



21 April 2011

To: Graduate Students Enrolled in Astronautics Classes
Astronautics Program Instructors
Astronautics Program Friends

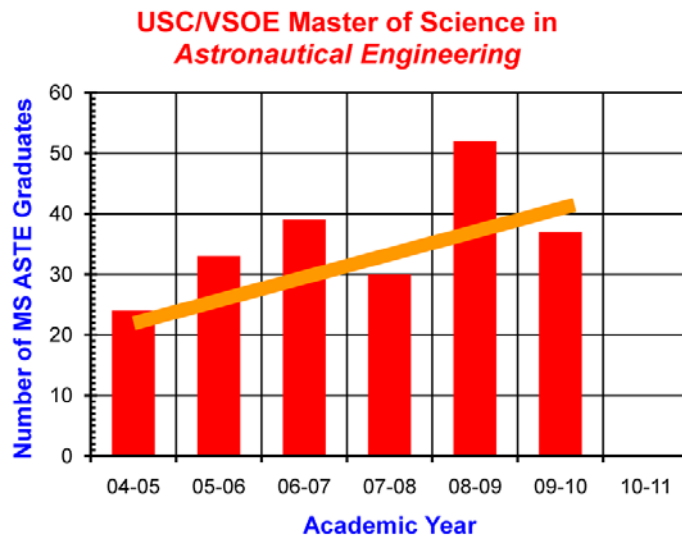
Astronautics Master's Program Update

As always this time of the year, we provide an update on the recent developments in the program *Master of Science in Astronautical Engineering*, or MS ASTE.

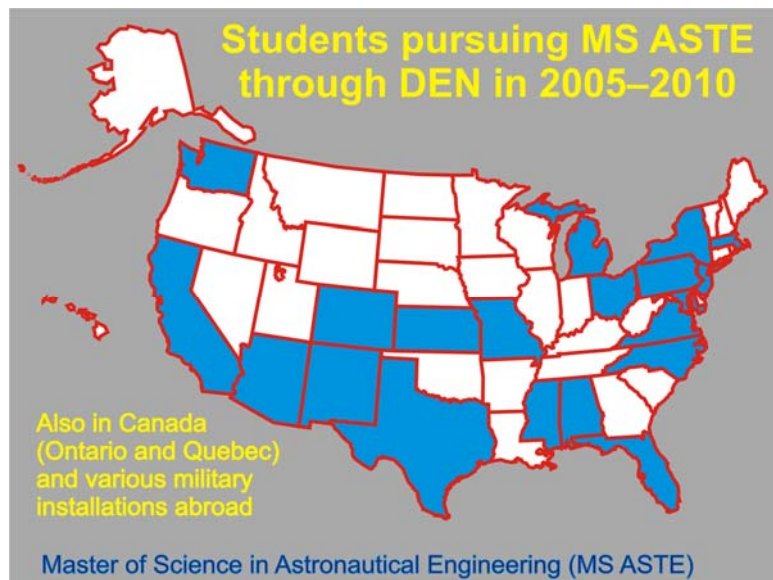
Department of
Astronautical
Engineering

Mike Gruntman, Ph.D.
Professor of
Astronautics

1) The Department of Astronautical Engineering continues its steady growth. During the last four academic years (2008–2009), we awarded almost 150 Master's degrees in *Astronautical Engineering*.



The program reaches students all over across the United States and Canada and military installations abroad.



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2) Our professional networking group **USC Astronautics Alumni, Students, Faculty, and Friends** was established on LinkedIn two years ago. Today, we have more than 210 members.

We welcome not only our ASTE students and alumni but also other former USC students who took Astronautics graduate courses and friends and supporters of the program from industry, government centers, and space advocacy groups. See page 17 for details.

The link to the group is at http://astronauticsnow.com/astrousc_linkedin/.

USC Astronautics fabulous rocket-scientist T-shirt is an instant success. Our group web site at LinkedIn provides the instructions how to get the T-shirt.



NASA Administrator Charles Bolden (left) at the 49th AIAA Aerospace Sciences Meeting in Orlando, Fla.; Mike Gruntman is on the right; VSOE MAPP's Billy Schwerin is behind the desk in the center. January 5, 2011.

