Systems Architecting and Engineering

DEN@Viterbi Orientation

SAE Graduate Student Advisor, Luis Saballos
AGENDA

- Welcome
- Program Overview
- Degree Requirements
- Department Policies, Procedures, Tips
- ASTE DEN
- Academic Advising
- Questions?
Welcome to USC and DEN@Viterbi

Luis Saballos, SAE Student Advisor

Contact Information
Email Lsaballo@usc.edu
Phone (213) 821-4234
Office: OHE 500Q

- Advise undergraduate, certificate, master, and doctoral students
- Advise for the Astronautical Engineering (ASTE) and the Systems Architecting and Engineering (SAE) degree programs
SAE Program Overview

- Master of Science in Systems Architecting and Engineering (MS SARE)
- Graduate Certificate in Systems Architecting and Engineering (GCRT SARE)

SAE programs housed in Astronautical Engineering Dept.

Main website: https://sae.usc.edu/

SAE Executive Director
Dr. Azad Madni

Email: Azad.Madni@usc.edu
Department of Astronautical Engineering

- Unique pure-space-engineering department (established in 2004)
- Offers the full set of degrees in **Astronautical Engineering (ASTE)**
  - Bachelor of Science
  - Bachelor of Science Minor
  - Master of Science
  - Engineer
  - PhD
  - Graduate Certificate
- Among largest national programs in space engineering on Master’s level
- Mission: to provide forefront research and education in astronautical (space) engineering
Department of Astronautical Engineering
Interdisciplinary Collaborations

- Interdisciplinary collaborations with other USC programs/departments/schools
  - Systems Architecting and Engineering
  - Electrical Engineering
  - Mechanical Engineering
  - Information Sciences Institute (ISI), VSOE
  - Physics and Astronomy

- External collaborations
  - U.S. Universities (Harvard, UC Berkeley, U of Az., BU, U Mass., ...)
  - NASA centers (JPL, Goddard)
  - DoE National Labs (Los Alamos, Princeton Plasma Physics Lab)
  - R&D centers and institutes (Applied Physics Laboratory; Southwest Research Institute, ...)
  - Industry (Northrop-Grumman, Lockheed-Martin, Boeing, ...)
  - Foreign R&D centers and universities (Germany, Japan, ...)
Systems Architecting and Engineering

Degree Requirements
Master of Science in Systems Architecting and Engineering (MSSARE)

Requirements for Graduation: A total of 27 units (9 classes) with a 3.0 GPA. A maximum of 6 units at the 400-level may apply towards the degree. No more than 6 units of Special Topics courses (499 or 599) may be applied. Directed Research (any 590 course) is restricted to 3 units.

- 15 units of SAE Required Core Courses
- 3 units in SAE elective
- 3 units in the General Technical Area (choose from specific list of courses)
- 6 units in the Technical Specialization Area (open to most 400 or 500-level Viterbi courses. See catalogue description below for recommended classes based on concentration interest)

Course Planning Tips:
- Create a course plan and send to me for review.
- SAE 549 is foundation course and recommended to be first SAE course taken.

MS SAE program catalogue:
https://catalogue.usc.edu/preview_program.php?catoid=14&poid=17204&hl=sae&returnto=search
Required Courses – 5 Courses (3 units each)

1. SAE 549 Systems Architecting.
2. SAE 541 Systems Engineering Theory and Practice
3. SAE 542 Advanced Topics in Systems Engineering
4. SAE 547 Model-Based Systems Architecting and Engineering
   or
   SAE 548 Systems/System-of-Systems Integration and Communication
5. SAE 560 Economic Considerations for Systems Engineering
   or
   ISE 460 Engineering Economy
SAE Master’s Program
Degree Requirements

SAE Elective – Pick 1 course (3 units)
Any SAE 500 course

General Technical Area– Pick 1 course (3 units)
CSCI 510 Software Management and Economics
CSCI 577a Software Engineering
CSCI 577b Software Engineering
ISE 506 Lean Operations
ISE 580 Performance Modeling with Simulation
SAE 543 Case Studies in Systems Engineering and Management
SAE 550 Systems Architecting and the Political Process
Technical Specialization Area – (6 units)

Courses are intended to complement the student's prior education and experience toward becoming a well-rounded systems architect-engineer or architect-manager.

The courses should come from one Viterbi department.

The student may choose from a large variety of technical specializations spanning all departments in the Viterbi School of Engineering. Flexibility is emphasized in this choice.
Graduate Certificate in Systems Architecting and Engineering (GCRTSARE)

Requirements for Graduation: A total of 15 units (5 classes) with a 3.0 GPA. The courses taken for the certificate may be applied later to the Master of Science in Systems Architecting and Engineering.

Create a course plan to stay on track:

Complete list of required courses for completing the GCRT SARE program are here:
https://catalogue.usc.edu/preview_program.php?catoid=11&poid=10947&hl=sae&returnto=search
SAE Certificate Program
Degree Requirements

Required Courses – Choose 5 (3 units each)

ISE 460 Engineering Economy
or
SAE 560 Economic Considerations for Systems Engineering

ISE 515 Engineering Project Management
ISE 544 Management of Engineering Teams
SAE 541 Systems Engineering Theory and Practice
SAE 542 Advanced Topics in Systems Engineering
SAE 547 Model-Based Systems Architecting and Engineering
SAE 548 Systems/System-of-Systems Integration and Communication
SAE 549 Systems Architecting
SAE 574 Net-Centric Systems Architecting and Engineering
Master of Science Program in Systems Architecting and Engineering-
Common Questions

Typical time to complete the program:
- Full time students: 3-4 semesters (2-3 courses/semester)
- Part-time students: 3-4 year (1-2 courses per semester)

Course Sequencing:
- Course sequence is entirely up to the student. Advisors help as needed.
  Exceptions: courses with pre-requisites.

