

SMEAD AEROSPACE ENGINEERING SCIENCES
UNIVERSITY OF COLORADO BOULDER

PROSPECTIVE BAM STUDENT INFO SESSION

April 9, 2024
3:00pm - 4:00pm

AGENDA

BAM PROGRAM OVERVIEW

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What is BAM? What are the benefits? What options are there?

BAM PROGRAM LOGISTICS

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How BAM works, double-counting courses, etc.

RESOURCES

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Funding, Resource links, Contact Info

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BAM PROGRAM ADMISSIONS

Admissions requirements, how to apply, timeline, grad course enrollment

04

MASTER'S DEGREE OPTIONS

MS, ProMS, Focus Areas, Degree and Graduation Requirements

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Q & A

Time for you to ask any questions

01

BAM PROGRAM OVERVIEW

What is BAM? What are the benefits?
What options are there?

BAM!

WHAT IS THE BAM PROGRAM?

- **Receive a bachelor's and master's degree in a shorter period of time.**
- **Receive a master's degree at a lower cost.**
- **Short application. No GRE, no letters of recommendation, no application fee required.**
- **Continue working with your established faculty mentors.**

WHAT THE BAM PROGRAM IS NOT

- **The BAM Program is not a 5-year program**
 - For many students, their goal is to complete their MS in one year, but it is common for BAM students to spread it out over three semesters
 - You have 4 years to complete once you officially start as a graduate student
 - A summer course or two can be VERY helpful, but is optional
- **Is not an extension of *undergrad* advising and campus services**
 - You are entering the professional environment of graduate school
 - You are responsible for meeting all administrative deadlines
 - You are expected to use campus resources and problem-solve with minimal guidance and supervision
 - Campus resources are different for graduate students, so be aware of that

THERE ARE *TWO* AES-RELATED BAM PROGRAM OPTIONS YOU CAN CHOOSE FROM:

AES BS & MS BAM Program



- ***What this presentation is about!***
- Offered through the Smead AES department (ASEN)
- Master's of Science in Aerospace Engineering Sciences
- 3.50 GPA to apply

AES BS & ME BAM Program



- Offered through the Lockheed Martin Engineering Management Program (EMEN)
- Master's of Engineering in Engineering Management
- 3.00 GPA to apply
- Contact: emp@colorado.edu

The background of the slide is a dark space scene. On the right side, a large, reddish-brown planet with a textured surface is visible. Scattered throughout the dark space are numerous grey, rocky asteroids of various sizes. The overall lighting is dim, with the planet and asteroids providing the primary light sources.

02

BAM PROGRAM ADMISSIONS

Admissions requirements, how to apply,
timeline, grad course enrollment

AES BAM ADMISSION REQUIREMENTS

- **Be in the spring semester of your Junior year** (enrolling in Senor Projects I)
 - *Note: if pursuing an additional/double degree, you must apply in the spring before your final year when both degrees will be completed*
- **GPA requirements* as of June 30** (including spring semester of your junior year):
 - Have a **cumulative GPA of 3.50 or higher**
 - Have a **GPA of 3.50 or higher in ASEN coursework**
 - *ASEN coursework is any ASEN 2000-level course and above (excluding ASEN 3036 & 3046)*
- **Have no MAPS deficiencies**

**The AES BAM Program's only admission requirements are a 3.50 GPA or higher in both your cumulative and ASEN coursework—there is no rounding because of this.*

