

2021-2022 University of Wyoming College of Engineering Block Transfer for
Laramie County Community College students with an
earned Associate of Science degree in Engineering Science
UW Program: Bachelor of Science in Mechanical Engineering

This block transfer guide awards credit toward completion of the University of Wyoming's (UW) University Studies Program (USP) and specified pre-requisite courses for the College of Engineering major in Mechanical Engineering. With this policy, transfer students with a qualifying Associate of Science degree with a major in Engineering Science from Laramie County Community College (LCCC) will be eligible to apply to transfer into the specified bachelor's degree program, ready to complete the remainder of their program at UW, allowing them to potentially graduate from the university in two years (four semesters).

Students should complete a minimum of 60 credits through their associate degree coursework. Students should work closely with their academic adviser to plan their course of study to ensure that they complete the AS degree as quickly as possible. Students should be prepared to take classes during the summers.

Block 1: USP Requirements

Courses taken to satisfy General Education requirements at LCCC may not be specifically listed in this document, but they are considered essential to prepare the student for entry into the Bachelor of Science degree program at UW. Because of the quality of that foundation, students entering UW who have completed a qualifying AA, AS, AB, or ADN from LCCC receive credit toward completion of the majority of USP requirements.

Wyoming Community College (WYCC) students entering UW as of Fall 2001 who have completed an AA, AS, AB, or ADN degree from a WYCC are awarded the lower division general education requirements included in the USP, with the understanding that they have already successfully completed the statutory requirement for US/WY Government & Constitution requirement as part of the WYCC degree. All students must complete upper division writing (USP category C3) at UW.

All students must successfully complete:

USP: FYS – Students transferring with a qualifying earned associate degree earned after completing high school will have USP: FYS waived.

USP: V – All students must take a course that satisfies the statutory requirement for US/WY Government & Constitutions. Students should select a course at LCCC that will satisfy this requirement at both institutions.

USP: C3 – Communications 3, which is the upper division writing requirement.

For more information about USP, please refer to <https://www.uwyo.edu/usp/>.

Block 2: Pre-Transfer Prerequisite Courses (11 courses required)

All ES and MATH courses must be completed with a grade of C- or better.

UW Course	LCCC Equivalent	Credits
MATH 2200 Calculus I	MATH 2200 Calculus I	4
MATH 2205 Calculus II	MATH 2205 Calculus II	4
MATH 2210 Calculus III	MATH 2210 Calculus III	4
MATH 2310 Applied Differential Equations	MATH 2310 Applied Differential Equations	3
CHEM 1020 General Chemistry I	CHEM 1020 General Chemistry I	4
PHYS 1220 Engineering Physics II	PHYS 1320 College Physics II	4
ES 1060 Intro to Engineering	ES 1060 Intro to Engineering	3
ES 2110 Statics	ES 2110 Statics	3
ES 2120 Dynamics	ES 2120 Dynamics	3
ES 2210 Electric Circuit Analysis (3cr)	ES 2210 Electric Circuit Analysis (4cr)	
ES 2410 Mechanics of Materials	ES 2410 Mechanics of Materials	3

Block 3: Required Non-Engineering Courses

These courses may be completed either at LCCC or at UW.

The scheduling of any of these courses should be decided with the assistance of the student's academic adviser.

UW Course	LCCC Equivalent	Credits
Natural Science Elective: CHEM 1030 General Chemistry II <i>Students may also take the following Physics courses, but they are not offered at LCCC: PHYS 2310 Physics III: Waves & Optics or PHYS 2320 Physics IV: Modern Physics</i>	CHEM 1030 General Chemistry II	4
Math/Science Elective	BIOL 1010 General Biology	4
Business Elective	(Various; consult with academic adviser to see the approved list)	3
Technical Elective	(Choose from any engineering, math/science, or business elective approved by the ME department – addendum attached that details the approved electives as of May 2021.)	3
USP: C3 Course	Satisfies USP: C3; minimum grade: C	3

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Block 4: Mechanical Engineering Major

Mechanical Engineering is an ABET-accredited undergraduate degree offering by the Department of Mechanical Engineering. Mechanical Engineering is the broadest area of study in engineering. In contrast to other engineering disciplines, mechanical engineers are employed in significant percentages in almost all industrial and governmental organizations that employ engineers. The spectrum of activities in which mechanical engineers are engaged continues to expand. The curriculum has in turn become flexible to allow for the education of mechanical engineering students in many diverse and allied areas, or for graduate school preparation.

