Master of Science
in
Computer Science

Department of Electrical Engineering &
Computer Science
College of Engineering, Technology & Physical
Sciences
Alabama A&M University
Overview

Main points:

1. Computer Science is a good career choice
2. Alabama A&M University Department of Electrical Engineering & Computer Science provides excellent preparation for a career in Computer Science

http://www.aamu.edu/Academics/engineering-technology/EE/Pages/MSCS-Program.aspx
Program Focus

- The graduate program is designed to equip students with advanced knowledge in both computer science theory and application.
- The graduate program provides basic competence in the principal areas of computer science. Student will build expertise in one of a number of practical and theoretical subjects, working toward a deeper understanding under the guidance of a faculty member.
Application Process & Admission Requirements

- Submit online application to graduate study web page
- 3 recommendation letters
- Pay application fee
- Official transcript

- Hold bachelor's degree in computer science, engineering, or related areas;
- Complete GRE
- Valuable GPA

Contact Info:  

Dr. Kaveh Heidary  
kaveh.heidary@aamu.edu  
(256) 372 - 5587
Core Courses

- Computer science is programming intensive

- Core courses includes
  - Design & Analysis of Algorithm
  - Object-oriented Programming & Design
  - Computer Architecture
  - Operating System Principles
  - Database Management Systems
  - Software Engineering Methodology
Elective Courses

- Cyber Security Fundamentals (new)
- Robotics (new)
- Management Information Systems
- Numerical Analysis
- Applications of Statistical Meth.
- Compiler Design
- Advanced Data Structures
- Information to Bioinformatics
- Computer Communications
- Artificial Intelligence
- Neural Networks
- Advanced Database Systems
- Image Processing
- Multimedia Systems and Applications
- Computer Graphics and Animation
- Fuzzy and Expert Systems
- Cooperative Educational Work Experience
- Advance Topics in Computer Science
- Independent Study
Scholarships and Assistantships

- **Strengthening Computer Science Graduate Program (HBGI SCSGP)** that is supported by Title III office for African-American students

- **Contact Info:**
  
  **Dr. Joel Fu (Coordinator)**
  
  Jian.fu@aamu.edu
  256-372-8461

- **Financial Aid available:**
  
  Student Financial Aid, Alabama A&M University, P.O. Box 907, Normal, AL 35762
  
  [http://www.aamu.edu/Admissions/fincialaid/Pages/default.aspx](http://www.aamu.edu/Admissions/fincialaid/Pages/default.aspx)
Two Options

**Thesis Option**
(total 33 credit hrs)
- 18 credit hours of core courses
- 9 credit hours of electives
- 6 credit hours of thesis

**Non-Thesis Option**
(total 36 credit hrs)
- 18 credit hours of core courses
- 18 credit hours of electives
- Comprehensive exam
Sample of MSCS Study Plan

First year at AAMU/MSCS:

<table>
<thead>
<tr>
<th>Column1</th>
<th>Semester 1</th>
<th>Summer</th>
<th>Semester 2</th>
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<td>Design &amp; Analysis of Algorithm</td>
<td>CMP500 Elective</td>
<td>Operating System Prin.</td>
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<tr>
<td></td>
<td>Object-oriented Prog. &amp; Design</td>
<td>CMP500 Elective</td>
<td>Database Mgmt. Sys.</td>
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<tr>
<td></td>
<td>Computer Architecture</td>
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<td>Software Engr. Meth.</td>
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Second year at AAMU/MSCS:

NonThesis Option:

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<th>Semester 3</th>
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<th>Semester 4</th>
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Thesis Option:

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<th>Summer</th>
<th>Semester 4</th>
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<td>Thesis</td>
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<tr>
<td>Subtotal</td>
<td></td>
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<td>3</td>
</tr>
</tbody>
</table>

Core Courses | Electives | Comp Exam | Total
---|---|---|---
| 18 | 18 Pass | 18 |
Careers – Graduating

- Software Development
- Software Engineering
- System Analyst
- Robot Programmer
- Database Administration
- Database Programming
- Internet Engineering
- Web Development
- Systems Administration
- Network Administration
- Information Technology
Job Prospects in CS

- Dot-com bust did not reduce the demand
- More jobs are being created
- Job prospects are very bright
  - 2008-2014, 71% of new jobs in science and engineering will be for computer specialists
  - 59% of new jobs plus net replacements
  - US universities will graduate half this amount
Percentage Of New STEM Jobs By Area Through 2018

- Computing: 71%
- Traditional Engineering: 16%
- Mathematics: 2%
- Life Sciences: 4%
- Physical Sciences: 7%

Computer Science graduates are in top 5 of demand market (CNN):

- According to CNN Money Magazine, Software Developer is the #1 job in a fast-growth field for 2011.

- U.S. Department of Labor – Projected to be top 5 fastest growing occupations (46% over next 10 years)
  - The U.S. BLS projects that computer science occupations will add almost 786,000 new jobs from 2008 to 2018, more than twice the average growth of all other occupations.

- CNN Money says “Software Engineer” is best job in US
Employment and Salaries

- MSN Careers puts computer science as the #2 best bet for jobs in 2012 and #1 in average salary.
- % alumni in companies such as:
  - Lockheed Martin, Boeing, NASA research center, AT&T, Intergraph, Cisco Systems, Dynetics, Lexis-Nexis, Bell and Howell
- Multinational companies such as IBM, Intel
- National labs:
  - NASA, Oakridge and Lawrence Livermore
- A recent WPI study of Average Salary by Concentration reveals that Computer Science graduates have the highest starting salary of all WPI graduates, with BS recipients earning an average of $69,868 per year and MS and PhD recipients earning an average of $78,771 annually.
- Earning range $60K - $90K
10 Most Popular Computer Science Degree Jobs

- Software Engineer / Developer / Programmer
- Programmer Analyst
- Information Technology (IT) Manager
- Software Developer, Web Applications
- Web Developer
- Test / Quality Assurance (QA) Engineer (Computer Software)
- Project Manager, IT
- Database Administrator (DBA)
- Information Technology (IT) Consultant
- Systems Engineer (Computer Networking / IT)

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Teaching and Advising

- 7 to 10 graduate assistantships available for African-American students
- Interactive classes around 10 - 25 students
- Core courses taught by Professors/Lecturers
- Continuous monitoring and assessment of all courses for better coordination
- Graduate students help with labs/ entry level courses
- Evening courses for part-time students
- Opportunity for research experience in various areas
- Professional advisors for all graduate students

http://www.aamu.edu/Academics/engineering-technology/EE/Pages/MSCS-Program.aspx
Department and Facilities

- Three instructional labs with 25 ~ 40 computers each
- Class rooms equipped with projectors
- Gigabit network speed
- Faculty offices equipped with computers
- All labs have latest state of art computers

http://www.aamu.edu/Academics/engineering-technology/EE/Pages/MSCS-Program.aspx
Alumni

http://www.aamu.edu/Academics/engineering-technology/EE/Pages/MSCS-Program.aspx
For More Information

• See our web page:
  
  http://www.aamu.edu/Academics/engineering-technology/EE/Pages/MSCS-Program.aspx

• Email: jian.fu@aamu.edu

• Phone: 256-372-4119 or 256-372-4115