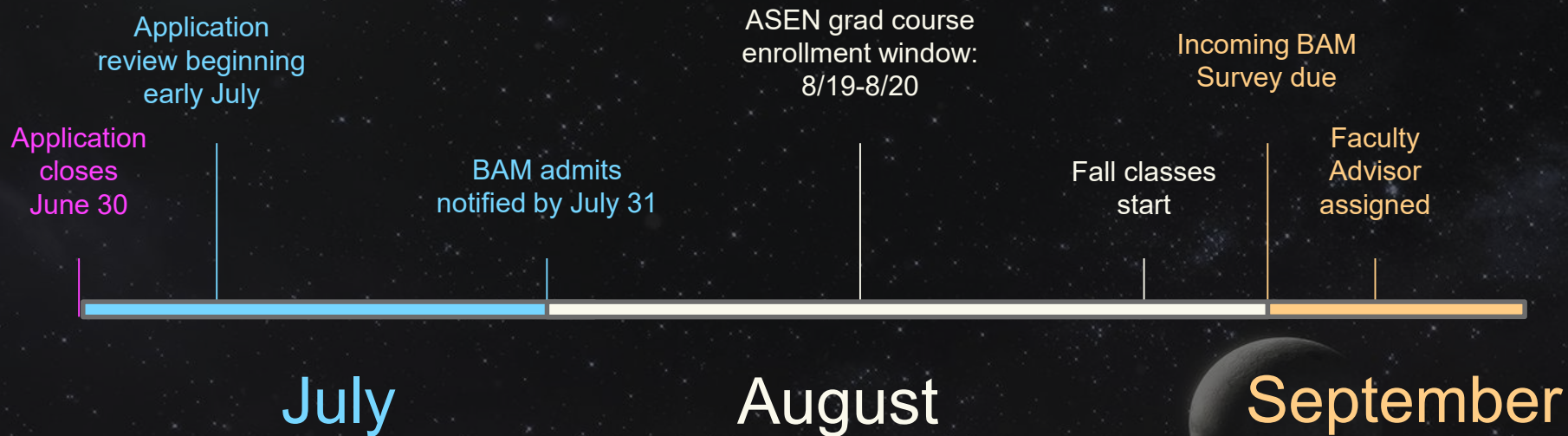
*If you **do not** meet the current BAM applicant requirements, you are encouraged to **apply via “regular” admissions to our MS degree** (or consider applying to the BAM BS-ME through Engineering Management).*

AES BAM PROGRAM APPLICATION PROCESS

- **April 30 - Application opens**
 - The application is called the "Intent Application to the BAM Program"
 - Click on the **Apply to the BAM Program** button on the [AES BAM Program page](#)
 - NOTE: AES does NOT require or accept any supporting documentation
- **June 30 - Application closes**
 - Late applications will be denied
 - Reviews start in early July and admission decisions will be sent by July 31
 - Please read comments/all materials upon receiving your decision information

Visit the [AES BAM Program page](#) for more information and a link to the application

TIMELINE FOR INCOMING UNDERGRADUATE BAM STUDENTS



ENROLLING IN GRADUATE-LEVEL COURSES FOR FALL SEMESTER

- **Newly admitted (over summer) BAM undergraduates:**
 - You will have access to self-enroll or waitlist in graduate-level ASEN courses beginning on **Monday, August 19 @ 12:01am**
 - Note that undergraduate enrollment closes from 6/13 – 8/18, **so be ready to enroll on 8/19!**
- **For all other (non-BAM) undergraduates:**
 - Email the instructor of the course requesting permission to enroll
 - Forward the instructor's permission email to aes-enrollment-help@colorado.edu with the following info:
 - Your **Student ID #, course number, and section number**
 - Our enrollment team will begin enrolling or waitlisting undergraduates in graduate courses on **Wednesday, August 21**

Upon admission to BAM / over summer before fall semester of senior year:

- Complete the **New Undergraduate BAM Student Survey – Fall 2024 by August 15**
 - **This survey confirms the following for the department & Graduate School:**
 - MS or ProMS degree
 - If MS, which Focus Area you want
 - If MS, which graduation option you plan to pursue (MS thesis, Graduate Projects I & II, Certificate, or Course-based option if AUT or FSM)
 - This survey will aid the department in assigning your faculty advisor
 - If you don't know which Focus Area you want at this time, still make a choice and know it can be changed any time while you are an undergraduate
 - You will re-confirm this information just before you start your graduate degree

