Master of Engineering in Computer Engineering Orientation

August 22, 2018

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Outline

- Requirements for Master of Engineering (ME) in Computer Engineering (Non-Thesis)
- Additional ME Course Requirements
- Foundation and First-Level Graduate Courses
- Tentative List of Courses for Master of Engineering CEEN Students
  - Must take at least 6 courses from this list
- Tentative List of Academic Year 2019 and 2020 Computer Engineering & Systems Courses
- Computer Science and Engineering (CSE) Class Restrictions
- Other Orientations
Requirements for Master of Engineering in Computer Engineering (Non-Thesis)

- Total number of hours (30)
- A minimum of 27 classroom hours (excludes 681, 684, & 685)
  - Classroom hours must be taken from courses within the College of Engineering and/or College of Science.
  - One course from the ISYS Dept. in the College of Business is allowed.
  - A minimum of 24 classroom hours from the Departments of CSCE and ECEN
  - At least 13 of these 24 hours must be in ECEN.
  - At least 6 courses from the CEEN Master of Engineering student course list – see slides 7-11.
- Transfer hours allowed from another institution (maximum of 6 hours)
  - Transfer hours must be from a U.S. peer institution; they cannot have been used on a previous degree plan.
  - Students must send syllabi, transcript, and TAMU course equivalent to the Graduate Office. Transfer hours are subject to the approval of the GSC.
- Undergraduate hours allowed (maximum of 6 hours)
  - Only 400 level undergraduate courses can be included on your degree plan.
  - Courses must be from the College of Engineering and/or College of Science.
Requirements for Master of Engineering in Computer Engineering (Non-Thesis) (Continued)

• One hour of seminar is allowed (ECEN/CSCE 681) but is **NOT** required.
• Seminar (681), Internship (684), Directed Studies (685): no more than 3 hours allowed (combined)
  – Research (691) hours are not allowed on the ME degree plan.
• **A Final Project Report** is required to be submitted to the Graduate Office.
  – A graded project from any ECEN or CSCE graduate course can be used to fulfill this requirement.
  – The project requires a grade, the professor’s signature, and a completed cover page.
  – It must be submitted in the graduating semester;
    *See the eCampus page for submission deadlines and other requirements.*
• Composition of supervisory committee:
  – The Graduate Coordinator will be the chair of all ME committees. No other committee members are needed.
• STAT 651 and STAT 652 (statistics courses) are for non-science majors and are *not allowed*.

• Traditionally, *no courses* will be admitted from Engineering Technology because of the non-calculus based curriculum and no approved graduate program.

• Credit for CSCE 614 will normally not be allowed. Take ECEN 651 instead.

• Credit for CSCE 619 and CSCE 612 in addition to ECEN 602 will normally not be allowed.

• No credit will be given for CSCE 601 & 602.

• No credit will be given for the following foundation courses:
  - ECEN 214
  - ECEN 248
  - ECEN 314
  - ECEN 325
  - ECEN 350
  - CSCE 221
  - CSCE 311
  - CSCE 321
Foundation and First-Level Graduate Courses

- **Foundation Courses (No graduate credit)**
  - ECEN 214 Electrical Circuit Theory
  - ECEN 248 Introduction to Digital Systems Design
  - ECEN 314 Signals & Systems
  - ECEN 325 Electronics
  - ECEN 350 Computer Architecture and Design
  - ECEN 423 Computer and Wireless Communications Networks
  - CSCE 221 Data Structures and Algorithms
  - CSCE 311 Analysis of Algorithms

- **Recommended first-level graduate courses**
  - ECEN Undergraduate Course: 468
  - CSCE Undergraduate Course: 410
  - ECEN Graduate Courses: 602, 621, 651, 653, 654, 687, 714, 754, 749
  - CSCE Graduate Courses: 629, 662
Tentative List of Courses for Master of Engineering CEEN Students

Must take at least 6 courses from the list on slides 7-11.