3) Please note some changes in the long-term course schedule (pp. 4,5). The Dean's office has agreed to increase the frequency of offering some Astronautics courses. I hope that these changes will become permanent, making scheduling decisions for our students easier. This is a major step in strengthening the program. In any case, please always check with Astronautics Student Affairs the near-term course schedule.

4) We offer two ASTE 599 courses in the fall semester. See pages 9 and 10 for details.

5) Our students interested in propulsion and space environment area may also consider taking ASTE-445 *Molecular Gas Dynamics* to be taught by professor Joseph Wang in the Fall 2011, semester. Please remember that only two courses at the 400-level are counted towards MS ASTE. See page 11 for details.

6) The webcast (53 min.) of the overview of our program *Master of Science in Astronautical Engineering* is posted on the web. Please refer to this overview your friends and colleagues who might be interested in pursuing the degree. The web site URL is <http://astronauticsnow.com/msaste/overview.html>.

7) Certainly, do not hesitate contacting Astronautics Senior Administrator Ms. Dell Cuason (RRB-225; tel. 213-821-5817; cuason@usc.edu), should you have any questions.

Two of our staff members, Marrietta Penoliar (RRB-230; tel. 213-821-4234; marriett@usc.edu) and Ana Olivares (RRB-228; tel. 213-740-7228; aanaya@usc.edu), support operations of the department. Marrietta leads ASTE Student Affairs – she is your contact on all questions regarding class registration, schedule, admission to the programs in astronautical engineering. Ana supports business operations and research grants and contracts.

Before your inquiries, check first the web site of the MS ASTE frequently asked questions at <http://astronauticsnow.com/msaste/>.



Left-to-right: Marrietta Penoliar (ASTE Student Affairs), ASTE Professor Joseph A Kunc (PhD Program Advisor), Dell Cuason (ASTE Senior Administrator), and Ana Olivares (ASTE Budget/Business Technician).

8) Please find below

- (a) info on some courses in the fall 2011 (p. 4)
- (b) schedule of ASTE courses for the summer and fall 2011 semesters (p. 5)
- (c) preliminary class schedule for 2010–2014 (pp. 6,7)
- (d) description of ASTE 527 (p. 8)
- (e) description of ASTE 599 courses (p. 9,10); (f) description of ASTE445 (p. 11)
- (g) catalog description of MS ASTE (p. 12,13)
- (h) admission requirements to graduate degrees in Astronautical Engineering (p.14)
- (i) instructions and the form for transfer to programs in Astronautical Engineering (pp.15,16)
- (h) web site printout with the information on the professional networking group in LinkedIn (p.17).

Ad Astra!

Mike Gruntman
Professor of Astronautics
Director, MS in Astronautical Engineering

Schedule of Courses

When you plan your coursework, please always check in advance the availability of the chosen courses. While we carefully plan our course offerings, it is the Dean's Office that makes the final decision on course offering. You may call it, using the language of mathematics, the "boundary conditions" or "constraints."

In the summer 2011, no ASTE courses are offered.

Fall 2011 semester

In the Fall semester of 2011, **ASTE 527 *Space Studio Architecting*** will again enroll a few remote students through DEN. This studio course involves substantial student interaction and was available in the past to on-campus students only. Last year, we successfully enrolled remote students for the first time. Please note that enrollment in this course is limited (strictly enforced limit), so you will need to register early if you are interested. More information about the course on page 8.

For more information about the specific project in ASTE527 in Fall 2011, please contact directly the instructor, Madhu Thangavelu, at thangavelu-girardey@cox.net .

In the fall semester of 2011, we offer two ASTE 599 courses.

Dr. Brett Williams will teach **ASTE 599 *Spacecraft Structural Strength and Materials***. The course complements the existing ASTE course on structural spacecraft dynamics (ASTE 556). These two courses on structures will be offered once every two years. More information about ASTE 599 is on page 9.

Professor Hintz and a team of co-instructors will teach **ASTE 599 *Advanced Spacecraft Navigation and Control***. More information about ASTE 599 is on page 10.

Our students interested in propulsion and space environment area may also consider taking **ASTE 445 *Molecular Gas Dynamics***. Astronautics Professor Joseph Wang will teach this course in the Fall 2011, semester. Please remember that only two courses at the 400-level are counted towards MS ASTE. More information is on page 11.

