering breadth in computer science as well as depth in a specific area.

Areas of research actively pursued by faculty and students within the department include: artificial intelligence, numerical methods, computational science, operating systems, distributed computing and networking, theory of computation, data base technology, design and analysis of algorithms, cryptography, graphics and vision, parallel processing, data mining, bioinformatics and software engineering. Courses in these and other areas are available to permit students to complete studies of sufficient breadth and depth prior to engaging in independent research.

Admissions

The admission decision is made by the Higher Degrees Committee based on the overall application file consisting of GRE scores, TOEFL scores (for international students), GPA, grades in CS and Math courses, background in computer science, letters of recommendation, and statement of purpose.

Students admitted to the doctoral program in Computer Science who have been awarded a master's degree in Computer Science from another institution are not eligible to receive a master's degree in Computer Science from the University of Kentucky. Exceptions to this policy must be approved by the Graduate School Dean upon petition by the Director of Graduate Studies.

Graduate Courses

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| CS 405G | Introduction To Database Systems | (3) |
| CS 415G | Graph Theory (Same As MA415G) | (3) |
| CS 416G | Principles Of Operations Research I (Same As MA 416G) | (3) |
| CS 441G | Compilers For Algorithmic Languages | (3) |
| CS 450G | Fundamentals Of Programming Languages | (3) |
| CS 463G | Introduction To Artificial Intelligence | (3) |
| CS 470G | Introduction To Operating Systems | (3) |

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| CS 471G | Networking And Distributed Operating Systems | (3) |
| CS 485G | Topics In Computer Science (Subtitle Required) | (2-4) |
| CS 505 | Intermediate Topics In Database Systems | (3) |
| CS 515 | Algorithm Design | (3) |
| CS 521 | Computational Sciences | (3) |
| CS 522 | Matrix Theory And Numerical Linear Algebra I (Same As MA 522) | (3) |
| CS 535 | Intermediate Computer Graphics | (3) |
| CS 536 | Situated Computing | (3) |
| CS 537 | Numerical Analysis (Same As MA/EGR 537) | (3) |
| CS 541 | Compiler Design | (3) |
| CS 555 | Declarative Programming | (3) |
| CS 570 | Modern Operating Systems | (3) |
| CS 571 | Computer Networks | (3) |
| CS 575 | Models Of Computation | (3) |
| CS 585 | Intermediate Topics In Computer Science (Subtitle Required) | (3) |
| CS 587 | Microcomputer Systems Design (Same As EE 587) | (3) |
| CS 610 | Master's Project | (3) |
| CS 611 | Research In Computer Science | (3) |
| CS 612 | Independent Work In Computer Science | (1-3) |
| CS 616 | Software Engineering | (3) |
| CS 617 | Requirements Engineering | (3) |
| CS 618 | Software Design | (3) |
| CS 619 | Software Testing And Quality Evaluation | (3) |
| CS 621 | Parallel And Distributed Computing | (3) |
| CS 622 | Matrix Theory And Numerical Linear Algebra II (Same As MA 622) | (3) |
| CS 623 | Parallel Iterative Computing | (3) |
| CS 630 | Free-Form Solid Modeling | (3) |
| CS 631 | Computer-Aided Geometric Design | (3) |
| CS 633 | 3D Computer Animation | (3) |
| CS 634 | Multimedia Systems | (3) |
| CS 635 | Image Processing (Same As EE 635) | (3) |
| CS 636 | Computer Vision | (3) |
| CS 637 | Exploring Virtual Worlds | (3) |
| CS 642 | Discrete Event Systems (Same As EE 642) | (3) |
| CS 655 | Programming Languages | (3) |
| CS 660 | Topics In Artificial Intelligence (Subtitle Required) | (3) |
| CS 663 | Artificial Intelligence | (3) |
| CS 670 | Distributed Operating System Theory | (3) |
| CS 671 | Advanced Computer Networks | (3) |
| CS 673 | Error Correcting Codes | (3) |
| CS 676 | Parallel Algorithms | (3) |
| CS 677 | Computational Geometry | (3) |
| CS 678 | Cryptography | (3) |
| CS 680 | Seminar In Computer Science | (2) |
| CS 682 | Switching Theory | (3) |
| CS 683 | Finite-State Machines | (3) |
| CS 684 | Special Topics In Vision, Graphics And Multimedia (Subtitle Required) | (3) |
| CS 685 | Special Topics In Computer Science (Subtitle Required) | (3) |
| CS 686 | Special Topics In The Theory Of Computation (Subtitle Required) | (3) |
| CS 687 | Special Topics In Systems | (3) |

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| CS 688 | Neural Networks (Same As EE 688) | (3) |
| CS 689 | Special Topics In Numerical And Scientific Computation (Subtitle Required) | (3) |
| CS 690 | Operating Systems Theory | (3) |
| CS 748 | Master's Thesis Research | (0) |
| CS 749 | Dissertation Research | (0) |
| CS 767 | Dissertation Residency Credit | (2) |
| CS 768 | Residence Credit For Master's Degree | (1-6) |
| CS769 | Residence Credit For Doctor's Degree | (0-12) |