- **Hardware/VLSI**
  - ECEN 468 Advanced Digital System Design
  - ECEN 654 VLSI System Design
  - ECEN 661 Integrated Systems Design Automation
  - ECEN 680 Test and Diagnosis of Digital Systems
  - ECEN 687 Introduction to VLSI Design Automation
  - ECEN 689 Special Topics Courses in Hardware/VLSI
  - ECEN 699 Advances in VLSI Logic Synthesis
  - ECEN 714/454 Digital Integrated Circuit Design
  - ECEN 749/449 Microprocessor System Design
  - ECEN 751 Advanced Computational Methods for Integrated System Design
  - ECEN 752 Advances in VLSI Circuit Design
  - ECEN 759 Hardware Security
Tentative List of Courses for Master of Engineering CEEN Students

- **Networks**
  - **ECEN 602** Computer Communications & Networking
  - **ECEN 619** Internet Protocols & Modeling
  - **ECEN 621** Mobile Wireless Networks
  - **ECEN 689** Special Topics Courses in Networks
  - **CSCE 663** Real-Time Systems
  - **CSCE 664** Wireless and Mobile Systems
  - **CSCE 665** Advanced Networking & Security
Tentative List of Courses for Master of Engineering CEEN Students

- **Computer Architecture**
  - ECEN 651 Microprogrammed Control of Digital Systems (Not CSCE 614)
  - ECEN 653 Computer Arithmetic Unit Design
  - ECEN 659 Parallel / Distributed Numerical Algorithms and Applications
  - ECEN 676 Advanced Computer Architecture
  - ECEN 689 Special Topics Courses in Computer Architecture
  - CSCE 605 Compiler Design
Tentative List of Courses for Master of Engineering CEEN Students

- **Systems and Software**
  - CSCE 410 Operating Systems
  - CSCE 606 Software Engineering
  - CSCE 629 Analysis of Algorithms
  - CSCE 662 Distributed Processing Systems
  - CSCE 670 Information Retrieval & Storage
Tentative List of Courses for Master of Engineering CEEN Students

- Networking and System Theory
  - ECEN 663 Data Compression with Applications to Speech and Video
  - ECEN 689 Special Topics Courses in Networking and System Theory
  - ECEN 750 Design and Analysis of Communication Networks
  - ECEN 753 Theory and Applications of Networking Coding
  - ECEN 754/434 Optimization for Electrical and Computer Engineering Applications
  - ECEN 755 Stochastic Systems
  - ECEN 756 Game Theory

- Data Science
  - ECEN 689 Special Topics Courses in Data Science
  - ECEN 748 Data Stream Algorithms and Applications
  - ECEN 758 Data Mining and Analysis
Tentative List of Computer Engineering and Systems Classes for Fall 2018

- ECEN 602 Computer Communication and Networking
- ECEN 676 Advanced Computer Architecture
- ECEN 681 Seminar – Computer Engineering
- ECEN 689 Sp. Topics in Dependable Learning Systems
- ECEN 689 Sp. Topics in Online Decision Making and Learning
- ECEN 714 Digital Integrated Circuit Design
  (Stacked with ECEN 454)
- ECEN 749 Microprocessor Systems Design
  (Stacked with ECEN 449)
- ECEN 751 Computational Methods for Integrated System Design
- ECEN 753 Theory and Applications of Network Coding
- ECEN 754 Optimization for Electrical and Computer Engineering Applications
- ECEN 758 Data Mining and Analysis
- ECEN 759 Hardware Security
Tentative List of Computer Engineering and Systems Classes for Spring 2019

- ECEN 619 Internet Protocols and Modeling
- ECEN 651 Microprogrammed Control of Digital Systems
- ECEN 654 Very Large Scale Integrated Systems Design
- ECEN 681 Seminar – Computer Engineering
- ECEN 689 Sp. Topics in Architecture and Circuits for Machine Learning
- ECEN 689 VLSI Machine Learning Systems
- ECEN 714 Digital Integrated Circuit Design
  (Stacked with ECEN 454)
- ECEN 748 Data Stream Algorithms and Applications
- ECEN 749 Microprocessor Systems Design
  (Stacked with ECEN 449)
- ECEN 755 Stochastic Systems
- ECEN 756 Game Theory
- ECEN 757 Distributed Systems and Cloud Computing
- ECEN 758 Data Mining and Analysis
Tentative List of Computer Engineering and Systems Classes for Fall 2019

