

Associate to Bachelors (A2B) Articulation Agreement

Prescribed Curriculum: Gillette College

Associate of Science – Engineering (Metallurgical)

| General Education Courses | | | 27 CREDIT HOURS |
|---------------------------|--------------|---|---|
| | Credit Hours | Community College Course No. | Course Title or Category |
| Science | 4 | CHEM 1020 | General Chemistry I |
| Mathematics | 4 | MATH 2200 | Calculus I |
| Cultural Studies | 3 | Select 1 course from | Cultural Studies “Global Diversity” or “Foreign Language” categories |
| | 3 | Select 1 course from | Cultural Studies “Social and Behavioral Sciences” category |
| US & WY Constitutions | 3 | HIST 1211, or 1221, or 1251, or POLS 1000 | US to 1865, or US from 1865, or Wyoming History, or American and Wyoming Government |
| Communication | 3 | ENGL 1010 | English Composition I |
| | 3 | COMM 2010 | Public Speaking |
| Gen Ed Course of Choice | 4 | MATH 2205 | Calculus II |

| Required Courses | | | 18 CREDIT HOURS |
|-----------------------|--------------|------------|--------------------------------|
| | Credit Hours | Course No. | Course Title |
| Mathematics & Science | 4 | MATH 2210 | Calculus III |
| | 3 | MATH 2310 | Applied Differential Equations |
| | 4 | PHYS 1310 | College Physics I |
| Engineering | 1 | ES 1000 | Orientation of Engineering |
| | 3 | ES 2110 | Statics |
| | 3 | ES 2120 | Dynamics |

| Program Elective Courses | | | 18 CREDIT HOURS |
|--------------------------|--------------|------------|--------------------------------------|
| | Credit Hours | Course No. | Course Title |
| ES Elective | 4 | PHYS 1320 | College Physics II |
| Program Elective | 3 | ES 1060 | Intro to Engineering Problem Solving |
| | 3 | ES 2410 | Mechanics of Materials I |
| | 4 | CHEM 1030 | General Chemistry II |
| | 4 | ES 2210 | Electric Circuit Analysis |

Associate of Science – Engineering (Metallurgical) Total: 63 CREDIT HOURS

Post-Associate Degree Prescribed Curriculum: South Dakota Mines

Bachelor of Science – Metallurgical Engineering

| General Education Courses | | | 6 CREDIT HOURS |
|------------------------------|--------------|------------------------------|--|
| | Credit Hours | Community College Course No. | Course Title or Category |
| Written Communication | 3 | ENGL 289 | Explorations in STEM Communications |
| Arts & Humanities | 3 | Select 1 course from | General Education Arts and Humanities (Goal 4) |

| Major Required Courses | | | 43 CREDIT HOURS |
|----------------------------------|--------------|------------------|--|
| | Credit Hours | Course No. | Course Title |
| Metallurgical Engineering | 1 | MET 231 | Structures and Properties of Materials Lab |
| | 3 | MET 232 | Properties of Materials |
| | 4 | MET 220/220L | Mineral Processing and Resource Recovery w/Lab |
| | 4 | MET 320 | Metallurgical Thermodynamics |
| | 1 | MET 333 | Process Measurements and Controls |
| | 4 | MET 422 | Transport Phenomena |
| | 4 | MET 321/321L | High Temp Extraction, Concentration, and Recycling w/Lab |
| | 2 | MET 352/352L | Principles of Metallurgical Design |
| | 4 | MET 330/330L | Physics of Metals w/Lab |
| | 3 | MET 332 | Thermomechanical Processing |
| | 2 | MET 464 | Senior Design I |
| | 4 | MET 310/310L | Aqueous Extraction, Concentration, and Recycling w/Lab |
| | 2 | MET 433 | Process Control |
| | 4 | MET 440/440L | Mechanical Metallurgy w/Lab |
| 1 | MET 465 | Senior Design II | |

| Other Required Courses | | | 5 CREDIT HOURS |
|------------------------|--------------|------------|------------------------------------|
| | Credit Hours | Course No. | Course Title |
| Economics | 2 | IENG 301 | Basic Engineering Economics |
| Mathematics | 3 | MATH 373 | Introduction to Numerical Analysis |

| Elective Courses | | | 13 CREDIT HOURS |
|--------------------------|--------------|------------|--|
| | Credit Hours | Course No. | Course Title |
| Major Electives | 6 | | Select from list of Major Electives |
| Free Electives | 1 | | Select in consultation with Academic Advisor |
| Science Electives | 6 | | Select from list of Science Electives |

