



## Graduate School of Engineering and Applied Sciences (GSEAS)

Department of Mechanical and Aerospace Engineering  
Space Systems Academic Group

https://nps.edu/web/mae  
https://nps.edu/web/ssag

### Curriculum 591 Space Systems Engineering

Course Matrix URL with JPME and Refresher Quarter (October 4, 2021)

Quarter	Course	Course	Course	Course	Course	Course
1 Su	<b>EC2440</b> (3-2) Introduction to Scientific Programming	<b>MA1115</b> (4-0) Multi Variable Calculus	<b>MA1116</b> (3-0) Vector Calculus	<b>PH1121</b> (4-2) Mechanics	<b>NW3230</b> (4-2) Strategy & War	<b>SS4000</b> (0-1) Space Systems Seminars
2 F	<b>MA2121</b> (4-0) Differential Equations	<b>AE2820</b> (3-2) Introduction to Spacecraft Structures	<b>ME2801</b> (3-2) Introduction to Control Systems	<b>PH1322</b> (4-2) Electromagnetism	<b>SS4000</b> (0-1) Space Systems Seminars	
3 W	<b>MA3046</b> (4-1) Matrix Analysis	<b>SS3500</b> (4-2) Orbital Mechanics and Launch Systems	<b>PH2514</b> (4-0) Introduction to the Space Environment	<b>NW3285</b> (4-0) Theater Security Decision Making	<b>SS4000</b> (0-1) Space Systems Seminars	
4 Sp	<b>AE3815</b> (3-2) Spacecraft Rotational Mechanics	<b>EO2525</b> (4-1) Probabilistic Analysis of Signals and Communication Sys	<b>PH3052</b> (4-0) Physics of Space and Airborne Sensor Systems	<b>SS4000</b> (0-1) Space Systems Seminars	<b>Degree Track Elective</b>	
5 Su	<b>EC3230</b> (3-1) Space Power and Radiation Effects	<b>EO3525</b> (4-1) Communications Engineering	<b>SS3051</b> (4-0) Military Applications of DoD & Commercial Space Sys	<b>SS4000</b> (0-1) Space Systems Seminars	<b>Degree Track Elective</b>	
6 F	<b>AE3818</b> (3-2) Spacecraft Attitude, Determination, and Control	<b>AE3851</b> (3-2) Spacecraft Propulsion	<b>SS3861</b> (2-4) Spacecraft Payload Design I	<b>SS1810</b> (0-1) Thesis Proposal Preparation	<b>SS4000</b> (0-1) Space Systems Seminars	<b>Degree Track Elective</b>
7 W	<b>AE3804</b> (3-2) Thermal Control of Spacecraft	<b>SS3001</b> (4-1) Military Applications of National Space Systems	<b>SS4861</b> (2-4) Spacecraft Payload Design II	<b>SS4000</b> (0-1) Space Systems Seminars	<b>Degree Track Elective</b>	
8 Sp	<b>AE0810</b> (0-8) Thesis Research	<b>AE4870</b> (4-0) Spacecraft Design and Integration I	<b>SS3101</b> (3-2) Ground Systems and Mission Operations	<b>SS4000</b> (0-1) Space Systems Seminars	<b>Degree Track Elective</b>	
9 Su	<b>AE0810</b> (0-8) Thesis Research	<b>AE4871</b> (2-4) Spacecraft Design and Integration II	<b>EO2701</b> (4-2) Introduction to Cyber Systems	<b>NW3275</b> (4-0) Joint Maritime Operations - part 1	<b>SS4000</b> (0-1) Space Systems Seminars	
10 F	<b>AE0810</b> (0-8) Thesis Research	<b>AE0810</b> (0-8) Thesis Research	<b>MN3331</b> (5-1) Principles of Acquisition and Program Mgmt	<b>NW3276</b> (2-2) Joint Maritime Operations - part 2	<b>SS4000</b> (0-1) Space Systems Seminars	

#### MS-AE Degree Track

##### Track Courses

**AE3811** (2-2) Space Systems Laboratory  
**AE3830** (3-2) Spacecraft Guidance & Control  
*Electives or other AE/ME 4XXX courses based on thesis research*  
**AE4818** (3-2) Acquisition, Tracking & Pointing of Military Spacecraft  
**AE4820** (3-2) Robotic Multibody Systems  
**AE4824** (3-2) Applications of Deep Learning for Military Systems  
**AE4850** (3-2) Astrodynamics Optimization  
**AE4860** (2-2) Space Control  
**AE4881** (2-4) Aerospace Trajectory Planning and Guidance

#### Legend

Preparatory Course

591 Core

Track Elective

JPME