See page 5 for the full list of the ASTE graduate courses offered in the summer and fall semesters 2011.

University of Southern California

Department of Astronautical Engineering (ASTE)

Astronautics Classes offered in the Fall 2011 semester

Core Requirements

ASTE 520 (3)	–	Spacecraft Systems Design	DEN-webcast
Instructor:		Prof. Mike Gruntman (USC)	
ASTE 535 (3)	–	Space Environments and SC Interactions	DEN-webcast
Instructor:		Dr. Kent W. Tobiska (Space Environment Techn.)	
ASTE 580 (3)	–	Orbital Mechanics I	DEN-webcast
Instructor:		Prof. Gerald Hintz (Aerospace Corp.)	
ASTE 470 (3)	–	Spacecraft Propulsion	DEN-webcast
Instructor:		Dr. Keith Goodfellow (Lockheed-Martin)	

Core Elective and Elective Requirements

ASTE 527 (3)	–	Space Studio Architecting	DEN-webcast
Instructor:		Madhu Thangavelu (AAA Visioneering)	
ASTE 553 (3)	–	Systems for Remote Sensing	DEN-webcast
Instructor:		Dr. Anthony Freeman and Dr. Kyle McDonald (JPL)	
ASTE 554 (3)	–	Spacecraft Sensors	DEN-webcast
Instructor:		Dr. Mohamed Abid (JPL)	
ASTE 599 (3)	–	Spacecraft Structural materials	DEN-webcast
Instructor:		Dr. Brett Williams (Raytheon)	
ASTE 599 (3)	–	Advanced Spacecraft Navigation and Control	DEN-webcast
Instructor:		Prof. Gerald Hintz et al (Aerospace Corp.)	

Mathematics Requirements

AME 525 (3)	–	Engineering Analysis	DEN-webcast
AME 526 (3)	–	Engineering Analytical Methods Analysis	DEN-webcast
CE 529a (3)	–	Finite Element Analysis	DEN-webcast
PHYS 510 (3)	–	Methods of Theoretical Physics	on-campus only

Astronautics Classes offered in the Summer 2011 semester

Mathematics Requirements

AME 525 (3)	–	Engineering Analysis	DEN-webcast
AME 526 (3)	–	Engineering Analytical Methods Analysis	DEN-webcast
CE 529a (3)	–	Finite Element Analysis	DEN-webcast

For more information on BS, MS, Engineer, and PhD degree and Graduate Certificate programs in Astronautical Engineering check the Program's web site (<http://astronautics.usc.edu>) or contact ASTE Student Affairs Ms. Marrietta Penoliar (tel. 213-821-4234; marriett@usc.edu). MS ASTE Frequently Asked Questions are at <http://astronauticsnow.com/msaste/>.

Preliminary Class Schedule (as of April 2011)

Astronautics (ASTE) Graduate Class Schedule

(subject to change – always check with *ASTE Student Affairs*)

				2010	2011	2011	2012	2012	2013	2013	2014
				Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
Core Requirement Courses											
ASTE 520	Spacecraft Design	2	D R	▼	▼	▼	▼	▼	▼	▼?	▼?
ASTE 535	Space Environment and Spacecraft Interactions	2	D R	▼	▼	▼	▼	▼	▼	▼	▼
ASTE 580	Orbital Mechanics I	2	D R	▼	▼	▼	▼	▼	▼	▼	▼
ASTE 470	Spacecraft Propulsion	1	D R	▼		▼		▼		▼	
Elective Courses											
ASTE 501a	Physical Gas Dynamics I	lr	N C			▼					
ASTE 501b	Physical Gas Dynamics II	lr	N C				?				
ASTE 523	Design Low Cost Sp Miss	1	D C		▼				▼		
ASTE 527	Space Studio Architecting	1	D C	▼		▼		▼		▼	
ASTE 541	Partially Ionized Plasmas	lr	N E								
ASTE 545	Comp. Techn in RGD	lr	N E								
ASTE 552	Spacecraft Thermal Cntrl.	#	D C				▼				▼
ASTE 553	Systems for Remote Sensing From Space	#	D C	▼		▼		▼		▼	
ASTE 554	Spacecraft Sensors	1	D C			▼		▼		▼	
ASTE 556	SC Structural Dynamics	#	D C	▼				▼			
ASTE 570	Liquid Rocket propulsion	#	D C		▼				▼		
ASTE 572	Advanced SC Propulsion	#	D C		▼		▼		▼		▼
ASTE 581	Orbital Mechanics II	1	N C		▼		▼		▼		▼
ASTE 583	Space Navigation	1	D C		▼			▼		▼	
ASTE 584	SC Power Systems	1	D C		▼		▼		▼		▼
ASTE 585	SC Attitude Control	lr	D C				▼ smmr		▼ smmr		
ASTE 586	SC Attitude Dynamics	#	D C		▼		▼		▼		▼
ASTE 599	SC Structural Materials	#	D E			▼				▼	
ASTE 599	Software Intensive Space Systems Engineering	#	D E	▼				▼			
ASTE 599	Special Topics	lr	D E			▼					
Mathematics Requirement – see next page											

