

College of Engineering and Applied Science – BI Data Analytics & Systems Engineering

Engineering Academic Advising Hours:

Location: Main Hall 208

Hours: Monday–Friday: 9am-4pm Appointments Only (except Wednesday afternoons)

Drop-in Advising every Wednesday from 1pm-4:30pm

Call: (719) 255-3260

Website: www.uccs.edu/advising

General Academic Information

Academic Policies

It is the responsibility of each student to know and follow all Academic policies established by the University and the College of Letters, Arts & Sciences (LAS) that are set forth in the Catalog (catalog.uccs.edu).

Course Prerequisites

Students are responsible for knowing and completing all course prerequisites. Course prerequisites are strictly enforced for all classes at UCCS. **See your degree audit for specific course prerequisites.**

Restrictions and Limitations

Students must be admitted into the degree major in the College of Engineering and Applied Science at least 30 credit hours prior to graduation. Only three hours of Independent Study may count toward the degree. Work Experience/Military Science/ROTC credit will not apply toward fulfillment of the requirements for a degree from the College of Engineering.

Probation/Suspension

Students whose semester or cumulative GPA falls below 2.0 may be placed on probation for the next semester in which they are enrolled in the College of Engineering and Applied Science and will be notified by email. If, after that semester, the next semester or cumulative GPA is still below 2.0, the student may be suspended from the college. PLEASE NOTE: *While on probation, registration for the subsequent semester will be blocked until final grades are posted for the current semester. This is to verify that the minimum semester GPA for each student has been fulfilled.*

UCCS Bachelor of Science, Data Analytics & Systems Engineering

Major Degree Requirements

- A minimum of 128 hours must be completed with a cumulative CU grade point average of 2.0.
- The last 30 hours of the degree must be completed while registered in the College of Engineering and Applied Science at UCCS.
- Courses numbered below 1000 do not count towards degree completion.
- This guide is provided for student use only. It does not represent an official documentation of a student's progress towards completion of their degree program. The Engineering Education program requires a minimum 2.0 GPA in all

Engineering course work taken in order to graduate. Students must also complete an Exit Interview during their final semester to graduate.

Compass Curriculum

Compass Curriculum is the campus-wide general education program at UCCS. The Compass Curriculum has multiple components many of which will coincide with the degree requirements listed in this guide. Please visit the Compass Curriculum website at www.uccs.edu/compasscurriculum, review your degree audit, or check out the Compass Curriculum advising guide for specific course details. The required components are listed below and referenced in the guide.

REQUIRED COMPASS CURRICULUM COMPONENTS:

Component	Course
Gateway	GPS 1010
Explore – Arts, Humanities and Cultures	INOV 1010
Explore – Society, Behavior and Health	ENTP 1000
Explore – Physical and Natural World	PES 1110
Navigate	INOV 3010
Summit	ENTP 4500
Writing Intensive Course (WIC)¹ <i>Two courses with at least one upper-division (3000+ level).</i>	INOV 2010 INOV 3010
Inclusiveness¹	INOV 1010
Sustainability¹	ENTP 1000

¹ Can count towards other requirements within the Compass Curriculum or within a student's degree program.



Bachelor of Innovation, Data Analytics & Systems Engineering Degree

Department website: www.uccs.edu/eas

Degree Requirements	Courses			
DASE Required courses (27 hours) Additional Engineering Courses (10-12 hours) Pre-requisites will not be waived, plan sequences accordingly using electives to take pre-requisites when necessary.	Course Number	Course Title	Credit Hours	
	Engineering Foundations – Complete ENGR 3040 or CS 3050.			
	ENGR 3040 OR CS 3050	Engineering Ethics or Social and Ethical Implications of Computing	3 1	
	Programming Sequence Courses – Complete the courses listed below (9 hours):			
	CS 1150	Principles of Computer Science	3	
	CS 1450	Data Structures and Algorithms	3	
	CS 2060	Programming with C	3	
	Data Analytics & Systems Engineering Core Courses			
	CS 4720	Design and Analysis of Algorithms	3	
	CS 4770	Data Visualization	3	
	CS 4435 OR CS 4860	Data Mining Machine Learning	3 3	
	CS 4800	Computer Graphics	3	
	DASE 4000	Intro to Operations Research	3	
	DASE 4030	Intro to Systems Engineering	3	
	DASE 4570/ECE 5570	Optimization	3	
	DASE 4910	Design of Experiments	3	
	MAE 3342	Engineering Economy	3	
	Innovation Core (24 hours)	Innovation Core – Complete the following courses		
		ENTP 1000	Introduction to Entrepreneurship	3
		INOV 1010	The Innovation Process	3
BLAW 2010		Business and Intellectual Property Law	3	
INOV 2010		Innovation Team: Analyze and Report	3	
INOV 2100		Technical Writing, Proposals, and Presentations	3	
INOV 3010		Innovation Team: Research and Execute	3	
INOV 4010		Innovation Team: Design and Lead	3	
ENTP 4500		Entrepreneurship and Strategy	3	
Mathematics (24 hours)	Complete all of the following courses:			
	MATH 1350	Calculus I	4	
	MATH 1360	Calculus II	4	
	MATH 2150	Discrete Math	3	
	MATH 2350	Calculus III	4	
	CS 2300	Computational Linear Algebra	3	
	DASE 3400	Mathematical Modeling, Optimization, & Differential Equations	3	
	ECE 3610 OR MATH 3810	Engineering Probability and Statistics Introduction to Probability & Statistics	3	
Science (9 hours)	Complete all of the following courses (may substitute chemistry or biology for physics):			
	PES 1110	General Physics I – Calculus based (<i>co-req MATH 1350</i>)	4	
	PES 1120	General Physics II (<i>pre-req PES 1110, co-req MATH 1360</i>)	4	
	PES 1160	General Physics Lab (<i>co-req PES 1110</i>)	1	