Instructions will be included in BAM admission notification email

FUTURE PLANNING FOR INCOMING BAM UNDERGRADUATES

Early spring semester / January of senior year:

- The following forms must be submitted in the final semester of your undergraduate degree *prior to February 1*:
 - **Master's Continuation Form**
 - This form indicates which semester you plan to start your graduate degree
 - ❖ You must begin your graduate degree within three semesters of completing your BS
 - That would be the summer, fall, or spring semester immediately following when you graduated with your BS degree
 - **BAM Program Supplement Form**
 - This form indicates what courses you would like to double-count and/or have applied to only the master's degree

Instructions will be sent to you prior to the deadline

WHAT IF I DON'T GET INTO BAM OR MISSED
THE BAM APPLICATION DEADLINE?

APPLY FOR "REGULAR" GRADUATE ADMISSIONS TO AES

- **If you don't meet the BAM admission requirements or missed the BAM application deadline, we *strongly* encourage you to apply via this route!**
 - **Application opens July 1**
 - **Make sure you are aware of application deadlines**
 - **Fall Admission** – December 1 (*that's fall semester of senior year*)
 - **Spring Admission** – October 1
- **Requirements:**
 - Undergraduate degree in engineering and a competitive GPA
 - Statement of Purpose / personal statement
 - 3 letters of recommendation
 - Transcripts
 - Resume
 - Currently the GRE is NOT required/accepted for admission

Visit the [AES Graduate Admissions page](#) for more detailed admissions information

The background of the slide is a dark space scene featuring a large, reddish-brown planet on the right side, surrounded by numerous grey, rocky asteroids of various sizes scattered across the black void.

03

BAM PROGRAM LOGISTICS

How BAM works, double-counting courses,
etc.

You may take **up to and including 12 credit hours** while in the undergraduate program which can later be used toward the master's degree

- Of the 12 credit hours that can apply towards MS requirements, courses can either:

Double-count

and/or

MS-only

*Note this benefit of the BAM Program is optional (not required).

Not every student is able to fit in BAM-eligible courses during their BS degree.

Review the [AES BAM Program page](#) and the institutional [BAM Program Policy page](#) for more information

Double-counting:

- **Up to and including 6 credit hours may be double-counted** towards both the Bachelor's and Master's degrees
 - These courses would typically be some of your Technical Electives and/or if you are pursuing any Minor(s) – *i.e., anything part of your undergraduate “career”*
 - Thus, anything that is part of your undergraduate career would be considered **double-counting** course(s) and limited to 6 total credit hours (2 courses).

MS-only:

- Courses considered “extra” and *NOT* applying towards your BS degree or any Minor requirements (i.e., not applying to any undergraduate career requirements) are considered **MS-only** courses
- If *NOT* **double-counting** any courses, **up to all 12 credit hours / 4 courses would be considered MS-only** courses (not applying to any undergraduate career requirements)

APPLYING UNDERGRADUATE COURSEWORK TOWARDS GRADUATE DEGREE VIA BAM

An example of how this would look in your BS Degree Audit:

Double-counting courses will show up here (or in a Minor section) – Your undergrad advisor may need to edit your Degree Audit to ensure it looks correct.

**Note only 2 courses / 6 credit hours maximum in this section (and/or for any Minors)*

MS-only courses will show up here once enrolled in graduate courses – this section is **not** applying to BS degree requirements

Can have up to 4 courses / 12 credit hours here if **NOT double-counting any courses*



Professional Area Electives (15 hours) aka "Technical Electives"

Professional Area Electives are select 3000, 4000 and 5000-level math, science and engineering courses (with the exception of CSCI, ECEN, and PHYS where select 2000-level courses are also accepted).