Course Substitutions:
- Accepted on a case by case basis (please see me for further details)

Technical Specialization courses not listed in catalog:
- Accepted on a case by case basis; subject to Program Director approval (please see me for further details)
SAE Policies, Procedures, Tips
SAE Policies, Procedures, Tips

- Maintain a 3.0 grade point average
- USC requires graduate students to maintain continuous enrollment every Fall and Spring semester.
- You have 5 years to complete your degree program from the term of your first course.
- Review your STARS Report every semester.
  - The STARS Report includes the degree and major you are currently pursuing, GPA, Catalogue year, admission term, the number of units and course required to fulfill your degree requirements.
  - You can access it through the “OASIS” section of the myUSC portal (http://my.usc.edu).
  - Your STARS Report is manually activated after you enroll in your first course as an officially admitted student.
- Transfer Credit – it is possible to transfer in up to 6 units (two courses). Please email me directly for more information.
- If you desire to change majors, you can do so after your first semester if you receive a 3.0 of higher (contact the other department for the transfer procedures)
- **Check your USC email regularly!**
• Refer to the USC Schedule of Classes for planning purposes
  http://classes.usc.edu/

• SAE Study Plans:
  https://sae.usc.edu/programs/

• If you will be working full-time, we strongly recommend only taking 1 class in your first semester
• You have 5 years to complete your degree program from the term of your first course.
• Core required courses are offered every fall and spring semester, and selected courses are offered in the summer term.
• In summer, some courses are offered in a fast-paced 6 week format. It is not recommend that you take two courses that overlap in the summer.
• All DEN section require Departmental Clearance (D-Clearance) prior to registering for classes
SAE DEN
(Distance Education Network)
VSOE’s Distance Education Network (DEN@Viterbi)

Broadcast master control

Distance Education Network (DEN)
- webcast over the Internet, with lectures viewed anywhere in the world on PC (standard high-speed connection; no special software)
- on-campus students attend lectures in class
- password-protected lectures can be viewed asynchronously any time during the entire semester
- class notes, homework assignments, and handouts transmitted electronically
- exams: on campus for students in the Greater Los Angeles area and proctored (e.g., at local community colleges) for remote students
VSOE’s Distance Education Network (DEN@Viterbi)

- Student view
- DEN classrooms
- Control room
- Instructor view
- Instructor
- Control room
- face camera
- overhead camera
- laptop connection
- broad(web)cast monitor

USC Viterbi
School of Engineering
1. Bookmark [https://courses.uscden.net](https://courses.uscden.net)
2. Your D2L username is your full USC Email Address
3. If you do not remember your D2L password, click “Forgot your password?”

Sign up for an exclusive one-on-one training session inside a virtual classroom to learn all about Desire2Learn: [https://viterbigrad.usc.edu/technical-support/training-options/](https://viterbigrad.usc.edu/technical-support/training-options/)
HOW TO REQUEST D-CLEARANCE FROM DEN

All DEN courses require D-clearance.

1. Login to DEN Desire2Learn: [http://courses.uscden.net](http://courses.uscden.net)
2. Go to DEN@Viterbi Tools on the navigation bar
3. Select “Request D-clearance” link, select the term, and select a course
4. Approval process takes 1-2 business days. To view the status of a request, click on “Check D-Clearance Status”
5. You can register once your request has been processed. D-clearances expire 7 days from when it is issued so register as soon as you obtain it to secure a seat in a course.

For questions on D-Clearance status, contact [den@vase.usc.edu](mailto:den@vase.usc.edu)
## DEN@Viterbi Contacts

**Viterbi Admission & Student Engagement Office**

**Location:** Olin Hall of Engineering (OHE), Rm. 106  
**Hours:** Mon. - Fri. 8:30 am - 5 pm (Pacific Time)  
**Phone:** (213) 740-4488 | **Fax:** (213) 821-0851  
https://viterbigrad.usc.edu/

DEN d-clearance inquiries den@vase.usc.edu

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<tr>
<th>DEN@Viterbi Support</th>
<th>Contact Information</th>
<th>Staff</th>
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<tbody>
<tr>
<td>Technical support,</td>
<td><a href="mailto:dentsc@usc.edu">dentsc@usc.edu</a></td>
<td>Rebecca Lee</td>
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<tr>
<td>Desire2Learn training,</td>
<td>213-740-9356</td>
<td>Bianca Richter</td>
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<td>Homework</td>
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<tr>
<td></td>
<td><a href="mailto:denexam@usc.edu">denexam@usc.edu</a></td>
<td>Shirley Schutt</td>
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<td></td>
<td>213-740-9356</td>
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<tr>
<td>• General advisement</td>
<td><a href="mailto:ptrinida@usc.edu">ptrinida@usc.edu</a></td>
<td>Patty Rinehart</td>
</tr>
<tr>
<td>• Policies &amp; Procedures</td>
<td>213-740-0116</td>
<td></td>
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Academic Advising
Academic Advising Appointments

Luis Saballos, SAE Student Advisor

Email: Lsaballo@usc.edu  Phone: (213) 821-4234

- I am available by email and phone if you have any questions. If you send an email, please include your 10-digit USC ID number

- To schedule a zoom advising appointment contact me through email.
Academic Advising Appointments cont’d

myViterbi Advisement Appointment System

https://myviterbi.usc.edu/

myViterbi

Announcements

Student Resources

- Academic Integrity Introduction
- Advisement Appointment System
- Application to Graduate
THANK YOU!

HAVE A GREAT FALL 2021 SEMESTER!

A recording of this online orientation and presentation will be available for viewing and download on the VASE website at

https://viterbigrad.usc.edu/ms-denviterbi-new-student-information/

FLIGHT ON!