

Capital High School

Pathways to



Capital High School's Career Pathways to Helena College

This booklet contains Career Pathways developed jointly by Helena College and Capital High School faculty and counselors to help guide students as they register for high courses that will provide the best opportunities to be successful in college and to take efficient "pathways" to their chosen careers, which may include dual credit and other advanced opportunities.

The Career Pathways are organized into Career Clusters. Capital High School will continue to develop pathways to all the programs available at Helena College. In the meantime, students, parents, and counselors can go to www.umhelena.edu for the college course catalog and by consulting the course suggestions within a Career Cluster, develop an individual student pathway. These pathways can also provide guidance for students planning to attend another college or university.

Contents:

- 1) **Key to Pathways Page Design**
- 2) **Business Technology Overview**
 - a. Small Business Management Program of Study
- 3) **Finance Overview**
 - a. Accounting Technology Program of Study
- 3) **Health Science Overview**
 - a. Medical Assisting Program of Study
 - b. Medical Administrative Assistant Program of Study
 - c. Nursing (LPN & RN) Program of Study
 - d. Psychology/Sociology (Mental Health) Program of Study
 - e. Pre-Pharmacy Program of Study
- 4) **Computer Technology Overview**
 - a. Programming and Network Administration Program of Study
- 5) **Law, Public Safety, Corrections, and Security Overview**
 - a. Legal Support Specialist Program of Study
 - b. Fire & Rescue Program of Study
 - c. Criminal Justice Program of Study
- 6) **Manufacturing Overview**
 - a. Industrial Welding Program of Study
 - b. Computer-Aided Manufacturing
 - c. Sheet Metal Apprenticeship Program of Study
- 7) **Transportation Overview**
 - a. Automotive Technology Program of Study

This page provides the KEY to Pathways Information in this booklet.

SUGGESTED HIGH SCHOOL COURSES

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| 9-12 | Graduation Requirements Workforce/College Prep | “Core” courses that will meet graduation and college preparation requirements, listed at the most appropriate grade level. In grade 11, dual credit courses may be added. | Recommended CTE Cluster Foundation Course(s): Computer courses may provide a good foundation. |
| | <i>CTE and/or Electives</i> | Career and Technical Courses that will apply to the chosen field. In grade 11, dual credit courses may be added. | Recommended CTE Pathway Courses: These are courses directly needed in the pathway. |
| <p>These pages are arranged in sections by Career Cluster. The first page of each section provides an overview of the cluster, with possible occupations, a listing of Montana’s colleges and universities, and the programs available at Helena College. These pages also explain Professional Certifications and the types of degrees offered by the college: CAS, AAS, and AS.</p> <p>Each pathway is arranged like this page, with the suggested high school courses, advanced learning opportunities, and the program’s postsecondary (college) courses, listed by semester.</p> <p>These pathways provide a recommended course sequence. However, students often make choices in their high school curriculum that meet graduation requirements and provide adequate preparation for college.</p> | | | <p>Other Recommended CTE Courses: Other related CTE courses may give students an edge.</p> <p>Career & Technical Student Organization(s): Join these organizations to learn skills and become a leader.</p> |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

Advanced Placement: Students must score at a certain level on each AP test for a college to consider using the course to waive a course requirement in the program. These threshold scores (generally at least “3”) may differ from one college to another.

Dual Enrollment courses: Students can start earning college credits that count toward a degree, either at the high school or on the college campus when qualified instructors are available. To register for dual credit, students must meet minimum score requirements, such as for College Algebra M121, a COMPASS math score of 70 or above or an ACT math score of 22 or above; and for College Composition WRIT101, a COMPASS Writing score of 90 or above or ACT Combined Writing Score of 19.


These courses are printed in red in the colored Programs of Study.

Online courses: The Montana Digital Academy and each college provide online courses. A complete listing can be found at www.montanadigitalacademy.org.
These courses are printed in blue in the colored Programs of Study.

Other: Internships or relevant jobs help students learn skills in the field and decide if the career will be a good fit.

POSTSECONDARY PROGRAM OF STUDY

| | Math | English | Major | Other |
|-------------------|---|---|--|--|
| Semester 1 | What math courses are required in this college program? | What writing, speaking, and reading courses are required in this college program? | Do the courses in this major look interesting, challenging, and exciting to you? | What else is required in this program? Can you sample some of these subject areas in high school? |
| Semester 2 | | | | |
| Semester 3 | Do they match your potential abilities? | Do they match your interests? | Will you want to spend years studying these topics? | |
| Semester 4 | | | | |

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|  | <p align="center">Cluster Overview:</p> <p align="center">Business Management and Administration careers encompass planning, organizing, directing and evaluating business functions essential to efficient and productive business operations. Business Management and Administration career opportunities are available in every sector of the economy.</p> |
| <p>Pathway Options:</p> <ul style="list-style-type: none"> • Administrative Support • Business Information Management • General Management • Human Resources Management • Operations Management | <p>Occupation Examples:</p> <p align="center">General manager, Operations manager, Human resources manager, Administrative assistant, Information systems manager, Management analyst, Marketing manager, Entrepreneur</p> <p align="center"><i>For a complete listing, go to:</i> http://online.onetcenter.org/find/career?c=4&q=Go</p> |

MONTANA POSTSECONDARY OPPORTUNITIES
*Montana University System Degree and Program Inventory: <http://www.homepage.montana.edu/~mus/drginv/>
Your Guide to Montana's Certificate and Associate Degree Programs: <http://mus.edu/twoyear/YourGuide.html>*

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| <p>MSU Two Year Colleges and Programs: City College MSUB—Billings (CC); Great Falls College MSU—Great Falls (GFC); Helena College UM—Helena (HC) Highlands College MT Tech—Butte(HC-Tech); Missoula College UM—Missoula (MC); Gallatin College MSU—Bozeman(GC)</p> | <p>Community Colleges: Dawson Community College (DCC) Flathead Valley Community College (FVCC) Miles Community College (MCC)</p> | <p>Tribal Colleges: Aaniiih Nakoda College (ANC);Blackfeet Community College(BCC); Chief Dull Knife College (CDKC);Fort Peck Community College (FPCC);Little Big Horn College (LBHC);Stone Child College (SCC);Salish Kootenai College (SKC)</p> | <p>Four Year Colleges/Universities: MSU—Bozeman; MSUB—Billings; MSUN—Havre; MT Tech—Butte; UM—Missoula; UMW—Dillon</p> |
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HELENA COLLEGE UNIVERSITY OF MONTANA PROGRAMS
<http://www.umhelena.edu>

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|---|--|---|
| <p>PROFESSIONAL CERTIFICATE</p> | <ul style="list-style-type: none"> • Requires diploma or HiSET • Industry-recognized certification requires state or national exam • Typically non-credit • Complete in one year or less | <p>Certified Bookkeeper (AIPB Certification) Online Microsoft Office Specialist: Online Global Business Professional: Online</p> |
| <p>CERTIFICATE OF APPLIED SCIENCE</p> | <ul style="list-style-type: none"> • Requires diploma or HiSET • 30-45 credits; limited general education credits • Complete in one year | <p>Computer Skills Specialist Entrepreneurship Legal Support Specialist Medical Assisting</p> |
| <p>ASSOCIATE OF APPLIED SCIENCE DEGREE</p> | <ul style="list-style-type: none"> • Requires diploma or HiSET • 66 credits; includes 12 Gen Ed credits • Complete in two years (<i>if prepared academically in math and English</i>) | <p>Accounting Technology Administrative Office Management Specialist Business Technology Human Resource Management Management Information Systems Medical Administrative Specialist Small Business Management</p> |
| <p>ASSOCIATE OF SCIENCE</p> | <ul style="list-style-type: none"> • Begin with AAS Degree • 60 credits; includes 31 Gen Ed Core credits • Complete in two years (<i>if prepared academically in math and English</i>) | <p>Accounting/Business Technology Transfer Degrees Business Administration</p> |
| <p>BACCALAUREATE DEGREE</p> | <ul style="list-style-type: none"> • Requires 4-year college prep for admission • 128 credits (approximately), 31 Gen Ed Core • Complete in four years | <p>B.A.S Accounting or Business Technology Montana Tech B.I.T. Montana Tech Business Administration University of Montana Jake Jabs College of Business and Entrepreneurship Montana State University</p> |

Capital High School to Helena College degree program:
AAS Business Technology: Small Business Management Option

BIG SKY PATHWAY



Recommended pathway from Capital High School to Helena College with dual credit opportunities printed in red.

SUGGESTED HIGH SCHOOL COURSES

| | | | |
|------|---|--|--|
| 9th | Graduation Requirements Workforce/College Prep | English 1, Algebra I, Earth Science, World Cultures, Phys Ed I | Recommended CTE Cluster Foundation Course(s): Money Management; Career Planning, Basic Computer Skills |
| | <i>CTE and/or Electives</i> | <i>Money Management, Career Planning</i> | Recommended CTE Pathway Courses: Accounting I & II, Marketing, Small Business Management, MS Excel and Word, Public Speaking |
| 10th | Graduation Requirements Workforce/College Prep | English 2, Geometry, Biology, Health, Phys Ed 2 | Other Recommended CTE Courses: Law and Justice, Accounting III |
| | <i>CTE and/or Electives</i> | <i>Marketing, Basic Computer Skills: Keyboarding and Document Processing (TASK113), Art Elective</i> | |
| 11th | Graduation Requirements Workforce/College Prep | English 3, Algebra II, US History | Career & Technical Student Organization(s): BPA http://www.bpa.org DECA www.deca.org |
| | <i>CTE and/or Electives</i> | <i>Accounting I (ACTG101), MS Excel (CAPP156)</i> | |
| 12th | Graduation Requirements Workforce/College Prep | English 4 & College Writing WRIT 101 or Technical Writing (WRIT121T), College Algebra (M121), US Government | |
| | <i>CTE and/or Electives</i> | <i>Accounting II: MS Word (CAPP154), Law & Justice, Small Business Management</i> | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

Advanced Placement: AP Lang & Comp 3, AP History, AP European History, AP English IV, AP Government, AP Biology, AP Economics

Dual Enrollment courses: ACTG101-Accounting I, WRIT 101 – College Writing, WRIT 121T – Technical Writing, M121 – College Algebra, Keyboarding and Document Processing TASK113, MS Word CAPP154, MS Excel CAPP156, Intro to Public Speaking COMX111

Online courses: Montana Digital Academy <http://www.montanadigitalacademy.org/> ECNS201 Microeconomics, ECNS202 Macroeconomics, ECNS203 Principles of Micro & Macro Economics, PSYX100 Intro to Psychology, BGEN105 Intro to Business, PSCI240 Introduction to Public Administration

Other: Terri Norman Business Work Coop (tnorman@helenaschools.org) Work with Counselors; Business Professionals of America; DECA; Work Experience in private sector

POSTSECONDARY PROGRAM OF STUDY

| | Math | English | Major | Other |
|------------------------------------|--|---|--|---|
| Semester 1 (15 credits) | M108T Business Math OR M121 College Algebra | WRIT101 College Writing OR WRIT121T Intro to Tech Writing | ACTG101 Accounting Procedures I BGEN105 Intro to Business | TASK150 Customer Service Strategies |
| Semester 2 (18 credits) | | | ACTG205 Computerized Accounting BGEN220 Bus Ethics & Social Responsibility CAPP156 MS Excel BMGT210 Small Business Entrepreneurship | HR110T Career Development and/or Human Relations OR PSYX100 Intro to Psychology OR SOCI101 Intro to Sociology MART145 Web Design |
| Semester 3 (18 credits) | | COMX111 Intro to Public Speaking OR BNGT205 Professional Communications Fundamentals | ACTG180 Payroll Accounting BMKT225 Marketing BFIN265 Intro to Business Finance BGEN235 Business Law I | BMGT215 Human Resource Management OR BGEN 298 Internship OR BGEN292 Independent Study |
| Semester 4 (15 credits) | | | BMGT235 Management BGEN299 Capstone: Business BMKT240 Advertising | CAPP153 MS PowerPoint ECNS201 Microeconomics OR ECNS202 Macroeconomics OR ECNS203 Principles of Micro & Macro Economics |



Cluster Overview:

Jobs in the Finance career cluster involve providing services for financial and investment planning, banking insurance, and business financial management.