FA20	CHEM3311	4.0	B+	Organic Chemistry 1 Approved Substitution
FA20	CHEM3321	1.0	B	Lab/Organic Chemistry 1 Approved Substitution
SP21	CHEM3331	4.0	A-	Organic Chemistry 2
SP21	CHEN4521	3.0	A	PChem for Engineers Course approved by dept. >>MATCHED AS: PEN ASEN PAE
FA22	ASTR3710	3.0	A	Form & Dyn of Planet Sys

Scroll further down in your Degree Audit to see this part



5000 Level Coursework

Advisor may apply courses according to program policy.

FA23	ASEN5158	3.0	A	Space Habitat Design
SP24	ASEN5016	3.0	***	Space Life Sciences
SP24	ASEN5148	3.0	***	Spacecraft Design

APPLYING UNDERGRADUATE COURSEWORK TOWARDS GRADUATE DEGREE VIA BAM

- For the **12 credit hours** allowed through the BAM program, you can consider:
 - **5000-level / graduate courses** in ASEN or other engineering, math, and science departments
 - You can also consider up to 6 credit hours taken at the **4000-level** in non-ASEN related engineering, math, and science departments (see Section 6.1 in the Graduate Student Handbook)
 - Departments allowed: APPM, ASTR, ATOC, CHEM, CHEN, CSCI, CVEN, CYBR, DTSC, ECEN, ENVD, GEOL, IPHY, MATH, MCDB, MCEN, PHYS, STAT
 - These 4000-level courses can be taken as an undergraduate or later as a graduate student
 - Meeting the graduate degree's math course requirement can be a great option while still an undergrad
- Visit the [AES BAM Program page](#) and review this table towards the bottom of the page (note the Focus Area tabs on the left)
 - Other graduate courses of interest can also be considered for enrollment, but if you have any questions or concerns regarding a course, reach out to the instructor

Recommended ASEN Graduate Courses (by Focus Area) *for BAM undergrads!*

Astrodynamics and Satellite Navigation (ASN)

Autonomous Systems (AUT)

Bioastronautics (BIA)

Fluids (FSM)

Structures and Materials (FSM)

Remote Sensing, Earth and Space Sciences (RSS)

MS Math Requirement

Astrodynamics and Satellite Navigation (ASN)

- 5010 - Attitude Dynamics and Control (Spring)
- 5050 - Astrodynamics *or* 5052 - Analytical Astrodynamics (Fall, Spring)
- 5044 - Statistical Estimation for Dynamical Systems (Spring)
- 5090 - Introduction to GNSS (Fall)

(i.e. any of the ASN core classes)

Keep in mind...

- These rules and conditions apply **ONLY** to active BAM students
 - Discontinuing the BAM Program *takes away* these conditions
 - Note that most institutions will **not** accept any credit used to meet *undergraduate* degree requirements (including Minors) as transfer credit to meet *graduate* degree requirements, **even if it is a graduate-level course**
 - Thus, if you wish to take something as an undergraduate to transfer to another institution's graduate program, you must ensure is it **NOT** being for any *undergraduate degree or Minor requirements*
 - Similarly, if you are in the BAM program and decide to instead pursue a PhD with us, your **double-counted** courses CANNOT BE USED towards PhD requirements – only courses **NOT** being used for any *undergraduate degree or Minor requirements are eligible (i.e., MS-only courses)*

BAM VS. “REGULAR” ADMISSIONS LOGISTICS SUMMARY

AES BAM Program:

- For BAM admissions, only cumulative and ASEN GPA considered
 - Very short application, no personal statement, no letters of recommendation accepted
- Up to 12 total credits / 4 courses can be used for MS degree
 - Of the 12 credit hours, 6 can double-count towards both BS and MS degree requirements

“Regular” admissions:

- For “regular” admissions, more holistic applicant review:
 - Entire GPA considered, personal statement, three letters of recommendation
- Up to 9 credit hours / 3 courses* can be used for MS degree *as long as*:
 - Courses are NOT used for BS degree or Minor requirements
 - Courses have a “B” or higher grade

**Other institutions will vary on the number of credits/courses that can transfer from BS career to a graduate degree and may have different minimum grade requirements, so always inquire if unsure*

