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| **HIGH SCHOOL:** | | | | | | ***BIG SKY PATHWAY PROPOSAL*** | | |
| **COLLEGE: Helena College University of Montana** | | | | | | AV.jpg | | |
| **COLLEGE DEGREE PROGRAM: Computer Technology Programming AAS** | | | | | |
| **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&g=Go*](http://online.onetcenter.org/find/career?c=11&g=Go) | | |
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| **SUGGESTED HIGH SCHOOL COURSES** | | | | | | | | |
| **9th** | Graduation Requirements  Workforce/2-Year College Prep | | *English; Math; Earth Science; Social Studies; Physical Ed* | | | | | **Recommended CTE Cluster Foundation Course(s):**  Computer Science |
| 4-Year MT College/Univ Prep (Rigorous Core) | |  | | | | |
| ***CTE and/or Electives*** | | *Computer Science;* | | | | | **Recommended CTE Pathway Courses:** Intro to Programming; Coding |
| **10th** | Graduation Requirements  Workforce/2-Year College Prep | | *English; Math; Biology; Health; Physical Ed;* | | | | |
| 4-Year MT College/Univ Prep  (Rigorous Core) | |  | | | | |
| ***CTE and/or Electives*** | | *Programming* | | | | | **Other Recommended CTE Courses:**  Business, Marketing |
| **11th** | Graduation Requirements  Workforce/2-Year College Prep | | *English; Math; US History;* | | | | |
| 4-Year MT College/Univ Prep  (Rigorous Core) | |  | | | | |
| ***CTE and/or Electives*** | | *Business; Psychology* | | | | |
| **12th** | Graduation Requirements  Workforce/2-Year College Prep | | *English; US Government* | | | | | **Career & Technical Student Organization(s):**  BPA, DECA |
| 4-Year MT College/Univ Prep  (Rigorous Core) | |  | | | | |
| ***CTE and/or Electives*** | | *Marketing, Coding* | | | | |
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| **ADVANCED LEARNING OPPORTUNITIES**  **High School to College/Career Linkages** | | | | | | | | |
| **CTE START courses:** | | | | | | | | |
| **Advanced Placement or IB courses:** | | | | | | | | |
| **Dual Enrollment courses:**  *M121 College Algebra OR M115 Probability and Linear Math****;*** *WRIT101 College Writing or WRIT121T Technical Writing; Psyx100;* | | | | | | | | |
| **Online courses:**  MTDA: *121 College Algebra****;*** *WRIT101 College Writing; Coding (Code MT) = CSCI100 Intro to Programming* | | | | | | | | |
| **Other:** *Robotics Competition; Science Olympiad* | | | | | | | | |
| **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  BMIS285 Fundamentals of Management Information Systems 3CR | | ITS164 Networking Fundamentals3CR **OR**  NTS104 Intro to Networks 3CR | |
| **Semester 2**  (18 CR) | |  | |  | CSCI111 Programming with Java I 4CR  CSCI240 Databases & SQL 3CR  ITS280 Comp. Repair & Maintenance 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 | |

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| **MONTANA POSTSECONDARY OPPORTUNITIES**  ***Montana University System Degree and Program Inventory:*** [*http://www.homepage.montana.edu/~mus/drginv/*](http://www.homepage.montana.edu/~mus/drginv/)  [***Your Guide to Montana's Certificate and Associate Degree Programs***](http://mus.edu/twoyear/YourGuide.html)***:*** [*http://mus.edu/twoyear/YourGuide.html*](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 |
| **MILITARY** | * Requires diploma or GED * 17 with parental consent; 18 without | | | Air Force, Air Guard, Army, Coast Guard, Marines, and Navy  For more information: *http://todaysmilitary.com* | |
| **PROFESSIONAL CERTIFICATE** | * Requires diploma or GED * Less than 30 credits; little/no general ed credits * Complete in one year or less | | |  | |
| **APPRENTICESHIP** | * Requires diploma or GED * Must be at least 18 * Minimum 2,000 hours of supervised experience | | | See the MT Dept of Labor website for more information:  [*http://wsd.dli.mt.gov/apprenticeship/default.asp*](http://wsd.dli.mt.gov/apprenticeship/default.asp) | |
| **CERTIFICATE OF**  **APPLIED SCIENCE** | * Requires diploma or GED * 30-45 credits; limited general education credits * Complete in one year or less | | | Computer Assistant ― HC, HC Tech, GFC  Computer Desktop/Network Support ― FPCC  Computer Networking ― CC, HC Tech, GFC, UMW  Computer Science/Technology ― BCC  Computer Skills Specialist ― HC  Computer Support ― MC  Programming Technology ― FPCC  Web Technology/Development/Design ― DCC | |
| **ASSOCIATE’S OF APPLIED SCIENCE DEGREE** | * Requires diploma or GED * 60-72 credits; includes 15-25 general ed credits * Complete in two years *(if prepared academically in math and English)* | | | Computer Desktop/Network Support ― CC, SKC  Computer Graphics ― MCC  Computer Information Systems ― MC, MSUN,  Computer Networking ― HC, MC, HC Tech, GFC, MCC, FPCC  Computer Science/Technology ― FPCC, BCC  Computer Systems Tech ― CC  Computer Technical Support Specialist ― DCC  Information Technology/Systems ― FVCC  Microcomputer Specialist/Technology ― GFC  Programming Technology ― HC, CC  Web Technology/Dev/Design ―HC Tech, GFC, FVCC | |
| **BACCALAUREATE DEGREE** | * Requires 4-year college prep for admission * 128 credits (approximately) * Complete in four years | | | Computer Engineering ― MSU, SKC  Network Technology ― TECH  Computer Science ― MSU, UM  Computer Info Systems ― MSUN  Information Systems ― UM  Information Technology ― SKC | |

*Degree and Program Inventory above may not be all inclusive*