Tech Electives (10 hours)	At least 10 hours should be completed. Sample topics listed below. 3000 level or higher courses unless approved by program director.			
		Non-linear programming		
		Queuing		
		Simulation		
		Time Series		
		Stochastics/Regression/Statistical Process Control options		
		Database Management		
		Supply Chain Management		
	Other existing areas in Engineering, Business, and Psychology			
Composition				
(3 hours)	<i>Complete ENGL 1310 and The English Writing Portfolio.</i>			
	ENGL 1310	Rhetoric & Writing I		3
	PORT 3000	Writing Portfolio Assessment		0
Compass Curriculum				
(3 hours)	GPS 1010	Gateway Program Seminar		3
	All other Compass Curriculum requirements are fulfilled by other required courses			
Cross-Discipline Core				
(15 hours)	Complete one of the Cross-Discipline Cores listed below. Each one consists of 15 credits hours. See the BI website for specific courses (innovation.uccs.edu)			
	Business			
	Creative Communication			
	Globalization			
Open Elective(s)				
(1-3 hours)	Complete open electives to fulfill the total hours requirement for the degree program. The chosen course(s) can be selected from any discipline but may not include any math course below MATH 1350. Only 3 credit hours of CS course work numbered below CS 1150 may count towards Electives. Some possible topics are listed below (or any Tech elective from above):			
	Queuing	Non-linear Programming	Simulation	Time Series

UCCS Four-Year Degree Plan – BI Data Analytics & Systems Engineering

The following four-year plan lists all the specific course requirements for the Bachelor of Science in Engineering Education degree at UCCS. The order in which these courses are taken may vary with course availability. **Students are responsible for completing all course prerequisites.** Please note that this is a *suggested* degree program; your program may vary.

Suggested First Year

FALL			SPRING		
√	Course	Hours	√	Course	Hours
	CS 1150	3		CS 1450	3
	ENGL 1310	3		INOV	3
	GPS 1010	3		MATH 1360	4
	MATH 1350	4		PES 1110/1160	5
	ENTP 1000	3			
	TOTAL	16		TOTAL	15

Suggested Second Year

FALL			SPRING		
√	Course	Hours	√	Course	Hours
	BLAW 2010	3		ECE 3610 (Spring Only) OR MATH 3810	3
	CS 2060	3		INOV 2010	3
	CS 2300	3		INOV 2100	3
	PES 1120	4		MATH 2150	3
	MATH 2350	4		Cross-Discipline Core Course	3
	TOTAL	17		TOTAL	15

Suggested Third Year

FALL			SPRING		
√	Course	Hours	√	Course	Hours
	CS 3050 OR ENGR 3040	1 3		CS 4435 OR CS 4860	3
	CS 4800	3		CS 4770	3
	DASE 3400	3		DASE 4910	3
	DASE 4000	3		INOV 3010	3
	Technical Elective	4		MAE 3342	3
				Cross-Discipline Core Course	3
				PORT 3000	0
	TOTAL	14-16 ¹		TOTAL	18

Suggested Fourth Year

FALL			SPRING		
√	Course	Hours	√	Course	Hours
	CS 4720	3		ENTP 4500	3
	DASE 4030	3		Technical Elective	3
	DASE 4570	3		Cross-Discipline Core Course	3
	INOV 4010	3		Cross-Discipline Core Course	3
	Technical Elective	3		Open Elective ¹	1-3 ¹
	Cross-Discipline Core Course	3			
	TOTAL	18		TOTAL	13-15 ¹

¹Hours will depend on course choice between CS 3050 and MAE 3040.