04

MASTER'S DEGREE OPTIONS

MS, ProMS, Focus Areas, Degree and
Graduation Requirements

TWO OPTIONS FOR GRADUATE / MASTER'S DEGREE

You will choose *one* of these graduate degree options on the BAM Intent Application:

“Traditional” Master’s

MS

or

ProMS

Professional Master’s

*Be aware you are allowed to change to/from one degree option to the other *ONE TIME* after becoming a graduate student

MS AND PROMS COMMON DEGREE REQUIREMENTS

Both the MS and ProMS degrees require 30 total credit hours (10 courses)

- **Of the 30 total credit hours for both degrees:**
 - 24 credit hours / 8 courses must be at the 5000 level or above
 - 18 credit hours / 6 courses must be ASEN courses (EMEN 5405 counts as ASEN)
 - 3 credit hours / 1 course must meet the math requirement (see Appendix B in the [Graduate Student Handbook](#))
- **Remember:**
 - *Up to 6 credit hours / 2 courses can be at the 4000 level from approved departments*
 - *What you select to use for BAM (up to 12 credit hours) will contribute to the 30 required credit hours*
- **Grades must be a “B-” or higher to meet graduate degree requirements**
 - For courses going towards a certificate, grades must be a “B” or higher
 - Grades C+ and lower, Pass/Fail, and No Credit DO NOT count towards the graduate degree (but a letter grade will still impact your GPA)
- **Maintain a 3.0 cumulative GPA while a graduate student**

TRADITIONAL MASTER'S DEGREE (MS)

- **Must choose a *Focus Area*** (ASN, AUT, BIO, FSM, or RSESS) and complete Focus Area-specific curriculum
- **In addition, you will choose *one* of the options below to meet MS graduation requirements:**
 - **MS thesis**
 - **Graduate Projects I & II** courses
 - Complete a **certificate** – all certificate courses must be a “B” or higher
 - **Course-based option** (for AUT and FSM only)

FOCUS AREAS



Aerodynamics and Satellite Navigation (ASN)

Lead: Prof. Dennis Akos

Autonomous Systems (AUT)

Lead: Prof. Nisar Ahmed

Bioastronautics (BIO)

Lead: Prof. Jim Nability

Fluids, Structures, and Materials (FSM)

Lead, Fluids: Prof. Robyn Macdonald

Lead, Structures & Materials: Prof. Maryam Shakiba

Remote Sensing, Earth & Space Sciences (RSESS)

Lead: Prof. Sean Peters

PROFESSIONAL MASTER'S DEGREE (PROMS)



- **Designed for working professionals**
- **Highly customizable curriculum with no Focus Area-specific requirements**
 - Completion of Graduate Projects I & II courses or a Certificate is an *option* but *NOT* required
 - Thesis option *NOT* available
- **Different tuition structure**
 - See “Tuition & Fee Rate Sheets” for the ProMS options on the “Resources” slide of this presentation
- **ProMS students are eligible only for hourly or salary campus positions, not for TA or RA opportunities**
 - TF (Teaching Facilitator) positions are possible

FIND ALL THIS INFORMATION AND MORE IN THE GRADUATE STUDENT HANDBOOK



Graduate Student Handbook

2024 / 2025 Academic Year
Effective August 1, 2024

Ann & H. J. Smead Department of Aerospace Engineering Sciences
University of Colorado Boulder

The background of the slide features a large, dark planet with a reddish-brown hue, partially obscured by a dense field of grey, irregularly shaped asteroids of various sizes. The scene is set against a black space background with scattered white stars.