- | | |
|---|--|
| <p>SC = spacecraft</p> <p>2 = course offered twice each year</p> <p>1 = course offered each year</p> <p># = course offered every second year</p> <p>lr = course offered irregularly</p> <p>▼ = planned (subject to Dean approval)</p> | <p>R = required MS ASTE</p> <p>C = core elective MS ASTE</p> <p>E = technical elective</p> <p>D = webcast through DEN</p> <p>N = on campus; not available through DEN</p> <p>? = uncertain, check with student affairs</p> |
|---|--|

The schedule of course offerings is subject to change.

Always check with *ASTE Student Affairs* when planning the class sequence.

Preliminary Class Schedule (as of April 2011)

Astronautics Graduate Class Schedule

(subject to change – always check with *ASTE Student Affairs*)

Mathematics Requirement				2010	2010	2011	2011	2011	2012	2012
				Smmr	Fall	Spring	Smmr	Fall	Spring	Smmr
AME 525	Engineering Analysis	3	D	O	▼	▼	▼	▼	▼	▼
AME 526	Engineering Analyt. Meth.	3	D	O	▼	▼	▼	▼	▼	▼
CE 529a	Finite Element Analysis	2	D	O	▼	▼	▼	▼	▼	▼
EE 517	Statistics for Engineers	1	D	O			▼		▼	
PHYS 510	Methods Theoret. Physics	1	N	O		▼		▼		

O = required option to choose one course for MS ASTE

3 = course offered three times each year

2 = course offered twice each year

1 = course offered each year

D = webcast through DEN

N = on campus; not available through DEN

▼ = planned offering

EE 517

Before registering for EE 517, please check directly with the instructor for course requirements. This course may require (1) live viewing of course lectures (no passive asynchronous viewing) by remote students; and (2) attending on campus (even if it would require transcontinental travel) at least one of the two (usually seven-hour) final-project sessions.

Note that other USC departments (not ASTE) offer these mathematics courses.

Please contact those departments directly regarding course schedules.

The schedule of course offerings is subject to change.

Fall 2011 ASTE 527

Space Studio Architecting

Topic: Future of Human Space Activity

It is clear that the government-funded human space exploration effort has hit the doldrums. Without adequate support from any constituency and a Congress dithering on issues of vital national importance, human spaceflight programs in the U.S. and elsewhere seem to have lost their momentum and mystique, and programs and projects are seeking a real reason to exist.

However, as we start to engage the private sector in earnest, commerce, the life blood of modern civilization, portrays human space exploration as it really is: a highly specialized and a very narrow subset of a much larger and more exciting endeavor: human space activity.

Using the experience gained by the completion of the International Space Station and commencement of this facility's utilization as a unique national laboratory in orbit, this studio will explore and create a variety of concepts that require human presence in space as we build up our space-based infrastructure on the way to becoming a truly space-faring species. The studio will focus especially on options for human space activity that are self-sustainable and commercially viable.

In the Fall Semester of 2011, **ASTE 527 Space Studio Architecting** will again enroll a few remote students through DEN. This studio course involves substantial student interaction and was available in the past to on-campus students only. Last year, we successfully enrolled remote students for the first time. Please note that enrollment in this course is limited (strictly enforced limit), so you will need to register early if you are interested.