UW College of Engineering Requirements:

- A minimum of 131 credit hours is required.
- A minimum overall GPA of 2.000 is required. Degree candidates must have an average GPA of 2.0 in Mechanical and/or Energy Systems engineering courses completed at UW. A grade of C- or better must be earned in all engineering science (ES) and required mathematics courses.
- The Mechanical Engineering major requires a minimum of 48 hours of upper division coursework (30 credits of which must be earned at UW), so elective courses should be chosen appropriately.
- Before enrolling in any upper division ME courses, students must complete the ME/ESE Success Curriculum (3.000 GPA in MATH 2200, MATH 2205, MATH 2210, ES 1060, ES 2110, ES 2120, ES 2210, ES 2310, ES 2330, and ES 2410).
- Graduates must meet all college requirements and earn a minimum GPA of 2.000 in ME courses taken at UW.
- In general, transfer of coursework towards a Mechanical Engineering degree will follow University of Wyoming policy. Courses must be shown to be equivalent to its UW course (latitude may be given for ME electives without a direct University of Wyoming equivalent).
- Six courses are considered to be the core of the Mechanical Engineering program, and therefore cannot be transferred from another institution: ME 3010, ME 3020, ME 3040, ME 3170, ME 3360, and ME 3450. Exceptions may be made for courses from approved study abroad programs or in extreme circumstances. Please note that failing a prerequisite course resulting in a delay of graduation does not constitute an extreme circumstance.
- Any transfer of ME courses requires explicit written approval from the Department.

University of Wyoming Requirements (see http://www.uwyo.edu/registrar/university_catalog/grad.html):

- Students may not take a course for S/U credit to satisfy any requirement, unless the course is offered for S/U credit only.
- A grade of C or above is required for University Studies Program (USP) FY, C1, C2, and C3.
- University Studies Program (USP), Human Culture (H) and Physical & Natural World (PN) courses must be taken outside of the major subject but may be cross-listed with the major.
- No more than 4 semester hours of credit in physical activity courses can count toward the bachelor's degree.
- The UW Office of the Registrar provides final confirmation/approval of degree completion requirements prior to the awarding of any degree.

UW Course	Notes	Credits
ES 2310 Thermodynamics I	<i>Students should take this course at UW the summer AFTER completing their AS degree and BEFORE starting at UW.</i>	3
ES 2330 Fluid Dynamics	<i>Students should take this course at UW the summer AFTER completing their AS degree and BEFORE starting at UW.</i>	3
EE 2800 Problems In:	Speak with your adviser before registering for this course.	3
ME 3005 Engineering Exp		3
ME 3010 Intermediate Mechanical Materials	<i>Must be taken at UW</i>	3
ME 3020 System Dynamics	<i>Must be taken at UW</i>	3
ME 3040 Thermodynamics II	<i>Must be taken at UW</i>	3
ME 3060 Numerical Methods for Engineering		3
ME 3160 Thermal/Fluid Lab		3
ME 3170 Machine Design	<i>Must be taken at UW</i>	3
ME 3360 Transport Phenomena	<i>Must be taken at UW</i>	3
ME 3450 Properties of Materials	<i>Must be taken at UW</i>	3
ME 4060 System Design I		3
ME 4150 Mech Behavior of Materials		3
ME Electives (<i>four (4) courses required</i>)	Select any four ME courses or EE 4620	12
ME 4070 Systems Design II		3

Block 5: Credits to meet 131 credits minimum (credit type and number of credits needed will vary by student)

The University of Wyoming requires a total of 131 credits for the Bachelor of Science with a major in Mechanical Engineering. This must consist of a minimum of 42 upper division credits, 30 of which must be earned "in residence" at UW. College-level courses that were completed successfully at LCCC that are not specifically listed in this guide will also be transferred and counted toward the total credit required for the BS degree in accordance with UW transfer policy.

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ADDENDUM: Sample 4-Year Sequence by Term

This addendum is a sample plan of study; it is not intended to be used in place of academic advising.

