Exploration Systems Design MS Accelerated Program Information and Application

This accelerated degree pairing is a great option for those who want to continue onto a master's degree and potentially complete it faster than a traditional degree. Students should be aware of the prerequisite courses listed below, as it might mean taking extra classes while you are an undergraduate student (in addition to the courses required for the accelerated degree). Students should also be aware that there is no guarantee that they will be able to finish the accelerated degree in 5 years. To learn more about the possible combinations of accelerated degrees and the prerequisites, please refer to the information below. Meet with your SESE academic advisor for more information. Once you are ready to apply, submit the application at the end of this document to seseforms@asu.edu .

The accelerated Exploration Systems Design, MS degree is available to students in the following degrees:

- Earth and Space BS (any concentration).
  - Students in the Earth and Space Exploration (Exploration Systems Design) BS degree should not do the ESD MS degree. Instead, they should do the ECEE accelerated degree.
- Electrical Engineering BSE (general or Electric Power & Energy Systems) degrees.

Pre-requisites must be taken prior to applying for the Exploration Systems Design MS degree. Students will need the following:

EEE 202 (Pre- or coreq(s): MAT 274 or 275 AND PHY 131, all with C or better)
SES 330 (Pre-req: EEE 202 AND MAE 201 or 212 AND PHY 131/132 or PHY 151, all with C or better)
SES 405 (Pre-req: MAT 266 or 271 AND PHY 121/122 or PHY 150, all with C or better)

Eligibility and BS Requirements for the accelerated master's programs

- 3.25 cumulative or major GPA and at least 90 credits completed required in order to be eligible for the 4+1 program.

Important information

- Shared: Shared classes are classes that will be used towards both your BS and MS degree. There is a limit on shared classes. You may have the opportunity to share 4 classes or a max of 12 credits between the BS and MS. Depending on your situation, there may not be room in the BS degree to share 12 credits. Students must be officially accepted to the accelerated program prior to their last semester of their undergraduate degree in order to be eligible to share credits.
- There is no guarantee that a student will finish the accelerated degree in 5 years.
- Reserved: Reserved classes are classes that you would take while you are an undergraduate student and reserve them for future use in the graduate program. These classes would not count towards your bachelor's degree. Reserved courses must have grades of "B" or better for use in a future graduate program and have been completed within 3 years.
- Shared + Reserved credit limit: No matter what, you cannot exceed a total of 12 credits of shared + reserved classes. For example, if you share three classes that are 3 credits each (total of 9 shared credits), you can reserve an additional class if it is also 3 credits.

If you are sharing three classes and at least one of them is 4 credits (so, you would be sharing 9-11 credits), you are not able to reserve a class since that would exceed 12 credits.

- If accelerated students are interested in taking a course that has both 494 and 598 sections, it is recommended that they take the 598 section.
- Students can take a max of 6 400-level credits during their undergraduate program to be shared with the graduate program.
- SES 410/411 or other culminating experiences (field GLG or Senior Thesis in lieu of capstone) cannot be shared between the BS and MS.
- Students cannot share SES 499 or 484 between BS and MS degree. However, if students have SES 499 or 484 that is extra, they might be able to reserve these credits to apply to the MS if there is a need for these credits in the MS and if they have not already exceeded their 6 credits of 400-level courses.

Application and Review Process:

- Speak to your undergraduate advisor about the program and necessary pre-requisites. Once you meet the eligibility requirements, you can submit the internal 'intent to pursue' accelerated degree application.
- The SESE accelerated program will review your application once complete, let you know if any edits need to be made, and how to register for the proper classes.
- Follow instructions from the SESE accelerated program coordinator and submit the online required application through Graduate Admissions (Application fee applies. Proof of English Proficiency might be required if you are an international student).

Intent to Pursue the Exploration Systems Design MS, Accelerated Master's Program

Name:
ASU ID Number:
Undergraduate major:
ASU Email address:
GPA:
Expected term and year of BS graduation:

Prerequisite courses:

MS Pre-req course	Pre-reqs for the MS pre-req course	Completion Semester
EEE 202	or coreq(s): MAT 274 or 275 AND PHY 131	
SES 330	EEE 202 AND MAE 201 or 212 AND PHY 131/132 or PHY 151	
SES 405	MAT 266 or 271 AND PHY 121/122 or PHY 150	

Exploration Systems Design, MS requirements

All ESD MS degrees take the following:

Required Core (5 credit hours)
SES 501 SESE Colloquium (1)
SES 502 Exploring SESE Research (1)
SES 510 Graduate Exploration Project I (3)

Electives or Research (13 credit hours) -This area is the most flexible for sharing credits between degrees if the BS degree allows it.

Culminating Experience (3 credit hours)
SES 511 Graduate Exploration Project II (3)

Students will choose from the following lists according to their chosen ESD concentration:

Instrumentation Concentration (9 credit hours)
AST 540 Astronomical Instrumentation and Data Analysis (3)
EEE 543 Antenna Analysis and Design (3)
EEE 545 Microwave Circuit Design (3)
EEE 548 Coherent Optics (3)
EGR 608 Advanced Simulation (3)
MAE 503 Finite Elements in Engineering (3)
MAE 557 Mechanics of Composite Materials (3)

Sensor Networks Concentration (9 credit hours)
CEN 571 Hardware Acceleration and FPGA Computing (3)
EEE 507 Multidimensional Signal Processing (3)
EEE 511 Artificial Neural Computation (3)
EEE 515 Machine Vision and Pattern Recognition (3)
EEE 551 Information Theory (3)
MAE 547 Modeling and Control of Robots (3)

Systems Engineering Concentration (9 credit hours)
EGR 530 Principles of Systems Engineering (3)
EGR 608 Advanced Simulation (3)
EGR 611 Complex Engineering Systems (3)
IEE 573 Reliability Engineering (3)
MAE 547 Modeling and Control of Robots (3)
MAE 557 Mechanics of Composite Materials (3)
MAE 565 Rocket Propulsion (3)
MAE 587 Radiation Heat Transfer (3)

ESD MS degree courses to be shared with BS/BSE degree. Max of 12 can be shared and/or reserved.

Course	Hours	Semester/Yr	Shared
List any reserved classes below			

Master's 10 classes required
(no more than 12 hours total of shared + reserved classes)

Course	Hours	Semester/Yr	Shared	Reserved

By submitting this application, I acknowledge that I have read the following statements and will abide by them:

- I understand that I must maintain continuous enrollment, which means that I will be registered every fall or spring semester while I am in the graduate program. This is a Graduate College Policy, and more information can be found here: https://graduate.asu.edu/key-policies
- I understand that I must submit my interactive plan of study (iPOS) in my first semester of my graduate program.
- I understand that I must maintain a 3.0 GPA (at least B average) in all of my graduate classes.

Student Signature Date

SESE Approval Date