For more information about the specific project in ASTE527 in Fall 2011, please contact directly the instructor,

Madhu Thangavelu at thangavelu-girardey@cox.net

Fall 2011 – New Course

ASTE-599 **Spacecraft Structural Strength and Materials**

Instructor:
Dr. R. Brett Williams, PE
Raytheon Space and Airborne Systems

This course provides an overview of the structural strength analysis tools and design concepts currently utilized by aerospace professionals who build flight hardware. Topics include structural design process, conceptual and configuration design, mass properties, stress analysis and failure prediction of structural components, fatigue and fracture, material selection, composite material analysis, and fastener design. An introduction to Finite Element software for strength analysis is also presented.

While the course is geared towards those without a structures background, (Astro, Aero, EE, Physics, Systems, Computer, etc.), mechanical engineers will also benefit from the discussion of actual space flight missions. All students who complete the course will be able to interact more productively with their structural team counterparts. Students will be graded on assigned homework, two examinations, and a short written report on an aerospace structural failure or design challenge of their choice.

This graduate course has no prerequisites. Its structural static analysis and materials selection focus complements ASTE 556 *Spacecraft Structural Dynamics*.

Instructor information:

Dr. R. Brett Williams is currently a Principal Mechanical Engineer in the Antenna Mechanical Engineering Department at Raytheon Space and Airborne Systems in El Segundo, CA. Previously, he was a Staff Engineer in the Instrument Engineering Section at the NASA Jet Propulsion Laboratory in Pasadena, CA.

More information: Dr. Brett Williams rbwillia@usc.edu

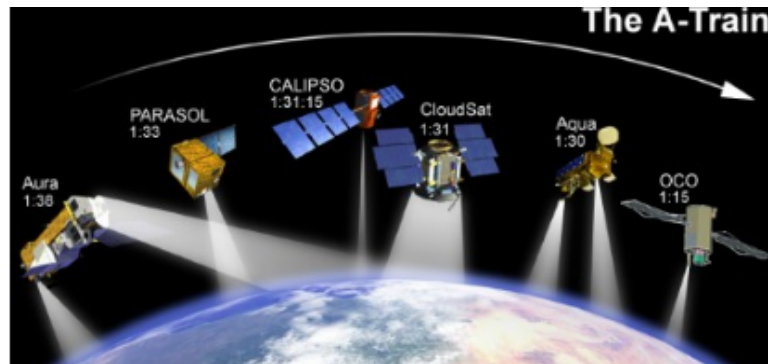
Fall 2011 – New Course

ASTE-599

Advanced Spacecraft Navigation and Control

Recommended Preparation: ASTE-580 and ASTE-583 or equivalent courses in Orbital Mechanics and Orbit Determination

Lecturers: Dr. Hintz, Dr. Chao, Dr. Lisano, Dr. Owen



Week	Topics*
1	Spacecraft Rendezvous and the (linearized) Clohessy-Wilshire Equations
2	Frozen/sun synchronous orbits and applications to past, current and future missions, mathematical background (review)
3	Seminar on Spacecraft Rendezvous and Frozen/Sun Synchronous Orbits
4	Dynamics and perturbation equations, stationkeeping strategies for GEO satellites, applications to communications satellites
5	ITU policies, need for GEO collocation, eccentricity and inclination separation method for GEO satellites
6	Formation and control of a cluster of GEO satellites, use of onboard GPS measurements
7	Seminar on Stationkeeping Strategies for a Single or Set of Collocated GEO Satellites
8	Formulation of the Sigma-Point Consider Filter, example comparison to a (linear) Extended Kalman Filter
9	Demonstration of use of filter for a consider covariance problem, application of nonlinear filter to in-flight thruster calibration campaign for NASA's Phoenix Mars Lander
10	Formulation of batch estimator, example comparison to a classical linear least squares estimator
11	Seminar on A Non-Linear Orbit and Attitude Determination Filter
12	Onboard Optical Navigation data type, complement to ground-based radiometric data types
13	Analytic geometry with vectors and matrices, geometric optics, CCD detectors
14	Image center-finding techniques
15	Seminar on Optical Navigation, A Complement to Ground-Based Radiometric Data Types
* ITU denotes International Telecommunications Union; GEO Geosynchronous Earth Orbit; GPS Global Positioning System; CCD Charge-Coupled Device	