First Fall Semester at LCCC (Assuming student must take MATH 1400 as a prerequisite course)

Course	Title	Satisfies	Credits	Notes
STRT 1000	Strategies for Success	Student Success	3	
MATH 1400	College Algebra	Quantitative Literacy	3	
CHEM 1020	General Chemistry I	Natural Sciences	4	
ES 1060	Intro to Engineering	Major	3	

First Spring Semester at LCCC

Course	Title	Satisfies	Credits	Notes
General Education	Select Course	Human Society & the Individual	3	<i>Course must satisfy USP: V at UW</i>
General Education	Select Course	Written Communication	3	<i>Most students take ENGL 1010</i>
MATH 1405	Trigonometry	Quantitative Literacy	3	
BIOL 1010	General Biology	Natural Science	4	
General Education	Select Course	Creative Expression	3	

First Summer at LCCC (only necessary for students who have not yet taken Calculus)

Course	Title	Satisfies	Credits	Notes
MATH 2200	Calculus I	Quantitative Literacy	4	<i>Calculus I must be completed successfully before the student's second Fall term at LCCC.</i>

Second Fall Semester at LCCC

Course	Title	Satisfies	Credits	Notes
ES 2110	Statics	Major	3	
ES 2210	Electric Circuit Analysis	Major	3	
MATH 2205	Calculus II	Major	4	
General Education	Select Course	Oral Communication	3	<i>Most students take COMM 2010</i>
General Education	Select Course	Human Cultures	3	

Second Spring at LCCC (students should graduate at the end of this term)

Course	Title	Satisfies	Credits	Notes
ES 2120	Dynamics	Major	3	
ES 2410	Mechanics of Materials	Major	3	
MATH 2210	Calculus III	Major	4	
MATH 2310	Applied Differential Equations	Major	3	
PHYS 1320	College Physics II	Major	4	

RECOMMENDED Second Summer (Take at UW; if student does not take these courses in the summer between finishing at LCCC and starting at UW, will have to take the courses at UW at a later time.)

Course	Title	Satisfies	Credits	Notes
ES 2310	Thermodynamics	UW Program	3	Required for the major at UW
ES 2330	Fluid Dynamics	UW Program	3	Required for the major at UW

* The Engineering program at LCCC may take longer than two years for students whose initial mathematics course is not MATH 2200 (Calculus I) due to the prerequisites of the mathematics courses. Students should enroll in the highest-level math course for which they qualify. Starting in a course above MATH 1400 will reduce the credit hours needed to complete this degree, and not require a summer semester. Students should work closely with their Advising Team.

See page 4 for the example course sequence at UW.

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First Fall Semester at UW (18 credits)

Course	Title	Satisfies	Credits	Notes
ME 3005	Engineering Exp	Major	3	
ME 3010	Intermediate Mechanical Materials	Major	3	
ME 3020	System Dynamics	Major	3	
ME 3040	Thermodynamics II	Major	3	
ME 3060	Numerical Methods for Engineering	Major	3	
M/S Elective		Major	3	Select course in consultation with Adviser

First Spring Semester at UW (19 credits)

Course	Title	Satisfies	Credits	Notes
ME 3160	Thermal/Fluid Lab	Major	3	
ME 3170	Machine Design	Major	3	
ME 3360	Transport Phenomena	Major	3	
ME 3450	Properties of Materials	Major	3	
EE 2800	Problems In:	Major	3	<i>Speak with your adviser before taking this course.</i>
Science Elective: CHEM 1030 <i>or</i> PHYS 2310 <i>or</i> PHYS 2320	General Chemistry II <i>or</i> Waves & Optics <i>or</i> Modern Physics	Major	4	<i>Students who do not need to take MATH 1400 and/or MATH 1405 may choose to take this science requirement prior to transferring (if available).</i>

Second Fall Semester at UW (15 credits)

By the end of this term, students must contact the Office of the Registrar regarding degree completion/graduation.

Course	Title	Satisfies	Credits	Notes
ME 4060	System Design I	Major	3	
ME 4150	Mech Behavior of Materials	Major	3	
ME Elective		Major	3	Select course in consultation with Adviser
ME Elective		Major	3	Select course in consultation with Adviser
<i>Various</i>		USP C3 Course	3	Select course in consultation with Adviser

Second Spring at UW (students should graduate at the end of this term) (15 credits)

Course	Title	Satisfies	Credits	Notes
ME 4070	Systems Design II	Major	3	
ME Elective		Major	3	Select course in consultation with Adviser
ME Elective		Major	3	Select course in consultation with Adviser
Business Elective		Major	3	Select course in consultation with Adviser
Technical Elective		Major	3	Select course in consultation with Adviser

A list of Mechanical Engineering, Business, Mathematics, Science, and Technical Electives as of spring 2021 are attached as an addendum (pages 5-6 of this document); students should confirm that a course is still an acceptable elective prior to registering.