Pathway Options:

- Securities and Investments
- Business Finance
- Accounting
- Insurance
- Banking Services

Occupation Examples:

Financial Manager, Comptroller, Insurance Sales Agent, Actuary, Estate Planner, Financial Advisor, Chief Financial Officer

For a complete listing, go to:

<http://online.onetcenter.org/find/career?c=6&g=Go>

MONTANA POSTSECONDARY OPPORTUNITIES

Montana University System Degree and Program Inventory: <http://www.homepage.montana.edu/~mus/drqinv/>

Your Guide to Montana's Certificate and Associate Degree Programs: <http://mus.edu/twoyear/YourGuide.html>

Colleges:

City—Billings; Great Falls; Helena; Highlands--Butte; Missoula; Gallatin--Bozeman

Community Colleges:

DCC—Glendive;
FVCC—Kalispell;
MCC—Miles City

Tribal Colleges:

BFCC—Browning;
CDKC—Lame Deer; FBCC—Harlem;
FPCC—Poplar; LBHC—Crow Agency;
SCC—Box Elder; SKC—Pablo

Four Year Colleges/Universities:

MSU—Bozeman; MSUB—Billings;
MSUN—Havre; TECH—Butte; UM—Missoula; UMW—Dillon

HELENA COLLEGE UNIVERSITY OF MONTANA PROGRAMS

<http://www.umhelena.edu>

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|--|---|--|
| PROFESSIONAL CERTIFICATE | <ul style="list-style-type: none"> • Requires diploma or HiSET • Industry-recognized certification requires state or national exam • Typically non-credit • Complete in one year or less | Certified Bookkeeper (AIPB Certification) Online |
| CERTIFICATE OF APPLIED SCIENCE | <ul style="list-style-type: none"> • Requires diploma or HiSET • 30-45 credits; limited general education credits • Complete in one year | Bookkeeping |
| ASSOCIATE OF APPLIED SCIENCE DEGREE | <ul style="list-style-type: none"> • Requires diploma or HiSET • 66 credits; includes 12 general ed credits • Complete in two years (<i>if prepared academically in math and English</i>) | Accounting Technology Options: Accounting Information Systems Bookkeeping Finance |
| ASSOCIATE OF SCIENCE DEGREE | <ul style="list-style-type: none"> • May begin by pursuing an AAS Degree • 60 credits; includes 31 Gen Ed Core credits • Complete in two years (<i>if prepared academically in math and English</i>) | Accounting Technology Transfer Degrees |
| BACCALAUREATE DEGREE | <ul style="list-style-type: none"> • Requires 4-year college prep for admission • 128 credits (approximately) • Complete in four years | B.A.S Accounting Technology Montana Tech B.S. Finance University of Montana B.S. Accounting or Finance Montana State University Etc. |

Capital High School to Helena College degree program:
AAS Accounting Technology: Bookkeeping Option

BIG SKY PATHWAY



SUGGESTED HIGH SCHOOL COURSES

| | | | |
|------|---|---|---|
| 9th | Graduation Requirements Workforce/College Prep | English 1, Algebra I, Earth Science, World Cultures, Phys Ed 1 | Recommended CTE Cluster Foundation Courses: Money Management, Career Planning, Law and Justice |
| | <i>CTE and/or Electives</i> | <i>Career Planning, Art Elective</i> | |
| 10th | Graduation Requirements Workforce/College Prep | English 2, Geometry, Biology, Health, Phys Ed 2 | Recommended CTE Pathway Courses: Accounting I and II, Basic Computer Skills (Keyboarding and Document Processing), MS Excel and Word |
| | <i>CTE and/or Electives</i> | <i>Money Management, Basic Computer Skills: TASK113 Keyboarding & Document Processing (need waiver for DC)</i> | |
| 11th | Graduation Requirements Workforce/College Prep | English 3, Algebra II, US History | Other CTE Courses: Accounting III |
| | <i>CTE and/or Electives</i> | <i>Accounting I--ACTG101; MS Excel CAPP156, Public Speaking COMX111</i> | |
| 12th | Graduation Requirements Workforce/College Prep | English 4 and College Writing WRIT101 OR Technical Writing WRIT121T (DC) , M121 College Algebra , US Gov't | BPA (Business Professionals of America) DECA |
| | <i>CTE and/or Electives</i> | <i>Accounting II; MS Word CAPP154, Law and Justice</i> | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

Advanced Placement: Lang & Comp 3, History, European History, English IV, Government, Biology, Psychology

Dual Enrollment courses: **ACTG101**-Accounting, **WRIT 101** – College Writing, **WRIT 121T** – Technical Writing, **M121** – College Algebra, **STAT 216**- Statistics; **CAPP154** – MS Word; **CAPP156** MS Excel, **TASK113** Keyboarding & Document Processing, **Public Speaking COMX111**

Online courses: **MT Digital Academy:** **PSYX100** Intro to Psychology; **ECNS201** Microeconomics, **ECNS202** Macroeconomics, **ECNS203** Principles of Micro and Macro Economics; **BGEN105** Intro to Business

Other: *Work-based Learning Experiences with Terri Norman, Business Work Coop (tnorman@helenaschools.org) and Counselors*

POSTSECONDARY PROGRAM OF STUDY

| | Math | English | Major | Other |
|----------------------------|--|--|---|--|
| Semester 1 (15 credits) | M108T Bus Math OR M121 College Algebra OR STAT216 Intro to Stats | WRIT1121T Technical Writing OR WRIT101 College Writing | ACTG101 Accounting Procedures I and BGEN105 Intro Bus | CAPP154 MS Word OR TASK113 Keyboarding and Document Processing |
| Semester 2 (18 credits) | | | ACTG102 Accounting Procedures II ACTG205 Computerized Accounting ACTG125 Quickbooks BGEN 201 Business Ethics | HR110T Career Dev & Human Relations OR PSYX100 Intro to Psych OR SOCI 101 Intro to Sociology CAPP156 MS Excel |
| 15—Semester 3 Fall | | COMX111 Public Speaking OR BMGT205 Professional Communications | ACTG 180 Payroll Accounting ACTG201 Principles of Financial Accounting ACTG211 Income Tax Fundamentals | CAPP266 Advanced MS Excel BGEN235 Business Law I |
| 16—Semester 4 Spring | | | ACTG202 Principles of Managerial Accounting; ACTG 215 Foundations of Govt and Not for Profit Accounting; and ACTG299 Capstone Accounting | ECNS201 Microeconomics OR ECNS202 Macroeconomics OR ECNS203 Principles of Micro and Macro Economics ACTG298 Internship OR ACTG292 Independent Study OR TASK150 Customer Services |



Cluster Overview:

Careers in Health Science involve planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

Pathway Options:

- Diagnostic Services
- Therapeutic Services
- Health Informatics
- Support Services
- Biotechnology Research and Development

Occupation Examples:

Certified Nursing Assistant, Medical Assistant, Clinical Medical Assistant, Registered Nurse (RN), Licensed Practical Nurse (PN), Nurse Practitioner, Phlebotomist, Medical Administrative Specialist, Mental Health Specialist, Pharmacist, Pharmacy Technician, Dental Assistant/Hygienist, Dental Lab Technician, EMT/Paramedic, Home Health Aide, Athletic Trainer, Massage Therapist, Physical Therapist, Radiologic Technician, Respiratory Therapist, Audiologist, Chiropractor, Dentist, Dietician, Exercise Physiologist, Occupational Therapist, Optometrist, Physician, Physician's Assistant, Surgical Tech, Speech Language Pathologist, Nuclear Medicine Technologist, Medical Librarian, Radiologist,

Laboratory Scientist, Nutritionist, Pathologist, Veterinarian.

For a complete listing, go to: <http://online.onetcenter.org/find/career?c=8&q=Go>

POSTSECONDARY OPPORTUNITIES

Montana University System Degree and Program Inventory: <http://www.homepage.montana.edu/~mus/drginv/>
 Your Guide to Montana's Certificate and Associate Degree Programs: <http://mus.edu/twoyear/YourGuide.html>

MSU Two Year Colleges and Programs:
 City College MSUB—Billings (CC); Great Falls College MSU—Great Falls (GFC); Helena College UM—Helena (HC) Highlands College MT Tech—Butte(HC-Tech); Missoula College UM—Missoula (MC); Gallatin College MSU—Bozeman(GC)

Community Colleges:
 Dawson Community College (DCC)
 Flathead Valley Community College (FVCC)
 Miles Community College (MCC)

Tribal Colleges: Aaniiih Nakoda College (ANC);Blackfeet Community College(BCC); Chief Dull Knife College (CDKC);Fort Peck Community College (FPCC);Little Big Horn College (LBHC);Stone Child College (SCC);Salish Kootenai College (SKC)

Four Year Colleges/Universities:
 MSU—Bozeman; MSUB—Billings; MSUN—Havre; MT TECH—Butte; UM—Missoula; UMW—Dillon

HELENA COLLEGE UNIVERSITY OF MONTANA PROGRAMS

<http://www.umhelena.edu>

| | | |
|---------------------------------------|--|--|
| PROFESSIONAL CERTIFICATE | <ul style="list-style-type: none"> • Requires diploma or HiSET • Industry-recognized certification requires state or national exam • Typically non-credit • Complete in one year or less | Certified Nursing Assistant: 48 classroom hours & 27 clinical hours; State Certification Exam Pharmacy Technician: 50 total hours; PTCB Exam Clinical Medical Assistant: 140 classroom hours & 160 hours office externship; NCCT or NHA Exam Phlebotomy Technician: 90 classroom hours & 40 clinical hours; NHA Exam Medical Billing and Coding, Medical Transcription, Dental Assisting <i>available online</i> |
| CERTIFICATE OF APPLIED SCIENCE | <ul style="list-style-type: none"> • Requires diploma or HiSET • 30-45 credits; limited general education credits • Complete in one year or less | Medical Assisting |
| ASSOCIATE OF APPLIED SCIENCE | <ul style="list-style-type: none"> • Requires diploma or HiSET • 69-76 credits; includes 12-13 general education credits • Complete in two years <i>(if prepared academically in math and English)</i> | Medical Administrative Specialist Practical Nursing (LPN) |
| ASSOCIATE OF SCIENCE | <ul style="list-style-type: none"> • Requires diploma or HiSET • 65-77 credits; includes approximately 24 general education credits • Complete in three years <i>(if prepared academically in math and English)</i> | Registered Nursing (RN) Pre-Pharmacy Psychology/Sociology: Mental Health Direct Care |
| BACCALAUREATE | <ul style="list-style-type: none"> • Requires university admission standards • 128 credits (approximately) • Complete in four years <i>(if prepared academically)</i> | Helena College programs transfer to Montana Universities for degrees in Nursing, Pharmacy, & Mental Health, and others such as Athletic Training, Communicative Disorders, Food & Nutrition, Health & Human Performance, Health Care Informatics, Medical Technology, Occupational Safety and Health, Pre-Med. |

**Capital High School to Helena College degree program:
Certificate of Applied Science Medical Assisting**

BIG SKY PATHWAY



Recommended pathway from Capital High School to Helena College, with dual credit opportunities highlighted.