05

RESOURCES

Funding, Resource links, Contact Info

\$\$\$ FUNDING \$\$\$

- **Master's degrees are self-funded**

- Student is financially responsible for tuition and fees
- Funding could be via private funds, financial aid, fellowships or scholarships
- For more funding information, check out the following resources:
 - [AES Funding Your Master's/PhD page](#)
 - [Graduate School's Funding page](#)
 - [Office of Financial Aid's Aid for Graduate & Professional Students page](#)

- **Teaching/Course Facilitator (TF) opportunities:**

- Positions available for MS & ProMS students—**BAM students are in high demand!**
- Not all positions offer tuition waivers (rare for MS students), most are salary or hourly
- ProMS students can only take hourly/salary positions (like TF positions)
- Note that AES only offers TA positions to PhD students. Other departments may consider MS students for TA positions, so you can certainly inquire with them!

Department newsletters / announcements advertise opportunities for funding when available

TIPS AND ADVICE

~FROM PROF. HOLZINGER, FORMER ASSOC. CHAIR FOR GRADUATE STUDIES

Do

- Treat your coursework like a job!
- Take classes in what you're really interested in
- Take responsibility for your own learning & degree plan
- Schedule your work time carefully
- Make some friends!
- Take at least one full day off each week

Don't

- Assume this will be like the undergrad program
- Assume that faculty will spell everything out
- Work a job or research if you're taking 4 classes
- Related: try not to take 4 grad classes in one semester!
- Forget your sense of curiosity!

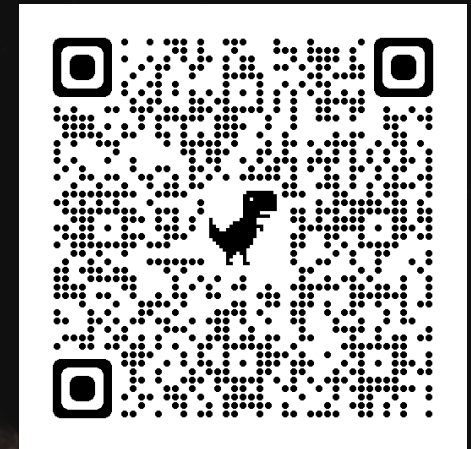
CONTACT INFO & OFFICE HOURS FOR BAM PROGRAM ADVISING

Best way to reach me is through email:

maureen.craig@colorado.edu

Office Hours for prospective BAM students:

- Graduate advisors use **MS Bookings** (not Buff Portal Advising) for scheduling appointments:
 - Maureen's appointment link:
 - [Click here to schedule an advising appointment](#)
 - In the "SELECT A SERVICE" section at the top, click either "Virtual/Zoom..." or "In-person (or Zoom)..." to view open appointment days and times. Click on the times that are available or select a different day on the calendar to view other availability. Click on the time and enter the required information to book the appointment.



RESOURCES

- [Aerospace Engineering's BAM Program \(BS & MS\) page](#)
- [Engineering Management's BAM Program \(BS & ME\) page](#) – *contact emp@colorado.edu for info*
- ["Regular" Admissions for Aerospace Engineering Graduate Programs page](#)
- [Graduate Student Handbook](#)
- [Graduate School Funding](#)
 - [Aid for Graduate & Professional Students](#)
 - [AES Funding Your Master's/PhD](#)
- [Tuition & Fee Rate Sheets \(2024/25 SY will be available after May 1\)](#)
 - Click on the most current academic year and scroll down to :
 - "Graduate" for MS
 - "Professional Masters" for ProMS
- BS graduation and BAM program required items
 - Will complete your final BS semester—instructions will be sent to you in January of senior year instructing you to:
 - [Apply to graduate in Buff Portal](#) (with your BS)
 - Submit [Master's Continuation form](#) (where you confirm when you will start your graduate program)
 - Submit [BAM Supplement form](#) (where you indicate the courses you will double-count and/or that are for the MS-only that you took as an undergraduate student)
- [Academic Calendar](#)

THANKS!

Does anyone have any questions?

maureen.craig@colorado.edu

Smead Aerospace Engineering Sciences

CREDITS: This presentation template was created by Slidesgo, including icons by Flaticon, and infographics & images by Freepik

MS Bookings link for appointment scheduling →