More information: Professor Gerald R. Hintz ghintz@usc.edu

Fall 2011

ASTE 445

Molecular Gas Dynamics

(Revised and modernized)

Instructor: Prof. Joseph Wang, josephjw@usc.edu

Revised from the previous ASTE455 Molecular Gas Dynamics, this course is the first of a new 2-course sequence on the gas dynamics and plasma dynamics relevant to space engineering applications.

The revised ASTE455 presents an introduction to both compressible gas dynamics and rarefied gas dynamics. The materials covered will include governing equations of fluids; 1D compressible gas flow with applications on rocket nozzles; 2D compressible gas flow and supersonic aerodynamics; transition from continuum to rarefied gas dynamics; basic gas kinetic theory; rarefied gas-surface interactions; rarefied gas flow around spacecraft; collisions and transport; introduction to ionized gas and plasmas. The second course in this sequence will discuss plasma dynamics and magnetohydrodynamics.

This course is open to seniors and graduate students. Prerequisite: ASTE301a,b or introduction level fluid dynamics or equivalent.

Master of Science in Astronautical Engineering

Effective from Fall 2009

This degree is in the highly dynamic and technologically advanced area of astronautics and space technology. The program is designed for those with B.S. degrees in science and engineering who work or wish to work in the space sector of the defense/aerospace industry, government research and development centers and laboratories and academia. The program is available through the USC Distance Education Network (DEN).

The general portion of the Graduate Record Examinations (GRE) and two letters of recommendation are required.

Required courses: 27 units

CORE REQUIREMENT (12 units)			Units
ASET 470	Spacecraft Propulsion		3
ASTE 520	Spacecraft System Design		3
ASTE 535	Space Environment and Spacecraft Interactions		3
ASTE 580	Orbital Mechanics I		3

CORE ELECTIVE REQUIREMENT (6 units - choose two courses)			Units
ASTE 501ab	Physical Gas Dynamics		3-3
ASTE 523	Design of Low Cost Space Missions		3
ASTE 527	Space Studio Architecting		3
ASTE 552	Spacecraft Thermal Control		3
ASTE 553	Systems for Remote Sensing from Space		3
ASTE 554	Spacecraft Sensors		3
ASTE 556	Spacecraft Structural Dynamics		3
ASTE 570	Liquid Rocket Propulsion		3
ASTE 572	Advanced Spacecraft Propulsion		3
ASTE 581	Orbital Mechanics II		3
ASTE 583	Space Navigation: Principles and Practice		3
ASTE 584	Spacecraft Power Systems		3
ASTE 585	Spacecraft Attitude Control		3
ASTE 586	Spacecraft Attitude Dynamics		3

TECHNICAL ELECTIVE REQUIREMENT (6 Units)

Two 3-unit courses. Students are advised to select these two elective courses from the list of core electives or from other courses in astronautical engineering or from other science and engineering graduate courses, as approved by faculty advisor. No more than 3 units of directed research (ASTE 590) can be applied to the 27-unit requirement. New courses on emerging space technologies are often offered; consult the current semester's course offerings, particularly for ASTE 599 Special Topics.

ENGINEERING MATHEMATICS REQUIREMENT (3 UNITS)

One 3-unit course. Choose one from the following:

AME 525	Engineering Analysis	3
AME 526	Engineering Analytical Methods	3
CE 529a	Finite Element Analysis	3
EE 517	Statistics for Engineers	3
PHYS 510	Methods of Theoretical Physics	3

At least 21 units must be at the 500 or 600 level.