SUGGESTED HIGH SCHOOL COURSES

| | | | |
|------|--|---|---|
| 9th | Graduation Requirements & College Prep | English I, Algebra I, Earth Science, World Cultures, PE | Recommended CTE Cluster Foundation Course(s): Principles of Bio Med |
| | CTE and/or Electives | Principles of Bio Med, Career Planning | |
| 10th | Graduation Requirements & College Prep | English 2, Geometry, Biology I, PE/Health | Recommended CTE Pathway Courses: Basic Computer Skills, MS Word |
| | CTE and/or Electives | Human Body Systems, Fine Arts Elective | |
| 11th | Graduation Requirements & College Prep | English 3, American History, Algebra 2, AP Biology | Other Recommended CTE Courses: Human Body Systems, Medical Interventions, Biomedical Innovation Health Careers Exploration (CNA) |
| | CTE and/or Electives | Medical Interventions, Health Career Exploration (CNA), Basic Computer Skills: TASK113 Keyboarding & Document Processing | |
| 12th | Graduation Requirements & College Prep | English 4 & WRIT101 College Writing or WRIT121 Technical Writing , American Government, M121 College Algebra | Career & Technical Student Organization(s): HOSA – Health Occupations Student Association BPA – Business Professionals of Am. |
| | CTE and/or Electives | Biomedical Innovation, Health Career Exploration (CNA), CAPP 154 MS Word ; Intro to Psychology | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

- Advanced Placement:** English 3 and 4, Biology, Calculus, American History, American Government, European History, Spanish 5
- Dual Enrollment courses:** **WRIT101: College Writing**; **M121: WRIT121 Technical Writing**; **M121 College Algebra**; **CAPP154 MS Word**; **TASK 113 Keyboarding and Document Processing**
- Online courses:** MT Digital Academy: **PSYX100: Intro to Psychology**
- Other:** Job shadowing, work experience in medical office setting.

POSTSECONDARY PROGRAM OF STUDY

| | Math | English | Science/Allied Health | Office Technology |
|------------------------------------|--|---|---|---|
| Semester 1 (15 credits) | M108T Bus Math; M115 Linear Math; OR M121 College Algebra (3 cr) | WRIT101 College Writing OR WRIT121T Technical Writing (3 cr) | BIOH 201& 202 Anatomy & Physiology I OR AHMS144 Medical Terminology (3 cr) AHMS156 Medical Billing Fundamentals (3 cr) | CAPP153 MS PowerPoint |
| Semester 2 (15 credits) | | | AHMS160 Beginning Procedural Coding OR AHMS164 Beginning Diagnosis Coding (3 cr) | TASK113 Keyboarding and Document Processing (3 cr) |
| | | | SOC101 Intro to Sociology OR PSYX100 Intro to Psychology (3 cr) | TASK150 Customer Service Strategies OR TASK210 Office Success Strategies (3 cr) |
| | | | | CAPP131 Basic MS Office OR CAPP154 MS Word (3 cr) |

Capital High School to Helena College degree program:
AAS Medical Administrative Specialist



Recommended pathway from Capital High School to Helena College, with dual credit opportunities highlighted.

SUGGESTED HIGH SCHOOL COURSES

| | | | |
|------|--|---|--|
| 9th | Graduation Requirements & College Prep | English I, Algebra I, Earth Science, World Cultures, PE | Recommended CTE Cluster Foundation Course(s): Principles of Bio Med |
| | <i>CTE and/or Electives</i> | Principles of Bio Med, Career Planning, Fine Arts Elective | |
| 10th | Graduation Requirements & College Prep | English 2, Geometry, Biology I, PE/Health | Recommended CTE Pathway Courses: Human Body Systems; Basic Computer Skills; MS Word; MS Excel, Public Speaking |
| | <i>CTE and/or Electives</i> | Human Body Systems, Basic Computer Skills: TASK 113 Keyboarding Document Processing, DC with waiver | |
| 11th | Graduation Requirements & College Prep | English 3, American History, Algebra 2, AP Biology or Chemistry 1 | Other Recommended CTE Courses: Medical Interventions or Health Careers Exploration (CNA) Career Planning, Accounting |
| | <i>CTE and/or Electives</i> | Medical Interventions or Health Career Exploration (CNA), Intro to Psychology PSYX100; BGEN105 Intro to Business, CAPP156 MS Excel | |
| 12th | Graduation Requirements & College Prep | English 4 & WRIT101 College Writing or WRIT121 Technical Writing ; American Government; M121 College Algebra | Career & Technical Student Organization(s): HOSA – Health Occupations Student Association BPA – Business Professionals of America |
| | <i>CTE and/or Electives</i> | Biomedical Innovation or Health Career Exploration (CNA), CAPP 154 MS Word; ACTG 101 Accounting Procedures 1; COMX111 Intro to Public Speaking | |


ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

- Advanced Placement:** English 3 and 4, Biology, Calculus, American History, American Government, European History, Spanish 5
- Dual Enrollment courses:** **WRIT101: College Writing; M121; WRIT121 Technical Writing; M121 College Algebra; CAPP154 MS Word; TASK 113 Keyboarding and Document Processing; ACTG 101 Accounting Procedures, COMX111 Intro to Public Speaking**
- Online courses:** MTDA: **PSYX100: Intro to Psychology; BGEN105 Intro to Business**
- Other:** Program entry courses may apply to LPN, EMT, Medical Assisting, Medical Administrative Specialist, and other allied health fields.

POSTSECONDARY PROGRAM OF STUDY

| | Math | Communications | Science/Allied Health | Business |
|--------------------------------|--|---|---|---|
| Semester 1 (18 credits) | M108T Bus Math; M115 Linear Math; OR M121 College Algebra (3 cr) | COMX111 Intro to Public Speaking (3 cr) | BIOH 201& 202 Anatomy & Physiology I OR AHMS144 Medical Terminology (3 cr) | BGEN105 Intro to Business CAPP152 MS PowerPoint CAPP154 MS Word (3 cr) TASK113 Keyboarding and Document Processing (3 cr) |
| Semester 2 (15 credits) | ACTG101 Accounting Procedures I (3 cr) | WRIT101 College Writing OR WRIT121T Tech Writing (3 cr) | AHMS144 Medical Terminology (3 cr) | CAPP156 MS Excel CAPP158 Basic MS Access |
| Semester 3 (18 credits) | | | AHMS156 Medical Billing Fundamentals (3 cr) AHMS252 Computerized Medical Billing | BGEN220 Business Ethics (3); CAPP155 MS Publisher (3); CAPP256 Advanced MS (3) Excel; TASK150 Customer Service |
| Semester 4 (18 credits) | Choose one of the following: SOC101 Intro to Sociology, OR PSYX100 Intro to Psychology , OR HR110T Career Development and Human Relations (3 cr) | | AHMS160 Beginning Procedural Coding (3 cr); AHMS164 Beginning Diagnosis Coding (3 cr) | BMGT263 Legal Issues in Human Resources (3); TASK210 Office Success Strategies (3); TASK299 Integrated Office Capstone (3 cr) |

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| Capital High School to Helena College degree program: AAS Practical Nursing and AS Registered Nursing | BIG SKY PATHWAY  |
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Recommended pathway from Capital High School to Helena College, with dual credit opportunities highlighted.

SUGGESTED HIGH SCHOOL COURSES

| | | | |
|-------------|--|---|--|
| 9th | Graduation Requirements & College Prep | English I, Algebra I, Earth Science, World Cultures, PE | Recommended CTE Cluster Foundation Course(s): Principles of Bio Med, Basic Computer Skills |
| | <i>CTE and/or Electives</i> | Principles of Bio Med, Basic Computer Skills; Fine Arts Elective | |
| 10th | Graduation Requirements & College Prep | English 2, Geometry, Biology I, PE/Health | Recommended CTE Pathway Courses: Principles of Biomedical Science and Human Body Systems |
| | <i>CTE and/or Electives</i> | Human Body Systems, Athletic Training, Business related Technology courses | |
| 11th | Graduation Requirements & College Prep | English 3, American History, Algebra 2, Chemistry I or AP Biology | Other Recommended CTE Courses: Medical Interventions, Biomedical Innovation, Health Careers Exploration (CNA), Athletic Training (Sports Medicine) |
| | <i>CTE and/or Electives</i> | Medical Interventions, Athletic Training (Sports Medicine), Business related Technology courses, Health Career Exploration (CNA), Foreign Language, Fine Art Elective | |
| 12th | Graduation Requirements & College Prep | WRIT101 College Writing & Eng 4; LIT110 Intro to Lit , American Government, M121 College Algebra OR (M151 Pre-Calculus , Science Course (Chemistry 1, Chemistry 2, Biology 2, Science Seminar) | Career & Technical Student Organization(s): HOSA – Health Occupations Student Association |
| | <i>CTE and/or Electives</i> | Biomedical Innovation OR Health Career Exploration (CNA), Athletic Training (Sports Medicine) | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

Advanced Placement: English 3 and 4, Biology 2, Calculus, American History, American Government, European History, Spanish 5


Dual Enrollment courses: **WRIT 101: College Writing; M121: College Algebra; M151 Pre-calculus**

Online courses: MTDA: **PSYX100: Intro to Psych; NRSRG100: Intro to Nursing** (1cr.)

