



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



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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, ...)

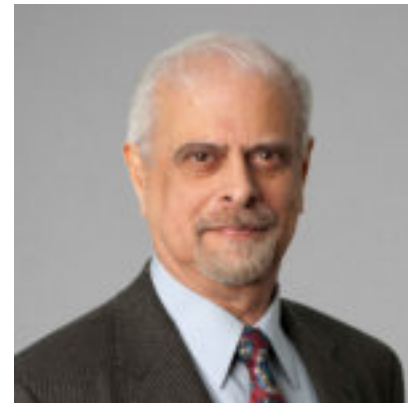


SAE Program Overview

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

**SAE programs housed in
Aeronautical Engineering Dept.**

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



SAE Executive Director
Dr. Azad Madni

Email: Azad.Madni@usc.edu



Systems Architecting and Engineering

Degree Requirements



Master of Science in Systems Architecting and Engineering (MS SAE)

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 Technical Management Area (choose from specific list of courses)
- 6 units in the Technical Specialization Area (open to all Viterbi Grad courses)

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&returnto=5360

SAE Master's Program Degree Requirements



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

Technical Management Area– Pick 1 course (3 units)

CE 569 Project Controls Units: 4

DSO 580 Project Management Units: 3

ISE 515 Engineering Project Management Units: 3

ISE 517 Modern Enterprise Systems Units: 3

ISE 544 Leading and Managing Engineering Teams Units: 3

ISE 562 Decision Analysis Units: 3

ISE 585 Strategic Management of Technology Units: 3

MOR 561 Strategies in High-Tech Businesses Units: 3

SAE 550 Systems Architecting and the Political Process Units: 3

SAE Master's Program Degree Requirements



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: <https://16yvut3lcf341mbymkpwo7zt-wpengine.netdna-ssl.com/wp-content/uploads/2017/04/Certificate-Plan-after-2014.pdf>

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: 1.5-2 years (2-3 courses per semester)
- Part-time students: 3-4 years (1-2 courses per semester)

Course Sequencing:

*SAE 549 first course taken, after that 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 or higher (contact the other department for the transfer procedures)
- **Check your USC email regularly!**



SAE Policies, Procedures, Tips – Cont'd

- 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



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

DEN@Viterbi Support	Contact Information	Staff
Technical support, Desire2Learn training, Homework	dentsc@usc.edu 213-740-9356	Daniel Cueva Bianca Richter
DEN d-clearance inquiries	den@vase.usc.edu	
Exams	denexam@usc.edu 213-740-9356	Shirley Schutt
VASE Advisor	ptrinida@usc.edu 213-740-0116	Patty Rinehart
<ul style="list-style-type: none">• General advisement• Policies & Procedures		



Academic Advising

Advising Info

SAE Advising

- Email: Luis Saballos - lsaballo@usc.edu
- Or
- Email: Prisila Cisneros Vasquez, -prisilac@usc.edu
- Advising Appointment link:
<https://calendly.com/lsaballosusc/usc-aste-sae-advising-appointment-luis-saballos>
- Or
<https://calendly.com/prisilac/30min-1>

VASE Advising

- Email: DEN@vase.usc.edu
- Website: <https://viterbigrad.usc.edu/>
- Virtual Walk-in Hours (Monday-Friday, PST):
- 10:00 AM - 12:00 PM



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



QUESTIONS?

Please feel free to unmute your audio and ask your question.



THANK YOU!

HAVE A GREAT FALL 2022 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/>

FIGHT ON!