Areas of concentration:

Students choose core elective and technical elective courses that best meet their educational objectives. Students can also concentrate their studies in the desired areas by selecting corresponding core elective courses. Presently, ASTE faculty suggests the following areas of concentration:

Spacecraft propulsion	Choose two core electives from	
ASTE 501ab	Physical Gas Dynamics	3-3
ASTE 570	Liquid Rocket Propulsion	3
ASTE 572	Advanced Spacecraft Propulsion	3
ASTE 584	Spacecraft Power Systems	3
Spacecraft dynamics	Choose two core electives from	
ASTE 556	Spacecraft Structural Dynamics	3
ASTE 581	Orbital Mechanics II	3
ASTE 583	Space Navigation: Principles and Practice	3
ASTE 585	Spacecraft Attitude Control	3
ASTE 586	Spacecraft Attitude Dynamics	3
Space system design	Choose two core electives from	
ASTE 523	Design of Low Cost Space Missions	3
ASTE 527	Space Studio Architecting	3
(SAE 549 System Architecting I, 3 units, is also suggested as technical elective for this area of concentration.)		
Spacecraft systems	Choose two core electives from	
ASTE 552	Spacecraft Thermal Control	3
ASTE 553	Systems for Remote Sensing from Space	3
ASTE 554	Spacecraft Sensors	3
ASTE 584	Spacecraft Power Systems	3
Space applications	Choose two core electives from	
ASTE 527	Space Studio Architecting	3
ASTE 553	Systems for Remote Sensing from Space	3
ASTE 554	Spacecraft Sensors	3

Note to students:

Please note that tracks, or areas of specialization (concentration), within the program do not appear in transcripts or have separate post-codes. Faculty uses tracks in advising students on different routes to the degrees meeting their educational objectives. The tracks are usually listed in the catalog to help describe the program to prospective students.

Admission Requirements for Graduate Degrees in *Aeronautical Engineering* – Code ASTE

The Department of Aeronautical Engineering (ASTE) of the USC Viterbi School of Engineering offers degrees in **aeronautical engineering**, code **ASTE**. The admission to MS ASTE is based on the totality of applicant's record which includes GPA, GRE, and two letters of recommendation.

Required items:

	<u>Send To</u>
Application	Office of Grad. and Int'l Admission
Official Transcript(s)	Office of Grad. and Int'l Admission
General Record Exam	Office of Grad. and Int'l Admission
TOEFL (international students only)	Office of Grad. and Int'l Admission
Recommendation Letters	Office of Grad. and Int'l Admission

Application

All applications should be submitted on-line at <http://www.usc.edu/admission/graduate/apply/>

Official Transcript(s)

The University requires official transcripts from the accredited colleges or universities the applicant has attended. The MS Degree Program in Aeronautical Engineering (Code ASTE) requires a minimum GPA of 3.0.

General Record Exam

The Department of Aeronautical Engineering requires the general GRE. The GRE must be taken within five years of the application date. USC's ETS school code is 4852. Applicants taking the GRE should use this code to ensure official submission of test scores.

TOEFL (International Students only)

The University and the Viterbi School do not require TOEFL test results. However, if an international student takes the TOEFL test and earns a score of 600 or above on the paper test, or a 100 or above (with minimum of 20 on each section) of the internet-based test, he/she will be excused from taking the International Student Test of English, which is normally required of all foreign students when they arrive at USC to determine their level of English language proficiency. TOEFL test scores are valid for two years.

Recommendation Letters

Please provide two professional letters of reference (former instructors, supervisors, professional colleagues, advisors, etc.) to be filed through the on-line application process.

Mailing addresses, if needed

Office of Graduate and International Admission
University of Southern California
Los Angeles, CA 90089-0911

Department of Aeronautical Engineering
ASTE Graduate Program, 854 W. Downey Way
University of Southern California
Los Angeles, CA 90089-1192

Application deadline: 1 June for fall; 1 November for spring; 1 March for summer.

Please note that verification and processing of materials by the Office of Graduate and International Admission may take four to six weeks.

Transfer to Aeronautics Program and other Questions:

Please contact ASTE Senior Administrator Ms. Dell Cuason (RRB-225; tel. 213-821-5817; cuason@usc.edu) and visit <http://aeronautics.usc.edu>.

Student Transfer to Degrees in Astronautical Engineering – Code ASTE

The degrees in **astronautical engineering**, Code **ASTE**, are offered by the **Department of Astronautical Engineering (ASTE)** of the USC Viterbi School of Engineering.