Post-Associate Degree Total:

67 CREDIT HOURS

Bachelor of Science – Metallurgical Engineering Total:

130 CREDIT HOURS

A2B Articulation Agreement Guarantees & Limitations

GUARANTEES

Students who:

1. complete the Associate of Science - Engineering degree prescribed curriculum at Gillette College exactly as it is identified in this articulation agreement, **and**
2. have the degree conferred on their education record at Gillette College (post high school graduation), **and**
3. earn a minimum cumulative grade point average (GPA) of 2.75 at the Gillette College, **and**
4. pass all 63 credits for the associate degree, earning a grade C- or higher in each course

are **guaranteed** the following at the South Dakota School of Mines and Technology (South Dakota Mines):

1. junior standing at South Dakota Mines with no more than 67 remaining credits to meet the graduation requirements for the Bachelor of Science degree in Metallurgical Engineering.
2. admission to South Dakota Mines
3. admission to the Bachelor of Science degree in Metallurgical Engineering.

LIMITATIONS

1. This agreement is between the Associate of Science - Engineering degree at Gillette College and the Bachelor of Science degree in Metallurgical Engineering at South Dakota Mines only.
2. Students must meet all admission and application requirements at South Dakota Mines, including the submission of all required documentation by stated deadlines. Students are advised to contact the Office of Admissions at the South Dakota Mines early in their transfer planning.
3. Student must have a cumulative grade point average (GPA) at the Gillette College of 2.75 or higher **and** only courses with grades of C- or higher are guaranteed to be accepted in transfer by South Dakota Mines.
4. The credit and course transfer guarantees described in this agreement apply to the Associate of Science degree at Gillette College and the Bachelor of Science degree in Metallurgical Engineering at South Dakota Mines. If the student changes majors at Gillette College or at South Dakota Mines, the student is no longer covered by this Articulation Agreement and none of the Guarantees of the Agreement apply.
5. Students utilizing any form of transfer credit, including but not limited to credit awarded from other higher education institutions, standardized exam (CLEP, AP, DSST, etc.), prior learning assessment (military, certifications, ACE recommended credit, portfolio, challenge exam, work experience equivalent credit, etc.) to satisfy any Associate degree requirements will have those credits evaluated by South Dakota Mines. Should South Dakota Mines not accept the transfer credits accepted by Gillette College, the student will be required to make up the credit deficiency at South Dakota Mines.
6. No course substitutions are allowed for the courses listed in the Prescribed Curriculum for the associate degree at Gillette College.

A2B CONTACT INFORMATION


South Dakota Mines
Office of the Provost
605.394.2256
Provost@sdsmt.edu

Gillette College
Academic & Student Affairs
307.681.6000
admissions@gillettecollege.org

RENEWAL, REVISION, and TERMINATION

1. This Associate to Bachelor Articulation Agreement (A2B) shall be in effect July 1 – June 30 each year and will automatically renew annually unless action is taken by South Dakota Mines or Gillette College to terminate or modify it.
2. The South Dakota Mines Office of the Provost and the Gillette College Academic and Student Affairs department will collaborate to coordinate a review the content of the associate and bachelor degrees on a three-year cycle to ensure this A2B is still appropriate.
3. South Dakota Mines and the Gillette College each reserve the right to seek revision of this agreement at any time.
4. Revision of any content of the agreement (except Appendices content) will be approved by each institution and result in a new agreement being signed, with copies retained by each institution.
 - a. Revision to any Appendices will be communicated to each institution, but do not need to be approved by each institution and will not result in a new agreement being signed by each institution.
5. South Dakota Mines and the Gillette College each reserve the right to seek termination of this agreement at any time.
6. Should the agreement be terminated, each institution agrees to collaborate and engage in appropriate plans to notify and work with impacted students, providing a minimum one-year advance notice of termination.

