

M.S. Degree in Aerospace Engineering  
San Diego State University

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**1. What are the requirements for being accepted to the master's degree program for aerospace engineering?**

The minimum requirements for being admitted to the M.S program in Aerospace Engineering are:

1. You must have an undergraduate degree in Aerospace Engineering (or related discipline).
2. Your cumulative GPA from undergraduate course work must be 3.0 or higher.
3. You must have taken the GRE (Graduate Record Exam) and obtained scores (Verbal +Quantitative > 1000) and (Analytical writing > 3.0).
4. International students are also required to take the TOEFL/ ETS exam and have scores in the upper 75<sup>th</sup> or higher percentile.

**2. Is there financial support for M.S. degree seeking students?**

The aerospace program does not offer teaching assistantships to master's degree seeking students. However, there are a small number of graduate assistantships and grader positions. Check with the graduate advisor or the department administrator for grading positions before the start of each semester.

The graduate assistantships are for assisting faculty members on their funded research projects. Typically work done on such projects also constitutes part of the effort toward the student's thesis research. Since in the first few semesters the students are likely to be taking preparatory courses they are not hired to work on funded projects. Therefore graduate assistantships are usually awarded to students who have completed or close to finishing course work and have demonstrated an interest and skills needed to pursue research. Prior research experience and exemplary academic record will allow students to be considered for such awards at the beginning of their M.S. degree studies. Check with individual professors in your area of specialization on availability of such assistantships.

**3. I am interested in Aerospace Engineering program at SDSU. My undergraduate degree in mathematics (or physics or applied mathematics). Am I eligible to apply for the admission?**

Yes, you may apply to the M.S. degree program in aerospace engineering. You will be admitted conditionally if you satisfy the other admissions requirements. The conditions will be that you also complete required undergraduate level aerospace engineering courses first before enrolling for graduate courses. We have had a few students go through our master's program that started with a math degree. I expect this will take 2-3 semesters. If you a full time student (enrolling for 9 graduate credits every term), you can expect to graduate in about 3 years with a M.S. degree.

To be admitted to the master's program you will need to have a 3.0 GPA in the last 60 units of your undergraduate course work and have satisfactory scores on the GRE exam (in the upper 50th percentile).

**4. What pre-requisite undergraduate level courses must I complete if my undergraduate major was not aerospace engineering?**

You will need to meet with the graduate advisor to determine which courses to take. This will depend on the courses you have already done and also the specialization you plan to pursue for the M.S. degree.

Assuming you have no mechanics background the following are some courses you may have to take.

Preparatory Mechanics Courses

EM 200 Statics (Fall & Spring)  
EM 220 Dynamics (Fall & Spring)  
EM 340 Fluid Mechanics (Fall & Spring)  
Civ E 301 Mechanics of Materials (Fall & Spring)  
ME 352 Thermodynamics and Heat Transfer (Fall & Spring)

Introductory Aerospace Engineering Courses

AE 301 Low Speed Aerodynamics (Fall )  
AE 302 High Speed Aerodynamics (Spring)  
AE 310 Aerospace Structural Analysis ( Spring)  
AE 320 Aerospace Flight Mechanics (Fall)  
AE 440 Aircraft Stability and Control (Fall)

Intermediate level courses for Structural Mechanics Related Specialization in MS studies

AE 410 Aerospace Structural Dynamics (Fall)

Intermediate level courses for Aerodynamics Related Specialization in MS studies

AE 430 Aircraft Propulsion Systems (Fall)

\*\* Engineers with undergraduate degree in materials science wishing to pursue a MS in aerospace engineering (structural mechanics specialization) will only need to take the AE 310, AE 310 and AE 410 courses for prerequisite completion.

**5. I have a degree in liberal arts. I am now interested in pursuing a career in aerospace engineering. How can I pursue this goal?**

This question often gets asked to the graduate advisor because the California State University System does not allow a student to pursue a second undergraduate degree. Unfortunately without an undergraduate degree in aerospace engineering (or related field such as mechanical engineering, civil engineering, physics, applied mathematics) you will not be admitted to the graduate program. This should not discourage you. You can complete the undergraduate courses in aerospace engineering (you may skip the general education courses) by enrolling through for such courses at SDSU through the College of On completion of the required courses with an average GPA of 3.0 or above you may submit an application to the M.S. program. Remember to take the GRE exam and have scores forwarded to the university.