Transfer Process – Engineering Students

The transfer to a program in Astronautical Engineering, Code ASTE, requires an engineering student to fill out a simple form (Form 4067, follows) and submit it to ASTE Student Affairs. After the student admission is approved by the MS ASTE Program Director (in his absence, by ASTD Chairman), the student returns the form to the Registrar's Office for processing.

Transfer Process – Non-Engineering Students

Transfer to a program in Astronautical Engineering, Code ASTE, requires a non-engineering student to file the USC application for graduate admission to the program in Astronautical Engineering. Processing of the application does not require re-submission of supporting documents (e.g., transcripts) that have been previously submitted to USC. Check with ASTD Student Affairs.

Restrictions

Transfer to a program in Astronautical Engineering, Code ASTE, cannot be requested during the first semester of student studies at USC.

Questions?

Please contact ASTE Senior Administrator Ms. Dell Cuason (RRB-225; tel. 213-821-5817; cuason@usc.edu) and visit <http://astronautics.usc.edu>.



CHANGE/ADDITION OF MAJOR, MINOR, OR DEGREE OBJECTIVE

Note: Graduate students use this form only when changing/adding major or degree objective within the same school.
(Education, Cinema, Policy, Planning and Development, Engineering, and Music)

INCOMPLETE FORMS WILL BE RETURNED TO THE STUDENT

Name _____

USCID Number _____

Signature _____ Date _____

University of Southern California
Office of the Registrar
University Park - MC 0912
Los Angeles, CA 90089-0912

Note: This form must be returned to the Office of the Registrar in the SAS Lobby, MC-0912. After updating, this form will be returned to the appropriate Department.

APPROVAL FROM APROPRIATE OFFICE OR DESIGNATED OFFICIAL REQUIRED

(Section 1)

COMPLETE THIS SECTION ONLY FOR CHANGING A MINOR, MAJOR, OR UNDECLARED STATUS					
Major to be Dropped	Minor (if any) to be Dropped	Degree Objective to be Dropped	School		
New Major	Major Post Code #	New Minor (if any)	Minor Code #	New Deg. Obj.	School
Approval Signature	Dept. Mail Code #	Date	Change Effective <input type="checkbox"/> Sp <input type="checkbox"/> Sum <input type="checkbox"/> Fall		
			Year		

(Section 2)

COMPLETE THIS SECTION ONLY FOR ADDING A MINOR, MAJOR, OR DEGREE OBJECTIVE				
Major to be added (if any)	Major Post Code #	Deg. Obj. to be added (if any)	School	Dept. Mail Code #
Minor to be added (if any)	Minor Code #	Dept. Mail Code #		
Approval Signature	Date	Change Effective <input type="checkbox"/> Sp <input type="checkbox"/> Sum <input type="checkbox"/> Fall		
		Year		

FOR AR&R OFFICE USE ONLY	
Date Completed _____	Completed by (Initials) _____

USC Astronautics Alumni, Students, Faculty, and Friends

[USC Master of Science in Astronautical Engineering: Overview](#) (video; 53 min)

[LinkedIn Group](#)

USC Astronautics Alumni, Students, Faculty, and Friends

The network of the **alumni, students, faculty, and friends** of the **USC Astronautics**, a rapidly growing program offering degrees in astronautical engineering. Hundreds of our alumni work in the leading American space companies and government research and development centers.

The true story ... Now it can be told

We welcome not only our **current and former students** with the degrees in **Astronautical Engineering** (or the old degree **Aerospace Engineering, Astronautics**), but also **all current and former USC students who took our space classes** and are part of the great space enterprise. **USC Astronautics** began as a space engineering specialization in the **Viterbi School of Engineering** of the **University of Southern California**. Today, it is an **independent space-focused Department of Astronautical Engineering** in the Viterbi School. ([Astronautics program history, focus, dynamics.](#)) Please check the [statistics](#) on the number of awarded degrees (about 40 MS degrees annually during the last four academic year) and program reach.



In addition, we welcome to USC-Astronautics LinkedIn group the **program friends, all those space professionals (space/defense industry, national labs and FFRDCs, government, academia, space advocates) who are interested in and support our program.**

Periodically, our group members post job offerings -- many will certainly find them useful.

Connect with your fellow Astro-Trojans. Ad Astra!