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ADDENDUM: Approved Electives

Electives are governed by the approved list in effect at the time course is taken. Students should check the current list before enrolling in a course to confirm the course is an approved elective. This list is constantly being updated; check with UW College of Engineering Advising at ceas-advising@uwyo.edu for an updated list.

ME Technical Elective: Must have prior approval of the adviser. May be chosen from any engineering, mathematics, science or approved business discipline, including COSC courses except COSC 1010, 1015, 1101, or 1200, ARE 3030 History of Architecture

ESE Technical Electives – Choose 4 from: EE/ES 2800, PETE 2050, GEOL 4190, ARE/ME 3400, CE 3400, CE 4430 (cross-listed with CHE/ENR 4430), ME 3450, ME 4340, ME 4470, ME 4430, ME 4460 (cross-listed with ESE 4460), ESE 4330 (cross-listed with ME 4330), ESE 4455

Business Electives

⊕ LCCC business courses that are approved to transfer as upper division courses at UW are evaluated and updated annually; students must confirm equivalency prior to registering.

UW Course	LCCC Equivalent	Credits
ACCT 2010 Principles of Accounting I	ACCT 2010 Principles of Accounting I	3
ACCT 2020 Principles of Accounting II	ACCT 2020 Principles of Accounting II	3
ACCT 2110 Managerial Accounting	Must be taken at UW	3
DSCI 3210 Production & Operations Management	DSCI 2210 Production & Operations Management ⊕	3
DSCI 4260 Project Management	Must be taken at UW	3
DSCI 4280 Supply Chain Management	Must be taken at UW	3
ES 4910 Survey of Engineering Management	Must be taken at UW	3
ES 4920 Entrepreneurship for Engineers	Must be taken at UW	3
FIN 3250 Corporate Finance	FIN 2100 Corporate Finance ⊕	3
FIN 3310 Investment Management	Must be taken at UW	3
FIN 4250 Advanced Corporate Finance	Must be taken at UW	3
MGT 1040 Legal Environment of Business	BADM 2010 Legal Environment for Business	3
MGT 3210 Management & Organization	MGT 2100 Principles of Management ⊕	3
MKT 3210 Intro to Marketing	MKT 2100 Intro to Marketing ⊕	3
MKT 4430 Marketing Management	Must be taken at UW	3
MKT 4450 Advanced Marketing Management	Must be taken at UW	3
MKT 4540 International Marketing	Must be taken at UW	3

Mathematics Electives

UW Course	LCCC Equivalent	Credits
MATH 2250 Elementary Linear Algebra	MATH 2250 Elementary Linear Algebra	3
MATH 3205 Elementary Real Analysis	Must be taken at UW	3
MATH 3500 Alg I: Intro to Rings/Proofs	Must be taken at UW	3
MATH 3700 Combinatorics	Must be taken at UW	3
MATH 4200 Advanced Analysis	Must be taken at UW	3
MATH 4230 Intro to Complex Analysis	Must be taken at UW	3
MATH 4255 Math Theory of Probability	Must be taken at UW	3
MATH 4265 Intro to Theory of Statistics	Must be taken at UW	3
MATH 4300 Intro to Math Modeling	Must be taken at UW	3
MATH 4340 Num Methods for Ord & Partial Diff Eq	Must be taken at UW	3
MATH 4400 Partial Differential Equations	Must be taken at UW	3
MATH 4500 Matrix Theory	Must be taken at UW	3
STAT 4220 Basic Engineering Statistics	Must be taken at UW	3

Science Electives

UW Course	LCCC Equivalent	Credits
ASTR 2130 General Astronomy I	Must be taken at UW	4
ASTR 2320 General Astronomy II	Must be taken at UW	4
ATSC 2100 Global Warming	Must be taken at UW	3
ATSC 4010 Atmospheric Processes I	Must be taken at UW	3
ATSC 4320 The Ocean Environment	Must be taken at UW	?
CHEM 1030 General Chemistry II	CHEM 1030 General Chemistry II	4
CHEM 1060 Gen Chem & Quant Ana II	Must be taken at UW	4
CHEM 2230 Quantitative Analysis	Must be taken at UW	4
CHEM 2300 Intro Organic Chemistry	Same course in catalog?	4
CHEM 2420 Organic Chemistry I	CHEM 2420 Organic Chemistry I	4
CHEM 2440 Organic Chemistry II	CHEM 2440 Organic Chemistry II	4

This document reflects the UW curriculum as of 19 July 2021. Any changes to the UW curriculum or the LCCC course equivalencies will require this document to be updated.