**6. Do I need recommendation letters for my application? If so is there a format in which it should be?**

Yes it is desirable to have recommendation letters from your former professors /instructors or job supervisors who can evaluate your skills and comment on your preparation, expertise, aptitude and motivation to succeed in your graduate studies. They can write their own letters or choose to use the standard forms.

[http://attila.sdsu.edu/~satchi/graduate/SDSU\\_letter\\_of\\_recommendation.doc](http://attila.sdsu.edu/~satchi/graduate/SDSU_letter_of_recommendation.doc)

[http://attila.sdsu.edu/~satchi/graduate/SDSU\\_letter\\_of\\_recommendation.pdf](http://attila.sdsu.edu/~satchi/graduate/SDSU_letter_of_recommendation.pdf)

**7. How many classes do I need to take to get a M.S. degree in aerospace engineering?**

To obtain a M.S degree in aerospace engineering you need to earn a total of 30 credits of graduate course work. Of the 30 credits no more than 9 credits of course work can be at either the 500 level or courses from a different department.

**8. What specializations do you offer for aerospace engineering master's degree? What courses will I take for these specializations?**

In the aerospace department you can choose between two specializations, aerodynamics or structural mechanics. The list of courses can be found in the [graduate bulletin](#). The aerodynamics related courses are listed under the aerospace

engineering (AE) and structural mechanics courses are listed under the engineering mechanics (EM) section. You need to take a minimum of three AE courses and one EM course at 600 level or higher for specialization in aerodynamics. You need to take a minimum of three EM courses and one AE course at 600 level or above for structural mechanics specialization. Preferably you take as many graduate courses (i.e. 600 level or above) as you can find in the area of your specialization. If there are not enough graduate courses for your area of specialization take a few lower division courses (500 level courses) in your area of specialization or look for courses outside your department that will help you in your area of specialization. Consult with your graduate advisor before taking courses at 500 level or outside the department. You cannot take more than three courses at either 500 level or outside your department.

**9. Should I choose a thesis option (Plan A) or comprehensive exam option (Plan B)?**

Research is an integral part of graduate education. For this reason the Thesis option (Plan A) is strongly recommended. The thesis research allows you to apply the material learned from courses to a new problem. It also gives you the experience to conduct literature review to understand the state of art in your area of research, advance the state of art, work on an open-ended problem and learn to present results from your work in written and oral format. Experience gained from a thesis is valuable for anyone planning to pursue a technical work in aerospace engineering for their career. The Plan B requires taking courses and an exit exam. This option should only be used in circumstances where your job already provides you with such research experience, and you are in the masters program to get some course work. [Click here for more information on the requirements for and benefits of Plan A and Plan B options.](#)

**10. When do I need to begin research if I choose Plan A?**

If you know what area you want to specialize in start as soon as possible on your research. Talk to professors in the department. Learn what projects they are working on and get involved. In the first year your progress on your research may be slow, since you will be taking courses. However, being involved some research will make course work more relevant. As you learn new topics you can see their relevance to your project. Knowing what topic you'd want to do your thesis research on also allows you to plan your course work suitably.

**11. How do I plan my course work? Do I need to fill out any forms for this?**

You officially will need to submit to Division of Graduate Affairs such a plan called the "Program of Study" after you have completed 12 units of course work. This is done online by the graduate advisor. However, you should have a tentative plan from day one. Meet with your advisor and discuss with him educational background (from undergraduate degree), your goals, your interests, time commitments etc. The graduate advisor in consultation with you and with the knowledge of course offerings in the department will be able to best advise you and create a tentative program of study to follow. When you choose an advisor for your thesis research (your thesis committee chair), review with him your tentative plan for course work. Your thesis advisor may have further input on the classes to take to help with your research.

**12. I am working full time. Will I be able to pursue a M.S. degree studies?**

Yes, you should be able to work on your MS degree while continuing to work. Our graduate program is designed to accommodate working engineers who may want to pursue an advanced degree. All our graduate course offerings are after 4:00 p.m. in the afternoon. However, to successfully complete your studies in a reasonable time you will need to have a strong commitment and allocate time for studying after the work day and on weekends. Although courses are offered after 4:00 p.m., most official businesses on campus are conducted during the day (8:00 am to 5:00 pm). So you will have to make arrangements occasionally to be on campus during regular business hours to take care of business such as paying fees, meeting advisors, working in laboratories, etc.