APPROVALS

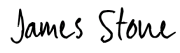
DocuSigned by:

F8ACCB3DD0E4AF...
Lance Roberts, Ph.D.
Interim President
South Dakota Mines
President@sdsmt.edu

1/22/2025
Date

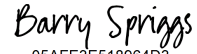
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JOberlander@gillettecollege.org

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James Stone, Ph.D.
Interim Provost and Vice President for Academic Affairs
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Provost@sdsmt.edu

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Date

Appendix A: Course Sequence

Course Sequence: Gillette College

Engineering - Metallurgical (A.S.)

| Semester | Course No. | Course Title | Credit Hours | Completed |
|------------------------------------|------------|---|--------------|-----------|
| Freshman Year First Semester | MATH 2200 | Calculus I | 4 | |
| | CHEM 1020 | General Chemistry I | 4 | |
| | ES 1000 | Orientation of Engineering | 1 | |
| | ENGL 1010 | English Composition | 3 | |
| | ES 1060 | Intro to Engineering Problem Solving (Program Elective) | 3 | |
| <i>Total Credits</i> | | | 15 | |

| Semester | Course No. | Course Title | Credit Hours | Completed |
|-------------------------------------|------------|---|--------------|-----------|
| Freshman Year Second Semester | COMM 2010 | Public Speaking (Advanced Writing) | 3 | |
| | CHEM 1030 | General Chemistry II (Program Elective) | 4 | |
| | ES 2110 | Statics | 3 | |
| | MATH 2205 | Calculus II | 4 | |
| | PHYS 1310 | College Physics I | 4 | |
| <i>Total Credits</i> | | | 17 | |

| Semester | Course No. | Course Title | Credit Hours | Completed |
|-------------------------------------|-----------------------|--|--------------|-----------|
| Sophomore Year First Semester | MATH 2210 | Calculus III | 4 | |
| | ES 2120 | Dynamics | 3 | |
| | Select 1 course from: | Cultural Studies: Foreign Language or Global Diversity areas | 3 | |
| | PHYS 1320 | College Physics II (ES/PHYS Program Elective) | 4 | |
| | ES 2410 | Mechanics of Materials I (Program Elective) | 3 | |
| | | | | |
| <i>Total Credits</i> | | | 17 | |

| Semester | Course No. | Course Title | Credit Hours | Completed |
|--------------------------------------|-----------------------|--|--------------|-----------|
| Sophomore Year Second Semester | MATH 2310 | Applied Differential Equations | 3 | |
| | Select 1 course from: | Cultural Studies: Social & Behavioral Science area | 3 | |
| | Select 1 course from: | HIST 1211, HIST 1221, HIST 1251, POLS 1000 (US/WY Const) | 3 | |
| | ES 2210 | Electric Circuit Analysis (Program Elective) | 4 | |
| <i>Total Credits</i> | | | 14 | |

| | | | |
|---|--|--|------------------------|
| General Education Coursework Total: | | | 27 credit hours |
| Major and Elective Coursework Total: | | | 36 credit hours |
| Gillette College Coursework Total: | | | 63 CREDIT HOURS |

Course Sequence: South Dakota Mines – Fall Semester Start

Metallurgical Engineering (B.S.) – even year start

| Semester | Course No. | Course Title | Credit Hours | Completed |
|-----------------------------------|------------|---|--------------|-----------|
| Junior Year | MET 231 | Properties of Materials Lab | 1 | |
| First Semester – FALL (even year) | MET 232 | Properties of Materials | 3 | |
| | MET 320 | Metallurgical Thermodynamics | 4 | |
| | MET 422 | Transport Phenomena | 4 | |
| | | Arts/Humanities Gen Ed Elective (Goal 4)* | 3 | |
| | ENGL 289 | Explorations in STEM Communications* | 3 | |
| Total Credits | | | 18 | |

| Semester | Course No. | Course Title | Credit Hours | Completed |
|-------------------------------------|--------------|---|--------------|-----------|
| Junior Year | MET 220/220L | Mineral Processing and Resource Recovery w/lab | 4 | |
| Second Semester – SPRING (odd year) | MET 321/321L | High Temperature Extraction, Concentration, & Rec w/lab | 4 | |
| | | Science Electives | 3 | |
| | MET 352/352L | Principles of Metallurgical Design w/lab | 2 | |
| | MATH 373 | Introduction to Numerical Analysis | 3 | |
| | | Free Electives | 1 | |
| Total Credits | | | 17 | |