Other: *Student shadowing at Helena College. Program entry courses may apply.*

POSTSECONDARY PROGRAM OF STUDY

| | Math | English | Pre-Requisites | Other Pre-Requisites |
|-------------------|---|---------------------------------------|---|---|
| Semester 1 | M121 College Algebra OR higher math (3 cr) | WRIT101 College Writing (3 cr) | BIOH 201& 202 Anatomy & Physiology with Lab (4 cr) | NUTR 221 Basic Human Nutrition (3 cr) |
| Semester 2 | | | BIOH 211 & 212 Anat & Phys with Lab II (4 cr); NRSRG 100 Intro to Nursing (1 cr) | PSYX 100 Intro to Psychology (3 cr); CHMY 121 & 122 General and Inorganic Chemistry with Lab (4 cr) |
| | | | LPN Major | Other |
| Semester 3 | | | NRSRG 130/131 Fundamentals of Nursing (7 cr); NRSRG 135 Nursing Pharmacology (3 cr); NRSRG 138 Gerontology for Nursing (2 cr) | NRSRG 144 Core Concepts of Mental Health Nursing (2 cr) |
| Semester 4 | | | NRSRG 140 Core Concepts of Adult Nursing (7 cr); NRSRG 142 Maternal/Child Nursing (3 cr) | NRSRG 148 Leadership Issues (2 cr) |
| | | | RN Major | Other |
| Semester 5 | | | 11 NRSRG credits | SOCI 101 Intro to Sociology (3 cr) |
| Semester 6 | | | 9 NRSRG credits | BIOL 250 & 251 Microbiology (4 cr) |

| | |
|---|---|
| Capital High School to Helena College degree program: Associate of Science Psychology/Sociology (Mental Health) | BIG SKY PATHWAY  |
|---|---|

Recommended pathway from Capital High School to Helena College, with dual credit opportunities highlighted.

SUGGESTED HIGH SCHOOL COURSES

| | | | |
|-------------|--|--|---|
| 9th | Graduation Requirements & College Prep | English I, Algebra I or Honors Math I, Earth Science, World Cultures, PE | Recommended CTE Cluster Foundation Course(s): Basic Computer Skills, Career Planning |
| | <i>CTE and/or Electives</i> | Principles of Bio Med, Basic Computer Skills, Career Planning | |
| 10th | Graduation Requirements & College Prep | English 2, Geometry, Algebra II OR Honors Math II, Biology I, PE/Health | Recommended CTE Pathway Courses: Principles of Biomedical Science and Human Body Systems, Psychology, Sociology |
| | <i>CTE and/or Electives</i> | Human Body Systems, Career Planning, Business related Technology courses | |
| 11th | Graduation Requirements & College Prep | English 3, American History, M121 College Algebra & Intro to Stats (M216) ; OR Pre-calculus; Chemistry I or AP Biology | Career & Technical Student Organization(s): HOSA – Health Occupations Student Association; Peer Mentoring-Link Crew |
| | <i>CTE and/or Electives</i> | Medical Interventions, Health Career Exploration (CNA), Intro to Psychology ; Intro to Sociology , Foreign Language | |
| 12th | Graduation Requirements & College Prep | College Writing & Eng 4 ; LIT101 Intro to Lit , American Government, M151 Pre-Calculus or Calculus (M171) , , Chemistry 1, Chemistry 2 Hn, AP Biology, OR Science Seminar | Career & Technical Student Organization(s): HOSA – Health Occupations Student Association; Peer Mentoring-Link Crew |
| | <i>CTE and/or Electives</i> | Biomedical Innovation OR Health Career Exploration (CNA), Athletic Training (Sports Medicine), Foreign Language, Advanced Psychology, Peer Mentoring | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

College-level Placement: For M121 or M115, COMPASS math score of 70 or above or ACT math of 22 or above; For WRIT101, COMPASS Writing score of 90 or above or ACT Combined Writing of 18 or 7 on Essay Portion.

Advanced Placement: English 3 and 4, Biology, Calculus, American History, American Government, European History, Art History

Dual Enrollment courses: **WRIT 101: College Writing**; **M121 College Algebra**; **M151 Pre-Calculus**, **M171 Calculus**, **STAT216 Intro to Stats**; **COMX 111 Intro Public Speaking**, **Lit 110 Intro to Lit**

Online courses: MTDA: **PSYX100: Intro to Psychology**; **SOCI101: Intro to Sociology**

Other: *Job shadowing and work experience in local care facility, group home, etc.*

POSTSECONDARY PROGRAM OF STUDY

| | Math | Communicatn | Major | Other |
|-----------------------|---|--|--|---|
| Semester 1 (15 cr) | M121 College Algebra (3 cr) | WRIT101 College Writing (3 cr) | PSYX 100 Intro to Psychology (3 cr), PSYX 120 Research Methods I (3 cr) | LIT101 Intro to Literature (3 cr) |
| Semester 2 (15 cr) | STAT216 Intro to Statistics (3 cr) | WRIT 201 College Writing II (3 cr) | PSYX 230 Developmental Psychology (3 cr), SOC1 220 Race, Gender, and Class (3 cr) | SOCI101 Intro to Sociology (3 cr) |
| Semester 3 (16 cr) | BIOH104 Basic Human Biology (4 cr) | | PSYX 260 Fundamentals of Social Psychology (3 cr), PSYX 250 Fundamentals of Biological Psych (3 cr) | Humanities Elective (3 cr) ENNS201 Principles of Microeconomics (3 cr) |
| Semester 4 (16 cr) | | COMX111 Intro to Public Speaking (3 cr) | PSYX 273 Mental Health Paraprofessional Practice (3 cr), PSYX240 Fundamentals of Abnormal Psychology (3 cr), PSYX 298 Internship OR PSYX 299 Capstone (3 cr) | SPNS101 Elementary Spanish (4 cr) |

| | |
|---|---|
| Capital High School to Helena College degree program: Associate of Science Pre-Pharmacy | BIG SKY PATHWAY  |
|---|---|

Recommended pathway from Capital High School to Helena College, with dual credit opportunities highlighted.

SUGGESTED HIGH SCHOOL COURSES

| | | | |
|------|--|--|--|
| 9th | Graduation Requirements & College Prep | English I, Algebra I, Geometry, or Honors Math I,II, Earth Science, World Cultures, PE | Recommended CTE Cluster Foundation Course(s): Principles of Bio Med, Basic Computer Skills |
| | <i>CTE and/or Electives</i> | Principles of Bio Med, Basic Computer Skills or Career Planning | |
| 10th | Graduation Requirements & College Prep | English 2, Geometry or Honors Math II, Biology 1, PE/Health | |
| | <i>CTE and/or Electives</i> | Human Body Systems, Athletic Training, Career Planning, Business related Technology courses | |
| 11th | Graduation Requirements & College Prep | English 3, American History, Algebra II, College Algebra, or Pre-Calculus, Intro to Stats (M216) , Chemistry I or AP Biology | Other CTE Courses: Human Body Systems, Medical Interventions, Biomedical Innovation, Health Careers Exploration, Athletic Training & CPR |
| | <i>CTE and/or Electives</i> | Medical Interventions, Athletic Training, Health Career Exploration (CNA), Foreign Language | |
| 12th | Graduation Requirements & College Prep | WRIT101 College Writing , LIT 110 Intro to Lit , American Government, M171 Calculus ; AP Chemistry, AP Biology OR Science Seminar; COMX111 Public Speaking | Career & Technical Student Organization(s): HOSA – Health Occupations Student Association |
| | <i>CTE and/or Electives</i> | Biomedical Innovation, Athletic Training (Sports Medicine), Health Career Exploration (CNA), Foreign Language | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

College-level Placement: For M121 or M115, COMPASS math score of 70 or above or ACT math of 22 or above; For WRIT101, COMPASS Writing score of 90 or above or ACT Combined Writing of 18 or 7 on Essay Portion.

Advanced Placement: English 3 and 4, Psychology, Calculus, American History, American Government, European History

Dual Enrollment courses: **WRIT 101: College Writing**; **M121 College Algebra**; **M151 Calculus**, **STAT216 Intro to Stats**; **COMX111 Intro to Public Speaking**

Online courses: MT Digital Academy: **PSYX100: Intro to Psychology**; **ANTY101 Anthropology and the Human Experience**

Other: *Work experience in local drug store or at hospital.*

POSTSECONDARY PROGRAM OF STUDY

| | Math | Communications | Major | Other |
|-----------------------|--|--|---|--|
| Semester 1 (18 cr) | M171 Calculus (4 cr) | WRIT101 College Writing (3 cr) | BIOH 201 Anatomy & Physiology with Lab (4 cr); CHMY141, 142 College Chemistry I & Lab (4 cr) | LIT110 Intro to Lit (3 cr) |
| Semester 2 (17 cr) | STAT216 Intro to Statistics (3 cr) | WRIT 201 College Writing II (3 cr) | BIOH 211 Anatomy & Physiology with Lab II (4 cr); CHMY 143, 144 College Chemistry II & Lab (4 cr) | PSYX 100 Intro to Psych (3 cr); |
| Semester 3 (15 cr) | | | BIOB260 Cell and Molecular Biology (4 cr) CHMY221,222 Organic Chemistry & Lab (5 cr) | Humanities Elective (3 cr) ANTY101 Anthropology (3 cr) |
| Semester 4 (15 cr) | | COMX111 Intro to Public Speaking (3 cr) | CHMY 223, 224 Organic Chemistry & Lab (5 cr) | PHSX205, 206 College Physics & Lab (4 cr) ENNS201 Principles of Microeconomics (3 cr) |



Cluster Overview:

Information Technology careers encompass entry level, technical, and professional careers related to the design, development, support and management of hardware, software, multimedia, and systems integration services.

