Bachelor of Science – Engineering: Mechatronics

Transfer Guide – Pikes Peak State College AES Students

Transferring to: Colorado State University Pueblo

Effective starting 2024

I. General Education Courses

	Credit Hours	PPSC Course Number and Title or gtPathways Category	CSU Pueblo Course (credits)
Written Communication	3	ENG 1021: English Composition I (GT-CO1)	ENG 101, 3 credits
Mathematics	5	MAT 2410: Calculus I (GT-MA1)	MATH 126, 5 cr
Arts & Humanities	3	One gtPathways Arts & Humanities course from (GT-AH1, GT-AH2, GT-AH3, or GT-AH4);	3 credits
Social & Behavioral Sciences	3	One gtPathways Social & Behavioral Science course (GT-SS1, GT-SS2, or GT-SS3)	3 credits
Natural & Physical Sciences	10	PHY 2111 – Physics I-Calculus Based with Lab (GT-SC1) PHY 2112 – Physics II-Calculus Based with Lab	PHYS 221/L, 5 credits PHYS 222/L, 5 credits
	24	**TOTAL GEN ED CREDITS**	**24**

II. Required Courses

Credit Hours	PPSC Course Number and Title	CSU Pueblo Course (credits)
5	MAT 2420– Calculus II (GT-MA1)	MATH 224, 5cr
4	MAT 2430 Calculus III (GT-MA1) OR MAT 2431 Calculus III with Engineering Apps	Fills requirement for MATH 337, 3cr
4	MAT 2560– Differential Equations (GT-MA1) OR MAT 2540: Linear Algebra OR MAT 2562 Differential Equations with Linear Algebra	Fills requirement for MATH 207, 3cr
5	CHE 1111 – Gen Chemistry I with Lab (GT-SC1)	CHEM 121/L, 5cr
3	EGT 1110 Intro Design/Engineering Apps OR EGG 1040 - Engineering Projects	Fills requirement for EN 101, 3cr
4	EGG 1060 Engineering Computing (MATLAB)	EN 103, 3cr
3	EGG 2011 Engineering Mechanics I - Statics	EN 211, 3cr
3	EGG 2012 Engineering Mechanics II - Dynamics	EN 212, 3cr
4	EGG 2041 Circuit Analysis I w/Lab	EN 231/L, 5 cr
3	CAD 2455 SolidWORKS/Mechanical	EN 107, 2cr
38	**Total Required Courses**	**35 credits**

III. Electives- choose one

PPSC	Course Title	CSU Pueblo Courses (credits)
CSC 1019	Intro to Programming 3cr	Technical elective 3cr
CSC 1060	Computer Science I 4cr	
ELT 2252	Motors & Controls 3cr	
ELT 2361	Microprocessors 3cr	
ELT 2367	Intro to Robotics 3cr	
ELT 2368	Robotics Technologies 3cr	
CHE 1112	Gen Chemistry II with Lab 5cr	
	TOTAL ELECTIVE COURSES CREDITS	**3cr**

65	**TOTAL ASSOCIATE'S DEGREE CREDITS**

ASSOCIATE OF ENGINEERING SCIENCE DEGREE REQUIREMENTS:
Students should note that all required courses must be satisfactorily completed as part of the AES degree at the community college and will also transfer and apply to the bachelor's degree requirements at the receiving 4- year institution. However, if you're going to transfer before completing the AES degree, you may not need some of these courses. In that case, check with the receiving institution and an advisor for your options.

GUARANTEES & LIMITATIONS

1. **Completion of Associate's Degree:** This transfer guide identifies the courses a student needs to complete (with a C- or higher) to earn an AES degree at a Colorado community/junior college in order to be able to finish the designated baccalaureate degree. Per Colorado Commission on Higher Education (CCHE) Policy I, L, students who complete an AES degree at a Colorado community/junior college and who are admitted to a Colorado public baccalaureate institution are guaranteed the following: the full transfer and application of a minimum of 64 credits toward the baccalaureate degree requirements at the Colorado institution of higher education; and junior standing. Course credit may be applied to major, elective or other requirements at the receiving institution's discretion. If more than 64 college-level credits are taken or the student gets lower than a C- in one or more courses at the community/junior college, then some loss of transfer credit may occur, and students may not be able to complete this baccalaureate degree in 135 credits.

2. **Transfer Before Completing the Associate's Degree:** If the student intends to transfer prior to completing an AES degree, this transfer guide should still be used to identify the courses that can most effectively prepare them for efficiently completing the designated major at the baccalaureate institution to which they are transferring. While not completing the required associate's degree eliminates the guarantees described here, gtPathways general education courses identified in Section I are guaranteed to transfer and apply to the receiving institution's gtPathways lower division general education requirements. Students are strongly encouraged to finish course sequences (such as English Comp I & II or Calculus I, II & III) before transferring when possible.

For additional information on CCHE transfer policies and gtPathways guaranteed transfer of general education credit, visit http://highered.colorado.gov/Academics/Transfers/Students.html. To file a transfer-related complaint with the Colorado Department of Higher Education, visit http://highered.colorado.gov/Academics/Complaints/default.html

The chart shown below illustrates the remaining requirements to complete the BS: Engineering Mechatronics after transferring AES to CSU Pueblo. 64 semester credits are the maximum amount of transfer credit allowed from two-year institutions. Therefore, the credits shown below ***MUST*** be completed at CSU Pueblo.

IV. General Ed completion*

Written Communication	ENG 102: English Composition II (or other GT- CO2)	3
Humanities	CID 103: Speaking & Listening AND One gtPathways Arts & Humanities (GT-AH1, GT-AH2, GT-AH3, or GT-AH4)	3 3
Social & Behavioral Science	One gtPathways Social & Behavioral Science course (GT-SS1, GT-SS2, or GT-SS3)	3
History	One gtPathways History course (GT-HI1)	3
	Total credits	**15**

***One gen ed course must have cross cultural designation (CC). see CSU Pueblo catalog.

V. Additional Major Required Courses

EN 260	Basic Electronics	3
EN 263	Electromechanical Devices	3
EN 321	Thermodynamics	3
EN 324/L	Materials Science and Engineering with Lab	4
EN 343	Engineering Economy	3
EN 360/L	Control Systems I with Lab	3
EN 361/L	Digital Electronics with Lab	4
EN 362/L	Introduction to Mechatronics with Lab	3
EN 363/L	Virtual Machine Design with Lab	3
EN 375	Stochastic Systems Engineering	3
EN 430	Project Planning and Control	3
EN 441/L	Engineering of Manufacturing Processes with Lab	4
EN 443	Quality Control and Reliability	3
EN 460/L	Control Systems II with Lab	3
EN 462/L	Industrial Robotics with Lab	3
EN 473/L	Computer Integrated Manufacturing with Lab	3
EN 486	Senior Seminar	2
EN 487	Engineering Design	3
Total Transfer Credit Applied Toward BS Degree		**65**
General Education completion for BS		**15**
Additional Major Credit Required for BS Degree		**56**
Total BS Degree Requirements		**136**