| Semester | Course No. | Course Title | Credit Hours | Completed |
|----------------------------------|--------------|----------------------------------|--------------|-----------|
| Senior Year | MET 333 | Process Measurements and Control | 1 | |
| First Semester – FALL (odd year) | MET 464 | Senior Design | 2 | |
| | MET 330/330L | Physics of Metals w/lab | 4 | |
| | MET 332 | Thermomechanical Processing | 3 | |
| | | Major Electives | 3 | |
| | | Science Electives | 3 | |
| Total Credits | | | 16 | |

| Semester | Course No. | Course Title | Credit Hours | Completed |
|--------------------------------------|--------------|--|--------------|-----------|
| Senior Year | MET 310/310L | Aqueous Extraction, Concentration, and Recycling w/lab | 4 | |
| Second Semester – SPRING (even year) | MET 440/440L | Mechanical Metallurgy w/lab | 4 | |
| | MET 433 | Process Control | 2 | |
| | IENG 301 | Basic Engineering Economics | 2 | |
| | MET 465 | Senior Design II | 1 | |
| | | Major Electives | 3 | |
| Total Credits | | | 16 | |

*General Education Coursework Total: 6 credit hours
Major and Elective Coursework Total: 61 credit hours
South Dakota Mines Coursework Total: 67 CREDIT HOURS

Metallurgical Engineering (B.S.) – odd year start

| Semester | Course No. | Course Title | Credit Hours | Completed |
|----------------------------------|------------|---|--------------|-----------|
| Junior Year | MET 231 | Properties of Materials Lab | 1 | |
| First Semester – FALL (odd year) | MET 232 | Properties of Materials | 3 | |
| | MET 320 | Metallurgical Thermodynamics | 4 | |
| | | Arts/Humanities Gen Ed Elective (Goal 4)* | 3 | |
| | ENGL 289 | Explorations in STEM Communications* | 3 | |
| Total Credits | | | 14 | |

| Semester | Course No. | Course Title | Credit Hours | Completed |
|--------------------------------------|--------------|--|--------------|-----------|
| Junior Year | MET 220/220L | Mineral Processing and Resource Recovery w/lab | 4 | |
| Second Semester – SPRING (even year) | MET 310/310L | Aqueous Extraction, Concentration, and Recycling w/lab | 4 | |
| | MET 440/440L | Mechanical Metallurgy w/lab | 4 | |
| | MET 352/352L | Principles of Metallurgical Design w/lab | 2 | |
| | | | | |
| Total Credits | | | 14 | |

| Semester | Course No. | Course Title | Credit Hours | Completed |
|-----------------------------------|------------|------------------------------------|--------------|-----------|
| Senior Year | MET 333 | Process Measurements and Control | 1 | |
| First Semester – FALL (even year) | MET 422 | Transport Phenomena | 4 | |
| | MET 464 | Senior Design | 2 | |
| | IENG 301 | Basic Engineering Economics | 2 | |
| | MATH 373 | Introduction to Numerical Analysis | 3 | |
| | | Free Elective | 1 | |
| Total Credits | | | 13 | |

| Semester | Course No. | Course Title | Credit Hours | Completed |
|-------------------------------------|--------------|---|--------------|-----------|
| Senior Year | MET 321/321L | High Temperature Extraction, Concentration, & Rec w/lab | 4 | |
| Second Semester – SPRING (odd year) | MET 433 | Process Control | 2 | |
| | MET 465 | Senior Design II | 1 | |
| | | Science Elective | 3 | |
| | | Major Elective | 3 | |
| | | | | |
| Total Credits | | | 13 | |

| Semester | Course No. | Course Title | Credit Hours | Completed |
|----------------------------------|--------------|-----------------------------|--------------|-----------|
| Senior Year | MET 330/330L | Physics of Metals w/lab | 4 | |
| Third Semester – FALL (odd year) | MET 332 | Thermomechanical Processing | 3 | |
| | | Science Elective | 3 | |
| | | Major Elective | 3 | |
| | | | | |
| Total Credits | | | 13 | |

| | |
|---|------------------------|
| *General Education Coursework Total: | 6 credit hours |
| Major and Elective Coursework Total: | 61 credit hours |
| South Dakota Mines Coursework Total: | 67 CREDIT HOURS |