Pathway Options:

- Network Systems
- Information Support and Services
- Web and Digital Communications
- Programming and Software Development

Occupation Examples:

Animator, Database Administrator, Data Systems Designer, E-Business Specialist, Game Developer, Information Technology Engineer Media Specialist, Network Administrator, Network Security Analyst, PC Support Specialist, Programmer, Software Applications Specialist, Systems Administrator, Telecommunications Network Technician, User Support Specialist, Virtual Reality Specialist, Web Architect/Designer

For a complete listing, go to:

<http://online.onetcenter.org/find/career?c=11&q=Go>

MONTANA POSTSECONDARY OPPORTUNITIES

Montana University System Degree and Program Inventory: <http://www.homepage.montana.edu/~mus/drqinv/>
 Your Guide to Montana's Certificate and Associate Degree Programs: <http://mus.edu/twoyear/YourGuide.html>

Two Year Colleges and Programs:

City College MSUB—Billings (CC); Great Falls College MSU—Great Falls (GFC); Helena College UM—Helena (HC) Highlands College MT Tech—Butte(HC-Tech); Missoula College UM—Missoula (MC); Gallatin College MSU—Bozeman(GC)

Community Colleges:

Dawson Community College (DCC)
 Flathead Valley Community College (FVCC)
 Miles Community College (MCC)

Tribal Colleges: Aaniiih Nakoda College (ANC); Blackfeet Community College(BCC); Chief Dull Knife College (CDKC); Fort Peck Community College (FPCC); Little Big Horn College (LBHC); Stone Child College (SCC); Salish Kootenai College (SKC)

Four Year Colleges/Universities:

MSU—Bozeman;
 MSUB—Billings;
 MSUN—Havre;
 MT Tech—Butte;
 UM—Missoula;
 UMW—Dillon

HELENA COLLEGE UNIVERSITY OF MONTANA PROGRAMS

<http://www.umhelena.edu>

| | | |
|---|--|---|
| <p>PROFESSIONAL CERTIFICATE</p> | <ul style="list-style-type: none"> • Requires diploma or HiSET • Industry-recognized certifications • Typically non-credit • Complete in one year or less | <p>Online Instruction Certificate Digital Arts Certificate Webmaster Video Game Design and Development</p> |
| <p>ASSOCIATE OF SCIENCE DEGREE</p> | <ul style="list-style-type: none"> • Requires diploma or HiSET • 62-63 credits; includes 9 general ed credits • Complete in two years <i>(if prepared academically in math and English)</i> | <p>Computer Technology Network Administration Computer Technology Programming</p> |
| <p>BACCALAUREATE DEGREE</p> | <ul style="list-style-type: none"> • Requires university admission standards • 128 credits (approximately) • Complete in four years | <p>Helena College programs transfer to Montana Universities for degrees in specialties such as Computer Engineering, Network Technology, Computer Science, Computer Information Systems, etc.</p> |

| | |
|--|---|
| Capital High School to Helena College degree program: Computer Technology AAS Programming Option | BIG SKY PATHWAY  |
|--|---|

Recommended pathway from Capital High School to Helena College with dual credit opportunities printed in red.

SUGGESTED HIGH SCHOOL COURSES

| | | | |
|-------------|---|--|---|
| 9th | Graduation Requirements Workforce/College Prep | English I, Algebra I, Earth Science, World Cultures, Physical Ed | Recommended CTE Cluster Foundation Course(s): Basic Computer Skills & Tech Skills for Life, Money Management |
| | <i>CTE and/or Electives</i> | Basic Computer Skills & Tech Skills for Life | |
| 10th | Graduation Requirements Workforce/College Prep | English II; Geometry; Biology; Health; Fine Art Elective | Recommended CTE Pathway Courses: Computer Skills 1-3 Intro to Programming; Coding |
| | <i>CTE and/or Electives</i> | Computer Science; Money Management | |
| 11th | Graduation Requirements Workforce/College Prep | English III, American History, College Algebra (M121) & STAT216 Intro to Stats , Chemistry | Other Recommended CTE Courses: Business; Microsoft Word and Microsoft Excel, CNC Milling Operations, Robotics |
| | <i>CTE and/or Electives</i> | Computer Science; (CS110); CAPP 156 MS Excel; CAPP 154 MS Word | |
| 12th | Graduation Requirements Workforce/College Prep | English IV and College Writing (WRIT101) or WRIT121T Technical Writing , American Government; M151Pre-Calc | Career & Technical Student Organization(s): Helena Robotics, Business Professionals of America |
| | <i>CTE and/or Electives</i> | MCH234 CNC Milling Operations ; Small Business Management, Robotics, Psychology or Sociology | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

Advanced Placement: AP U.S. History; AP Am. Government; AP English Literature, AP English Language, AP European History, AP Spanish


Dual Enrollment courses: **WRIT121T Technical Writing; WRIT 101 College Writing; M121 College Algebra; M151 Pre-Calculus; CS110 Computer Science (CC) equals CSCI100 (HC) CNC Milling Operations 1; CAPP156 Excel; COMX111 Intro to Public Speaking**

Online courses: MTDA: **CSCI107 Joy & Beauty of Computing**; Code MT: **Coding**

Other: Robotics Competition; Science Olympiad, APP Competitions

POSTSECONDARY PROGRAM OF STUDY

| | Math | English | Major | Other |
|------------------------------|--|--|---|---|
| Semester 1 (15 CR) | M121 College Algebra OR M115 Linear Mathematics 3CR | WRIT101 College Writing OR WRIT121T Technical Writing 3CR | CSCI100 Intro to Programming 3CR OR CSCI 107 Joy & Beauty 3CR BMIS285 Fundamentals of Management Information Systems 3CR | ITS164 Networking Fundamentals 3CR OR NTS104 Intro to Networks 3CR |
| Semester 2 (18 CR) | | | CSCI111 Programing with Java I 4CR CSCI240 Databases & SQL 3CR ITS280 Comp. Repair & Maint 4CR MART145 Web Design 3CR | SOCI101 Intro to Sociology /or PSYX100 Into to Psychology /or HR110T Career Development and Human Relations 3CR |
| Semester 3 (14 CR) | | | CSCI DB Triggers, ORM, NoSQL 3CR CSCI211 Client Side Web Dev 3CR CSCI221 Syst. Analysis & Des. 4CR CSCI236 XML Data Processing 2CR CSCI276 Application Security 2CR | |
| Semester 4 (15 CR) | | | CSCI121 Program w/Java II 4CR CSCI238 Mobile Apps 3CR CSCI206 .NET Applications 3CR CSCI Web Services 3CR | CSCI298 Internship OR CSCI299 Thesis/Capstone 2CR |

| | |
|---|---|
| Capital High School to Helena College degree program: Computer Technology AAS Network Administration Option | BIG SKY PATHWAY  |
|---|---|

Recommended pathway from Capital High School to Helena College, with dual credit opportunities printed in red.

SUGGESTED HIGH SCHOOL COURSES

| | | | |
|-------------|---|--|--|
| 9th | Graduation Requirements, Workforce & College Prep | English I, Algebra I, Math I or II Honors, Earth Science, World Cultures, Phys Ed | Recommended CTE Cluster Foundation Course(s): Computer Tech Skills Microsoft Word and Microsoft Excel |
| | <i>CTE and/or Electives</i> | Basic Computer Skills & Tech Skills for Life | |
| 10th | Graduation Requirements, Workforce & College Prep | English II; Geometry or Math II; Biology; Health; Fine Art Elective | Recommended CTE Pathway Courses: Computer Science, Computer Science (CS 110) |
| | <i>CTE and/or Electives</i> | Computer Science, Robotics | |
| 11th | Graduation Requirements Workforce & College Prep | English III; American History, College Algebra (M121) , Chemistry I or AP Biology | Other Recommended CTE Courses: CNC Machining, Graphic Web Design, Robotics |
| | <i>CTE and/or Electives</i> | Computer Science, Microsoft Word; Microsoft Excel | |
| 12th | Graduation Requirements, Workforce & College Prep | WRIT121T Technical Writing or WRIT101 College Writing and English IV (1 semester); American Gov't, Pre-Calculus, Chemistry II or Physics | Career & Technical Student Organization(s): Helena Robotics, Business Professionals of America |
| | <i>CTE and/or Electives</i> | Computer Science (CS110) , Graphic Web Design, Sociology, Psychology | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

Advanced Placement or IB courses: AP U.S. History; AP Am. Government; AP Biology, AP English Literature, AP English Language, AP European History, AP Spanish

Dual Enrollment courses: **WRIT121T Technical Writing; WRIT 101 College Writing; COMX111 Intro To Public Speaking; M121 College Algebra; CAPP154 Microsoft Word, CAPP156 Microsoft Excel; CS110 Computer Science (CC) equals CSCI100 (HC)**

Online courses: MTDA: **CSCI107 Joy & Beauty of Computing; PSYX100 Into to Psychology; HR110T Career Development and Human Relations**

Other: Robotics Competition; Science Olympiad; Opportunities for Evening Courses at Helena College

POSTSECONDARY PROGRAM OF STUDY

| | Math | English | Major | Other |
|------------------------------|--|--|--|--|
| Semester 1 (16 CR) | M111 Technical Math OR M115 Linear Mathematics 3CR | WRIT101 College Writing OR WRIT121T Technical Writing 3CR | CSCI100 Intro to Programming 3CR OR CSCI107 Joy & Beauty of Computing 3CR BMIS285 Fundamentals of Management Information Systems 3CR NTS104 CCNA 1: Intro to Networks 4CR | |
| Semester 2 (16 CR) | | | NTS105 CCNA 2: Routing & Switching 3CR MART145 Web Design 3CR ITS224 Intro to Linux 3 CR ITS280 Comp. Repair & Maintenance. 4CR | SOCI101 Intro to Sociology OR PSYX100 Into to Psychology OR HR110T Career Development and Human Relations 3CR |
| Semester 3 (15 CR) | | | NTS205 CCNA 4:Connecting Networks 3CR CSCI221 Syst. Analysis & Des. 4CR CSCI240 Databases & SQL 3CR ITS255 IP Telephony 3CR | ITS230 -- Administrative Scripting using PowerShell 2CR ITS231 --Admin Scripting using Python 2CR |
| Semester 4 (18 CR) | | | CSCI212 Web Server Admin 3CR ITS212 Network Operating System Server Admin 4CR ITS218 Network Security 3CR NTS204 CCNA 3 Scaling and Networks 3CR | CSCI298 Internship OR CSCI299 Thesis/Capstone 2CR... |



Cluster Overview:

Planning, preparing and managing legal, public services, protective services, and homeland security, including professional, technical and support services.

Pathway Options:

- Correction Services
- Emergency and Fire Management Services
- Security and Protective Services
- Law Enforcement Services
- Legal Services

Occupation Examples:

Firefighter, Judge, Lawyer, Legal Assistant, Paralegal, Police Officer, Forest Fire Fighter, Probation and Parole Officer, Security Guard, Criminal Investigator

For a complete listing, go to:

<http://online.onetcenter.org/find/career?c=12&q=Go>

MONTANA POSTSECONDARY OPPORTUNITIES

*Montana University System Degree and Program Inventory: <http://www.homepage.montana.edu/~mus/drqinv/>
Your Guide to Montana's Certificate and Associate Degree Programs: <http://mus.edu/twoyear/YourGuide.html>*

MSU Two Year Colleges and Programs:

City College MSUB—Billings (CC); Great Falls College MSU—Great Falls (GFC); Helena College UM—Helena (HC) Highlands College MT Tech—Butte(HC-Tech); Missoula College UM—Missoula (MC); Gallatin College MSU—Bozeman(GC)

Community Colleges:

Dawson Community College (DCC)
Flathead Valley Community College (FVCC)
Miles Community College (MCC)

Tribal Colleges:

Aaniiih Nakoda College (ANC); Blackfeet Community College(BCC); Chief Dull Knife College (CDKC); Fort Peck Community College (FPCC); Little Big Horn College (LBHC); Stone Child College (SCC); Salish Kootenai College (SKC)

Four Year Colleges/Universities:

MSU—Bozeman; MSUB—Billings; MSUN—Havre; MT Tech—Butte; UM—Missoula; UMW—Dillon

HELENA COLLEGE UNIVERSITY OF MONTANA PROGRAMS

<http://www.umhelena.edu>

| | | |
|--|--|---|
| PROFESSIONAL CERTIFICATE | <ul style="list-style-type: none"> • Requires diploma or HiSET • Industry-recognized certification requires state or national exam • Typically non-credit • Complete in one year or less | Wildland Firefighter and Disaster Training |
| CERTIFICATE OF APPLIED SCIENCE | <ul style="list-style-type: none"> • Requires diploma or HiSET • 39 credits; including 9 general education credits • Complete in one year | Legal Support Specialist |
| ASSOCIATE OF APPLIED SCIENCE DEGREE | <ul style="list-style-type: none"> • Requires diploma or HiSET • 70 credits; includes 9 general ed credits • Complete in two years <i>(if prepared academically in math and English)</i> | Fire and Rescue Technology |
| ASSOCIATE OF SCIENCE DEGREE | <ul style="list-style-type: none"> • Requires diploma or HiSET • 60-61 credits; includes 31 general ed credits • Complete in two years <i>(if prepared academically in math and English)</i> | Social and Psychological Science option for transfer to Criminal Justice MSU Northern |
| BACCALAUREATE DEGREE | <ul style="list-style-type: none"> • Requires 4-year college prep for admission • 128 credits (approximately) • Complete in four years | Criminal Justice — MSUB, MSUN Sociology/Criminology Option — UM |

Capital High School to Helena College degree program:
Legal Support Specialist Certificate of Applied Science

BIG SKY PATHWAY PROPOSAL



SUGGESTED HIGH SCHOOL COURSES

| | | | |
|------|---|---|---|
| 9th | Graduation Requirements Workforce/College Prep | English I, Algebra, Earth Science, World Cultures, Phys Ed1 | Recommended CTE Cluster Foundation Course(s): Basic Computer Skills, Tech Skills for Life, Money Management, Office Management |
| | <i>CTE and/or Electives</i> | <i>Basic Computer Skills, Tech Skills for Life</i> | |
| 10th | Graduation Requirements Workforce/College Prep | English II, Geometry, Biology, PE/Health | Recommended CTE Pathway Courses: Microsoft Excel (CAPP156), Microsoft Word (CAPP154), Law and Justice, Technical Writing (WRIT121T) |
| | <i>CTE and/or Electives</i> | <i>Money Management, Fine Arts Elective</i> | |
| 11th | Graduation Requirements Workforce/College Prep | English III, American History, Algebra II | Other Recommended CTE Courses: Career Planning, Accounting |
| | <i>CTE and/or Electives</i> | <i>Office Management, Intro To Public Speaking (COMX111) Microsoft Word (CAPP154)</i> | |
| 12th | Graduation Requirements Workforce/College Prep | English 4 & College Writing (WRIT101) or Technical Writing (WRIT121T) , American Government, College Algebra (M121) | Career & Technical Student Organization(s): Business Professionals of America |
| | <i>CTE and/or Electives</i> | <i>Microsoft Excel (CAPP156), Sociology, Law and Justice</i> | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

Advanced Placement: AP U.S. History; AP Am. Government; AP English Literature, AP English Language, AP European History, AP Spanish

Dual Enrollment courses: WRIT121T Technical Writing; WRIT 101 College Writing; COMMX111 Intro To Public Speaking; M121 College Algebra; CAPP 156 Excel; CAPP154 Word; Keyboarding and Document Processing TASK113

Online courses: Helena College: Office Success Strategies TASK210; Customer Service Strategies TASK150

Other: On-campus experience, student shadowing, Work-based learning with Terri Norman and counselors, Business Work Coop

Prior to course registration, please check ACT/SAT/Compass score requirements to make sure you are qualified to take any dual credit course.

POSTSECONDARY PROGRAM OF STUDY

| | Math | English | Major | Other |
|------------|--|--|--|---|
| Semester 1 | College Algebra M121 (3) or OR Business Math M108T (3) | College Writing WRIT 101 or Intro to Tech Writing WRIT121T (3) | Microsoft Excel CAPP156 (3) Legal Terminology OT161 (3) Intro to Paralegal OT107 (3) | Keyboarding and Document Processing TASK113 OR MS Word CAPP154 (3) MS PowerPoint CAPP153 or MS Publisher CAPP155 (3) |
| Semester 2 | | | Advanced MS Word CAPP254 (3) Intro to Legal Research OT165 (2) Intro to Civil Litigation and MT Courts OT223 (2) Customer Service Strategies TASK150 (3) Office Success Strategies TASK210 (3) | Advanced Excel CAPP266 OR Basic MS Access CAPP153 (3) |

Capital High School to Helena College degree program:
Fire and Rescue AAS

BIG SKY PATHWAY PROPOSAL



SUGGESTED HIGH SCHOOL COURSES

| | | | |
|------|---|---|---|
| 9th | Graduation Requirements Workforce/College Prep | English I; Algebra I; Earth Science; World Cultures; Phys Ed I | Recommended CTE Cluster Foundation Course(s): Health Careers Exploration or PBS and HBS, Computer Skills |
| | <i>CTE and/or Electives</i> | Principles of Biomedical Science, | |
| 10th | Graduation Requirements Workforce/College Prep | English II; Geometry; Biology; PE/Health | Recommended CTE Pathway Courses: Technical Math, Technical Writing, Personal Wellness, Physical Conditioning, Weight Training |
| | <i>CTE and/or Electives</i> | Human Body Systems, Fine Arts Elective, Basic Computer Skills | |
| 11th | Graduation Requirements Workforce/College Prep | English III; Technical Math (M111T) ; Chemistry; US History | Other Recommended CTE Courses: Psychology; Intro to Mechanical Technology Basic Wildland Firefighting; EMT |
| | <i>CTE and/or Electives</i> | Personal Wellness, Physical Conditioning, Intro to Mechanical Technology | |
| 12th | Graduation Requirements Workforce/College Prep | English IV & College Writing (WRIT101) OR Technical Writing (WRIT121T) American Gov't; College Algebra (M121) , Physics | Career & Technical Student Organization(s): HOSA |
| | <i>CTE and/or Electives</i> | Advanced Weight Training, AP Psychology | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

Onsite afternoon, evening, or weekend college courses at Helena College: EMT EPC130 (M and Th 6-10 pm) and Basic Wildland Firefighting FIRE106, CPR Training (Continuing Education)

Advanced Placement or IB courses: AP Psychology

Dual Enrollment courses: **Technical Writing WRIT121T, College Writing WRIT101; College Algebra M121; Tech Math M111T**

Online courses: MTDA: Introduction to Health Occupations; **Human Relations HR110T**

Other: Work Experience: Volunteer Fire Department

POSTSECONDARY PROGRAM OF STUDY (72 credits)

| | Math | English | Major | Other |
|------------|---|----------------------------------|--|---|
| Semester 1 | Technical Math M111T (3) or College Algebra M121 (3) | | Emergency Medical Technician ECP130 (4) Intro to Fire Service FIRE101 (3) Fire Service II FIRE102 (3) Fire Fighter Safety FIRE103 (3) | Personal Physical Fitness I FIRE107 (1) |
| Semester 2 | | | Wildland Fire Fighting FIRE106 (3) Hazardous Materials FIRE110 (3) Emergency Services Customer Service FIRE120 (2) Incident Command FIRE 121(1) Emergency Equipment Maintenance FIRE 125 (2) Fire Apparatus Operation FIRE130 (3) Fire Fighting Tactics and Strategies FIRE140 (3) | Personal Physical Fitness II FIRE108 (1) |
| Semester 3 | | Tech Writing WRIT121T (3) | Instructional Methodologies FIRE202 (2) Fire Protection Systems FIRE234 (3) Fire Inspection FIRE241 (3) Rescue FIRE242 (3) Fire Investigation FIRE260 (3) Building Construction FIRE261 (1) | |
| Semester 4 | | | Aircraft Rescue & Fire Fighting Basic Training FIRE210 (ARFF) (2) Fire Streams FIRE215 (2) Fire Officer FIRE225 (2) Basic Wildland Supervision FIRE232 (2) Fire Ground Operations FIRE250 (2) Fire Prevention FIRE270 (3) Capstone FIRE288 or Internship (3) | Human Relations HR110T OR Fundamentals of Organizational Psychology PSYX161 |

Capital High School to Helena College degree program:
Criminal Justice – Associate of Art Transfer Degree

BIG SKY PATHWAY PROPOSAL



SUGGESTED HIGH SCHOOL COURSES

| | | | |
|------|--|--|---|
| 9th | Graduation Requirements Workforce/College Prep | English I, Algebra I, Earth Science, World Cultures, Phys Ed I | Recommended CTE Cluster Foundation Course(s): Basic Computer Skills, Money Management |
| | <i>CTE and/or Electives</i> Note: 8 total units required to graduate | <i>Basic Computer Skills, Money Management</i> | Recommended CTE Pathway Courses: Law and Justice, Public Speaking, Psychology |
| 10th | Graduation Requirements Workforce/2-Year College Prep | English II, Geometry, Biology, PE/Health | Other Recommended CTE Courses: Microsoft Excel (CAPP156), Microsoft Word (CAPP154), Career Planning, Accounting |
| | <i>CTE and/or Electives</i> | <i>Fine Art, Microsoft Excel (CAPP156), Microsoft Word (CAPP154)</i> | |
| 11th | Graduation Requirements Workforce/2-Year College Prep | English III, Algebra II, American History, Chemistry | Career & Technical Student Organization(s): Business Professionals of America |
| | <i>CTE and/or Electives</i> | <i>Intro To Public Speaking (COMX111), Accounting</i> | |
| 12th | Graduation Requirements Workforce/2-Year College Prep | English IV & College Writing (WRIT101), American Government, College Algebra (M121), Intro to Stats (STAT216) | |
| | <i>CTE and/or Electives</i> | <i>Psychology, Sociology, Law and Justice</i> | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

Advanced Placement: U.S. History; Am. Government; English Literature, English Language, European History, Spanish

Dual Enrollment courses: WRIT 101 College Writing; COMX111 Intro To Public Speaking; M121 College Algebra; STAT216 Intro to Statistics

Online courses: MT Digital Academy: Intro to Psychology PSYX100

Other: Work experience in law office or with law enforcement agency

Prior to course registration, please check ACT/SAT/Compass score requirements to make sure you are qualified to take dual credit.