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<i>Science Electives are continued on page 6</i>		
Science Electives (continued from page 5)		
UW Course	LCCC Equivalent	Credits
CHEM 3020 Environmental Chemistry	Must be taken at UW	3
CHEM 4507 Physical Chemistry I	Must be taken at UW	3
CHEM 4508 Physical Chemistry II	Must be taken at UW	3
GEOL 1100 Physical Geology	GEOL 1100 Physical Geology	4
GEOL 1110 Physical Geology for Engineers	Must be taken at UW	4
GEOL 2010 Mineralogy	Must be taken at UW	3
GEOL 2020 Intro to Petrology	Must be taken at UW	2
GEOL 2050 Principles of Paleontology	Must be taken at UW	3
GEOL 2070 Intro to Oceanography	Must be taken at UW	4
GEOL 2100 Stratigraphy & Sedimentation	Must be taken at UW	4
GEOL 2150 Geomorphology	Must be taken at UW	4
GEOL 3005 Principles of Geophysics	Must be taken at UW	4
GEOL 4000 Paleomag in Geol/Geoph	Must be taken at UW	3
GEOL 4001 Modeling the Earth System	Must be taken at UW	4
GEOL 4025 Igneous & Metamor Petr	Must be taken at UW	4
GEOL 4050 Geology of Wyoming	Must be taken at UW	3
GEOL 4113 Geological Remote Sensing	Must be taken at UW	4
GEOL 4125 Igneous Petrology	Must be taken at UW	2
GEOL 4280 Paleobotany	Must be taken at UW	4
LIFE 1010 General Biology	BIOL 1010 General Biology	4
LIFE 2002 Global Ecology	Must be taken at UW	3
LIFE 2022 Animal Biology	LIFE 2022 Animal Biology	4
LIFE 2023 Biology for Plants & Fungi	LIFE 2023 Biology for Plants & Fungi	4
LIFE 2050 Biol of Aging & Human Development	Must be taken at UW	3
LIFE 3050 Genetics	Must be taken at UW	3
LIFE 3400 General Ecology	Must be taken at UW	3
LIFE 3410 Intro to Field Ecology	Must be taken at UW	3
LIFE 3500 Evolutionary Biology	Must be taken at UW	3
LIFE 3600 Cell Biology	Must be taken at UW	3
MOLB 2021 General Microbiology	MICR 2240 Medical Microbiology	4
MOLB 2240 Medical Microbiology	Must be taken at UW	4
MOLB 3000 Intro to Molecular Biology	Must be taken at UW	3
MOLB 3610 Principles of Biochemistry	Must be taken at UW	4
MOLB 4440 Microbial Genetics	Must be taken at UW	3
PHYS 1210 Engineering Physics I <i>May only count as an elective IF taken prior to ES 2120</i>	Must be taken at UW <i>Students may not earn credit for both PHYS 1210 & PHYS 1310</i>	4
PHYS 1310 College Physics I <i>May only count as an elective IF taken prior to ES 2120</i>	PHYS 1210 Engineering Physics I <i>Students may not earn credit for both PHYS 1210 & PHYS 1310</i>	4
PHYS 2310 Physics III: Waves and Optics	Must be taken at UW	4
PHYS 2320 Physics IV: Modern Physics	Must be taken at UW	3
PHYS 4000 Applied Laser Science	Must be taken at UW	3
PHYS 4210 Classical Mechanics	Must be taken at UW	3
PHYS 4220 Classical Mechanics II	Must be taken at UW	4
PHYS 4310 Quantum Mechanics	Must be taken at UW	3
PHYS 4340 Semiconductor Matls/Device (Crosslisted: EE 4340)	Must be taken at UW	3
PHYS 4350 Adv Quantum Mechanics	Must be taken at UW	3
PHYS 4410 Electricity & Magnetism I	Must be taken at UW	3
PHYS 4420 Electricity & Magnetism II	Must be taken at UW	3
PHYS 4510 Thermo and Statistical Mech	Must be taken at UW	3
PHYS 4710 Solid State Physics	Must be taken at UW	3