- ECEN 602 Computer Communication and Networking
- ECEN 621 Mobile Wireless Networks
- ECEN 651 Microprogrammed Control of Digital Systems
- ECEN 681 Seminar – Computer Engineering
- ECEN 687 Introduction to VLSI Physical Design Automation
- ECEN 689 Sp. Topics in Processor Memory System Architecture
- ECEN 714 Digital Integrated Circuit Design
  (Stacked with ECEN 454)
- ECEN 749 Microprocessor Systems Design
  (Stacked with ECEN 449)
- ECEN 751 Computational Methods for Integrated System Design
- ECEN 754 Optimization for Electrical and Computer Engineering Applications
- ECEN 758 Data Mining and Analysis
- ECEN 759 Hardware Security
Tentative List of Computer Engineering and Systems Classes for Spring 2020

- ECEN 619 – Internet Protocols and Modeling
- ECEN 653 – Computer Arithmetic Unit Design
- ECEN 654 – Very Large Scale Integrated Systems Design
- ECEN 681 – Seminar – Computer Engineering
- ECEN 689 Sp. Topics in Architecture and Circuits for Machine Learning
- ECEN 689 Sp. Topics in Smartphone Systems
- ECEN 689 Sp. Topics in VLSI Machine Learning Systems
- ECEN 714 Digital Integrated Circuit Design
  (Stacked with ECEN 454)
- ECEN 748 Data Stream Algorithms and Applications
- ECEN 749 Microprocessor Systems Design
  (Stacked with ECEN 449)
- ECEN 750 Design and Analysis of Communication Networks
- ECEN 755 Stochastic Systems
- ECEN 758 Data Mining and Analysis
Computer Science & Engineering (CSE)  
Class Restrictions

- Beginning in Fall 2018, the CSE Department has placed enrollment restrictions on several high-demand CSCE graduate classes
  - In order to enroll in one of these high-demand classes as a CEEN major, you need to get on the waiting list.
  - FAQ: https://engineering.tamu.edu/cse/academics/graduate-program/faq.html#ForceRequests
  - URL: https://csnet.cs.tamu.edu/apps/forces/
- CSCE Fall 2018 Classes with enrollment restrictions (As of 8/21/2018)
  - CSCE 606 Software Engineering
  - CSCE 608 Database Systems
  - CSCE 611 Operating Systems
  - CSCE 625 Artificial Intelligence
  - CSCE 629 Analysis of Algorithms
  - CSCE 678 Distributed and Cloud Computing
CESG Check-In

• Drop-In Daily WEB 333E: 8:00 – 12:00 & 1:00 - 4:00

• One-on-one meeting with Ms. Vickie Winston, CESG Program Specialist
  – Assignment of Mentor/Advisor for Course Advice
  – Useful Information

• WEB 333 - Suite in the Northwest corner of Wisenbaker includes Vickie’s office, CESG Offices, & the Fishbowl
International Students

https://calendar.tamu.edu/iss/#!view/day

- Thursday, August 23 8:00 AM - 4:00 PM
- MSC Ballroom & Rudder Auditorium

Master of Engineering in Computer Engineering Orientation
OGAPS Orientation
(Registration is now closed)

- Highly Recommended
- Friday, August 24, 8:00 AM to 4:00 PM
- Rudder Exhibit Hall

**Register** for orientation!

https://ogaps.tamu.edu/New-Current-Students/New-Graduate-Student-Orientation

*previous session held on Friday, 8/17/18*
CESG’s Website

• You can find this PowerPoint Thursday at:

https://cesg.tamu.edu/