POSTSECONDARY PROGRAM OF STUDY

| | Math | English | Major | Other |
|------------|---|--|--|--|
| Semester 1 | College Algebra M121 or Math for Lib Arts M145; 3 Cr | College Writing 1 WRIT 101 3 Cr | Intro to Psychology PSYX100 3 Cr; Intro to Sociology SOCI101 3 Cr | 4 credits of science: Discover Biology BIO101 & Lab OR Intro to Astronomy ASTR110 & Lab; OR Intro to Gen Chem CHMY121 & lab; OR Physical World PHSX106 & lab |
| Semester 2 | | College Writing 2 WRIT 201; or Intro to Public Speaking COMX111; 3 CR | Intro to Criminal Justice CJUS121; 3 Cr State & Local Gov't PSCI260; 3 Cr | Any lab science; 4 or |
| Semester 3 | | | Intro to American Gov't PSCI210 3 or Fundamentals of Abnormal Psych PSYX240 3Cr, | Global Virtual Culture ARTH160; OR Enjoyment of Music MUSI101; 3 Cr AND Any Humanities course 3 Cr, Basic MS Office CAPP131 3Cr |
| Semester 4 | | | Internship 2-6 Cr | Intro to Native Am Studies NASX105; 3 Cr or Free Electives 4-8 Cr |



Cluster Overview:
Jobs in the manufacturing career cluster involve planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities, such as production planning and control, maintenance, and manufacturing/process engineering.

- Pathway Options:**
- Production
 - Manufacturing & Production Process Development
 - Maintenance, Installation and Repair
 - Quality Assurance
 - Logistics and Inventory Control
 - Health, Safety and Environmental Assurance

Occupation Examples:
Assembler, MIG Welder, TIG Welder, Machine Operator, Sheet Metal Worker, Mechanical Engineer, Industrial Engineer, Quality Control Technician, Safety Technician, Safety Engineer, Dispatcher, Production Manager, Purchasing Agent, Logistician

For a complete listing, go to:
<http://online.onetcenter.org/find/career?c=13&q=Go>

MONTANA POSTSECONDARY OPPORTUNITIES

Montana University System Degree and Program Inventory: <http://www.homepage.montana.edu/~mus/drginv/>
Your Guide to Montana's Certificate and Associate Degree Programs: <http://mus.edu/twoyear/YourGuide.html>

MSU Two Year Colleges and Programs:
City College MSUB—Billings (CC); Great Falls College MSU—Great Falls (GFC); Helena College UM—Helena (HC) Highlands College MT Tech—Butte(HC-Tech); Missoula College UM—Missoula (MC); Gallatin College MSU—Bozeman(GC)

Community Colleges:
Dawson Community College (DCC)
Flathead Valley Community College (FVCC)
Miles Community College (MCC)

Tribal Colleges: Aaniiih Nakoda College (ANC);Blackfeet Community College(BCC); Chief Dull Knife College (CDKC);Fort Peck Community College (FPCC);Little Big Horn College (LBHC);Stone Child College (SCC);Salish Kootenai College (SKC)

Four Year Colleges/Universities:
MSU—Bozeman; MSUB—Billings; MSUN—Havre; MT Tech—Butte; UM—Missoula; UMW—Dillon

HELENA COLLEGE UNIVERSITY OF MONTANA PROGRAMS

<http://www.umhelena.edu>

| | | |
|--|--|--|
| PROFESSIONAL CERTIFICATE | <ul style="list-style-type: none"> • Requires diploma or HiSET • Industry-recognized certification requires state or national exam • Typically non-credit • Complete in one year or less | OSHA 510: Occupational Safety and Health Standards for Construction OSHA 511: Occupational Safety and Health Standards for General Industry OSHA 500 and 501: Trainer courses for OSHA |
| APPRENTICESHIP | <ul style="list-style-type: none"> • Requires diploma or HiSET • Must be at least 18 • Minimum 2,000 hours of supervised experience | Sheet Metal Apprenticeship with AAS |
| CERTIFICATE OF APPLIED SCIENCE | <ul style="list-style-type: none"> • Requires diploma or HiSET • 39 credits; including 9 general education credits • Complete in one year | Welding Technology Machine Tool Technology |
| ASSOCIATE OF APPLIED SCIENCE DEGREE | <ul style="list-style-type: none"> • Requires diploma or HiSET • 69-71 credits; includes 9 general ed credits • Complete in two years (<i>if prepared academically in math and English</i>) | Computer-Aided Manufacturing Industrial Welding and Metal Fabrication Metals Technology |
| BACCALAUREATE DEGREE | <ul style="list-style-type: none"> • Requires 4-year college prep for admission • 128 credits (approximately) • Complete in four years | Industrial Engineering, Construction Engineering Technology, Technology Education: Montana State University Etc. |



SUGGESTED HIGH SCHOOL COURSES

| | | | |
|------|---|--|--|
| 9th | Graduation Requirements Workforce/College Prep | English 1, Algebra I, Earth Science, World Cultures, Phys Ed1, | Recommended CTE Cluster Foundation Course(s): Industrial Tech, Welding I, Welding and Machining II, Welding and Machining III |
| | <i>CTE and/or Electives</i> | Industrial Technology, Construction I; Drafting I | |
| 10th | Graduation Requirements Workforce/College Prep | English 2, Geometry, Biology, PE/Health, Fine Art Elective | Recommended CTE Pathway Courses: Construction 1-3; Industrial Tech, Welding I, Welding and Machining II, Welding and Machining III (Milling Operations) |
| | <i>CTE and/or Electives</i> | Welding I, Carpentry/Cabinet Making II | |
| 11th | Graduation Requirements Workforce/College Prep | English 3, M111T Technical Math (DC) , Chemistry, US History | Other Recommended CTE Courses: Computer Tech Skills Drafting I, Drafting II –Mechanical, CAD, Carpentry, Automotive, Accounting I (DC) |
| | <i>CTE and/or Electives</i> | Welding and Machining II; Carpentry III; Drafting II | |
| 12th | Graduation Requirements Workforce/College Prep | English 4 and WRIT101 College Writing (DC) , or WRIT 121T Technical Writing , US Government | Career & Technical Student Organization(s): SkillsUSA |
| | <i>CTE and/or Electives</i> | Welding and Machining III - Certification Available – AWS 3G and 4G 3/8 Plate Test minimum; WLDG 112 Cutting Processes; MCH234 Milling Operations Level 1 | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

Dual Enrollment courses: **M111T Technical Mathematics; M12 College Algebra; WRIT121T Technical Writing, WRIT101 College Writing; WLDG 112 Cutting Processes; CSTN 100 Fundamentals of Construction Technology (thru NCOTI exam)**

Online courses: **Montana Digital Academy - [HR 110T Human Relations](#)**

Other: Work-based Learning: Business Work Coop, Job Shadow, and Student Shadow at Helena College

POSTSECONDARY PROGRAM OF STUDY

| | Math | English | Major | Other |
|------------|--|--|--|------------------------------------|
| Semester 1 | M111T Technical Mathematics (3) | | WLDG 107 Industrial Safety (2); WLDG 112, Cutting Processes (3) ; WLDG 135 GMAW Theory and Practical Application (5); WLDG 181 Shielded Metal Arc Welding (SMAW) Theory and Practical Application (5) | |
| Semester 2 | | | WLDG 117 Blueprint Reading and Weld Symbols (3); WLDG 131 Layout, Metal Forming & and Fabrication (6), WLDG 140 Intro Gas Tungsten ARC Welding (GTAW) - Integrated Lab (3); WLDG 151 Shop Practices (4); | |
| Semester 3 | | WRIT 121T Introduction to Technical Writing (3) | WLDG 217 Advanced Blueprint (2); WLDG 225 Structural Fabrication (2); WLDG 230 Field Welding and Processes (2), WLDG 243 Advanced Metal Fabrication I (6); WLDG 255 CNC Burn Table Programming and Operation (3) | |
| Semester 4 | | | WLDG 213 Pipe Welding Lab I (5); WLDG 244 Advanced Metal Fabrication II (4); WLDG 245 Metal Fabrication Design and Construction (5); WLDG 265 MSHA Safety Training (1) | HR 100T Human Relations (2) |



SUGGESTED HIGH SCHOOL COURSES

| | | | |
|------|---|--|--|
| 9th | Graduation Requirements Workforce/College Prep | English I, Algebra I, Earth Science, World Cultures, Phys Ed1, Fine Arts Elective | Recommended CTE Cluster Foundation Course(s): Industrial Tech, Basic Computer Skills, Career Planning |
| | <i>CTE and/or Electives</i> | Industrial Technology, Basic Computer Skills, Career Planning | |
| 10th | Graduation Requirements Workforce/College Prep | English II, Geometry, Biology, PE/Health | Recommended CTE Pathway Courses: Industrial Tech, Welding I, Welding and Machining II, Welding and Machining III |
| | <i>CTE and/or Electives</i> | Welding I, Drafting I | |
| 11th | Graduation Requirements Workforce/College Prep | English III, Algebra II, Chemistry, US History | Other Recommended CTE Courses: Drafting I, Drafting II –Mechanical, CAD, Carpentry |
| | <i>CTE and/or Electives</i> | Welding and Machining II; Drafting II | |
| 12th | Graduation Requirements Workforce/College Prep | English 4 and WRIT101 College Writing (DC), OR WRIT 121T Technical, M111T Technical Math (DC), Physics, US Government | Career & Technical Student Organization(s): Skills USA |
| | <i>CTE and/or Electives</i> | Welding and Machining III (MCH 234 Milling Operations I) - Certifications Available HAAS Milling Level II, NIMS CNC Milling Level 1, CNC Mill Operator | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

Advanced Placement: Lang & Comp 3, History, European History, English IV, Government, Economics, Biology

Dual Enrollment courses: M111T Technical Mathematics; M121 (DC) College Algebra; WRIT121T Technical Writing, WRIT101 College Writing; MCH 234 Milling Operations I; WLDG 112 Cutting Processes

Online courses: Montana Digital Academy - <http://www.montanadigitalacademy.org/>, HR110T Career Development and Human Relations

Other: Work-based Learning: Business Work Coop (Business Education Instructors, Counselors) Job Shadowing (Boeing) Student Shadowing (HC)

POSTSECONDARY PROGRAM OF STUDY

| | Math | English | Major | Other |
|------------|--|---|---|---|
| Semester 1 | M111T Technical Mathematics 3cr | | MCH120 Blueprint Reading and Interpretation for Machining, 2cr; MCH130 Machine Shop, 3cr; MCH132 Introduction to Engine Lathes, 5cr; MCH134 Intro to Mills, 5cr | |
| Semester 2 | | | MCH136 Advanced Lathes, 5cr; MCH137 Advanced Mills, 5cr; MCH139 Grinding Applications 2cr; MCH240 Metallurgy, 1cr; MCH246 Shop Practices, 2cr | |
| Semester 3 | | WRIT121T Intro to Technical Writing | MCH230 Tooling and Fixtures in CNC, 2cr; MCH231 CNC Turning Operations Level 1, 3cr; MCH232 CNC Turning Programming Operations 2, 3cr; MCH234 Milling Operations Level 1, 3cr; MCH236 CNC Millings Programming Operations 2, 3cr | |
| Semester 4 | | | MCH233 CNC Turning Programming Operations 2, 3cr; MCH236 CNC Milling Programming Operations 3, 3cr; MCH237 CAD/CAM CNC turning Center, 5cr; MCH238 CAD/CAM CNC Machining Center, 5 cr | HR110T Career Development and Human Relations, 3cr |

Capital High School to Helena College apprenticeship program:

Sheet Metal Apprenticeship AAS

(Note: college coursework subject to change based on industry recommendations)

BIG SKY PATHWAY PROPOSAL



SUGGESTED HIGH SCHOOL COURSES

| | | | |
|------|---|---|---|
| 9th | Graduation Requirements Workforce/College Prep | English I, Algebra I, Earth Science, World Cultures, Phys Ed1, Fine Arts Elective | Recommended CTE Cluster Foundation Course(s): Industrial Tech, Basic Computer Skills |
| | <i>CTE and/or Electives</i> | Industrial Technology, Basic Computer Skills | Recommended CTE Pathway Courses: Industrial Tech, Welding I, Welding and Machining II, Welding and Machining III (Milling Operations) |
| 10th | Graduation Requirements Workforce/College Prep | English 2, Geometry, Biology, PE/Health | |
| | <i>CTE and/or Electives</i> | Welding I, Drafting I, Carpentry/Cabinet Making I | |
| 11th | Graduation Requirements Workforce/College Prep | English 3, Algebra II, Chemistry, US History | Career & Technical Student Organization(s): Skills USA |
| | <i>CTE and/or Electives</i> | Welding and Machining II; Drafting II | |
| 12th | Graduation Requirements Workforce/College Prep | English 4 and WRIT101 College Writing (DC) OR WRIT 121T Technical, M111T Technical Math (DC), Physics, US Government | |
| | <i>CTE and/or Electives</i> | Welding and Machining III - Certification Available – AWS 3G and 4G 3/8 Plate Test minimum; WLDG 112 Cutting; MCH234 Milling Operations Level I | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

CTE Start courses: CSTN 100 Fundamentals of Construction Technology (thru NCOTI exam)

Dual Enrollment courses: M111T Technical Mathematics; WRIT121T Technical Writing, WRIT101 College Writing; WLDG 112 Cutting Processes; MCH234 Milling Operations Level I

Online courses: Montana Digital Academy - <http://www.montanadigitalacademy.org/> HR 110T Career Dev and Human Relations

Other: Work-based Learning; Business Work Coop Job Shadow, and Student Shadow at Helena College, Certifications

POSTSECONDARY PROGRAM OF STUDY (New 4-Semester Program Coming Soon)

| | Math | English | Major | Other |
|----------------------|----------------------------|-----------------------------------|--|---|
| Semester 1 Fall | | | SHML100 Safety & Health in Construction (3 credits) SHML 110 Sheet Metal Orientation (3 credits) CSTN 200 Rigging (3 credits) | On-the-Job Paid Training (40 hours) |
| Semester 2 Spring | | | SHML 120 Materials, Hand Tools, Fasteners (3 credits) Co-op (3 credits) | On-the-Job Paid Training (40 hours) HR110T - Career Development & Human Relations |
| Semester 3 Fall | M111T Technical Math | | MCH 240 Metallurgy (2 cr) SHML160 Basic Ductwork Installation (3) | On-the-Job Training (40 hours) |
| Semester 4 Spring | | WRIT 121T Technical Writing | SHML 170 Drafting & Layout Tools (3 cr) Co-op (3 credits) | On-the-Job Training (40 hours) |
| Semester 5 Fall | | | SHML 200 Blueprint Reading and Uniform Building Codes (3 credits) WLDG 131 Intro to Layout and Pattern Making (3 credits) SHML 210 Duct Liners and Insulation (3) | On-the-Job Training (40 hours) |
| Semester 6 Spring | | | WLDG 133 Soldering and Resistance Welding (4 credits) Co-op (3 credits) | On-the-Job Training (40 hours) |
| Semester 7 Fall | | | SHML 250 Stainless Steel Orientation (3) SHML 260 Sheet Metal Shop Practices (3) SHML 270 Advanced Layout & Fabrication Plasma Cutting (3 credits) | On-the-Job Training (40 hours) |
| Semester 8 Spring | | | SHML 280 Psychrometrics and Duct Sizing (3 credits) SHML 290 Architectural Sheet Metal (3) Co-op (3 credits) | On-the-Job Training (40 hours) |

* The Competency-Based Coursework uses online NCCER modules that result in stackable credentials upon successful completion of online tests and performances in the shop setting. High school students who have completed coursework in welding, construction, and other industrial arts courses should be able to demonstrate their skills and knowledge in the basic coursework quickly, spending less time with the online modules and onsite labs than would be indicated for inexperienced apprentices.

In order to enroll in any apprenticeship program, students must first secure an employer sponsor. Sheet metal workers in Montana earn an average of \$42,100 per year and 30 additional workers are needed each year. Apprentices are paid during their work hours and must pay tuition for the coursework. However, some employers are willing to pay or subsidize college tuition and fees. Possible sponsors for this program include:

- Comfort Systems of Montana
- All Season Heating & AC
- Central Plumbing and Heating



Cluster Overview:
Jobs in the Transportation, Distribution, and Logistics career cluster involve the planning, management, and movement of people, materials, and goods by road, air, rail, and water, as well as related professional and technical support services such as transportation infrastructure planning and management; logistics services; and mobile equipment and facility maintenance.

- Pathway Options:**
- Transportation Operations
 - Automotive Technology
 - Aviation Maintenance
 - Diesel Technology
 - Parts and Service Operations
 - Logistics Planning and Management Services
 - Warehousing & Distribution Center Operations
 - Facility and Mobile Equipment Maintenance
 - Transportation Systems/Infrastructure Planning, Management and Regulation

Occupation Examples:

Dispatchers, Aircraft Mechanic, Airline Pilots, Air Traffic Controllers, Automotive Technicians, Bus Drivers, Diesel Mechanics, Truck Drivers, Locomotive Engineers, Cargo and Freight Agents, Mass Transit Transportation Managers, Service Center Managers, Shipping and Receiving Clerks, Parts and Service Operators

For a complete listing, go to:
<http://online.onetcenter.org/find/career?c=16&g=Go>

MONTANA POSTSECONDARY OPPORTUNITIES

Montana University System Degree and Program Inventory: <http://www.homepage.montana.edu/~mus/drginv/>
Your Guide to Montana's Certificate and Associate Degree Programs: <http://mus.edu/twoyear/YourGuide.html>

| | | | |
|--|--|---|--|
| MSU Two Year Colleges and Programs: City College MSUB—Billings (CC); Great Falls College MSU—Great Falls (GFC); Helena College UM—Helena (HC) Highlands College MT Tech—Butte(HC-Tech); Missoula College UM—Missoula (MC); Gallatin College MSU—Bozeman(GC) | Community Colleges: Dawson Community College (DCC) Flathead Valley Community College (FVCC) Miles Community College (MCC) | Tribal Colleges: Aaniiih Nakoda College (ANC);Blackfeet Community College(BCC); Chief Dull Knife College (CDKC);Fort Peck Community College (FPCC);Little Big Horn College (LBHC);Stone Child College (SCC);Salish Kootenai College (SKC) | Four Year Colleges/Universities: MSU—Bozeman; MSUB—Billings; MSUN—Havre; MT Tech—Butte; UM—Missoula; UMW—Dillon |
|--|--|---|--|

HELENA COLLEGE UNIVERSITY OF MONTANA PROGRAMS

<http://www.umhelena.edu>

| | | |
|-------------------------------------|--|---|
| PROFESSIONAL CERTIFICATE | <ul style="list-style-type: none"> • Requires diploma or HiSET • Industry-recognized certification requires state or national exam • Typically non-credit • Complete in one year or less | CDL |
| CERTIFICATE OF APPLIED SCIENCE | <ul style="list-style-type: none"> • Requires diploma or HiSET • 39 credits; including 9 general education credits • Complete in one year | Diesel Technology Hybrid Vehicle Service Technology |
| ASSOCIATE OF APPLIED SCIENCE DEGREE | <ul style="list-style-type: none"> • Requires diploma or HiSET • 69-71 credits; includes 9 general ed credits • Complete in two years (if prepared academically in math and English) | Automotive Technology Aviation Maintenance Technology Diesel Technology |
| BACCALAUREATE DEGREE | <ul style="list-style-type: none"> • Requires 4-year college prep for admission • 128 credits (approximately) • Complete in four years | Diesel Technology — MSUN |

Capital High School to Helena College degree program:
Automotive Technology AAS

BIG SKY PATHWAY PROPOSAL



SUGGESTED HIGH SCHOOL COURSES

| | | | |
|------|---|--|---|
| 9th | Graduation Requirements Workforce/College Prep | Algebra I, English I, Physical Education, World Cultures, Earth Science | Recommended CTE Cluster Foundation Course(s): Consumer Mechanics, Basic Computer Skills, Money Management |
| | <i>CTE and/or Electives</i> | <i>Consumer Mechanics</i> | |
| 10th | Graduation Requirements Workforce/College Prep | Geometry, English II, Physical Education/Health, Biology, Fine Art Elective | Recommended CTE Pathway Courses: Auto I, II and III |
| | <i>CTE and/or Electives</i> | <i>Auto I, Welding I, Basic Computer Skills</i> | |
| 11th | Graduation Requirements Workforce/College Prep | Algebra II, English III, American History | Other Recommended CTE Courses: Welding, Drafting, Public Speaking |
| | <i>CTE and/or Electives</i> | <i>Auto II, Drafting, Money Management</i> | |
| 12th | Graduation Requirements Workforce/College Prep | Technical Math (M111T), Technical Writing (WRIT121T) OR English IV & College Writing (WRIT101), Government | Career & Technical Student Organization(s): Skills USA |
| | <i>CTE and/or Electives</i> | <i>Auto III, Welding II, Intro to Public Speaking</i> | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

Advanced Placement courses: Lang & Comp; European History, English IV, Biology, Psychology

Dual Enrollment courses: M111T Technical Math WRIT121 Intro to Tech Writing College Writing WRIT 101, Public Speaking COMX 111; (AUTO104 Automotive Mechanics to be developed as DC for Auto III)

Online courses: MT Digital Academy: HR110T Career Development and Human Relations

Other: Work experience and student shadowing at Helena College

POSTSECONDARY PROGRAM OF STUDY (72 credits)

| | Math | English | Major | Other |
|------------|--------------------------------|--------------------------------------|---|--|
| Semester 1 | M111T Technical Math 3cr | | AUTO104 Automotive Mechanics 2cr AST108 Auto Manual Drive Trains 6 AST130 Intro to Auto Electronics 7 | |
| Semester 2 | | | AST160 Auto Engine Repair 6 AST172 Auto Heating/Air Conditioning 5 Electric/Electronics Systems II 4 | |
| Semester 3 | | WRIT121 Intro to Tech Writing 3cr | AST118 Brake Chassis 6 AST262 Engine Performance I 8cr | |
| Semester 4 | | | AST264 Engine Performance II 5cr AST 270 Auto Transmissions/Transaxles 7 AST280 Applied Lab Experience Light Repair 4 | HR110T Career Development and Human Relations |