Professional Option
Computer Science Graduation Worksheet
2019-2020 Semester Catalog

Revised 7/15/2019

Name _____ Advisor _____

- This worksheet goes into effect at the beginning of Fall **Semester, 2019**.
- It is recommended that you utilize this worksheet in combination with your DegreeWorks worksheet.
- Keep this worksheet up to date and bring it with you each time you meet with your advisor. It will help your advisor give you better advice when you register for classes.
- Substitute courses are sometimes allowed. Normally, the substitute course column is to be used for courses transferred in from another university. However, sometimes one MSU course can be substituted for another. See your advisor for specific questions. In either case, enter the substituted course in the *Substitution Course* column and enter the credits in the *Substitute Credits* column. *Your advisor must approve substitutions.* Do not assume that a substitution will be allowed.
- You may not use pass/fail courses except in the *unrestricted electives* section.
- All course grades must be at least a C- to count towards your degree.
- If you would like to see a typical semester-by-semester schedule of classes for a Computer Science major, please check out www.montana.edu/wwwcat/programs/cs.html.
- This is a complex form and may contain a few errors. If you notice any, please notify Hunter Lloyd (hunter.lloyd@montana.edu) or Sharlyn Gunderson-Izurieta (Sharlyn.Izurieta@montana.edu).

1. Required Computer Science Courses

COURSE	TITLE	CREDITS	SUBSTITUTE COURSE	SUBSTITUTE CREDITS	GRADE
CSCI 127	Joy and Beauty of Data	4			
CSCI 112	Programming with C	3			
CSCI 132	Basic Data Structures and Algorithms	4			
CSCI 215CS	Social and Ethical Issues in CS	3			
CSCI 232	Data Structures and Algorithms	4			
CSCI 305	Concepts of Progr. Languages	3			
EGEN 310R	Engineering Design	3			
ESOF 322	Software Engineering	3			
CSCI 338	Computer Science Theory	3			
CSCI 361*	Computer Architecture	3			
CSCI 366*	Computer Systems	3			
CSCI 468	Compilers	4			
CSCI 481	Program Assessment	0			

* CSCI 366, Computer Systems, will replace CSCI 361, Computer Architecture, as a required course beginning, Spring 2020.

Total Credits: _____

300+ Level Credits _____

2. Computer Science Elective Courses

- You must take 19 credits from the courses below.
- There are some special courses, such as CSCI or ESOF 491 that can also be used here.
- Seniors may petition to use CS graduate courses in this section.
- Non-lecture courses such as CSCI 498, Internship, and CSCI 492, Independent Study, MAY NOT be used on this page.

COURSE	TITLE	CREDITS	SUBSTITUTE COURSE	SUBSTITUTE CREDITS	GRADE
CSCI 347	Data Mining	3			
CSCI 351	Systems Administration	3			
EIND 422	Simulation	3			
ESOF 422	Adv. Software Engineering	3			
ESOF 423	Software Engr. Applications	3			
CSCI 432	Adv. Algorithm Topics	3			
CSCI 440	Database Systems	3			
CSCI 441	Computer Graphics	3			
CSCI 442	Robot Vision	3			
CSCI 446	Artificial Intelligence	3			
CSCI 447	Soft Computing	3			
CSCI 451	Computational Biology	3			
CSCI 455	Robotics	3			
CSCI 460	Operating Systems	3			
CSCI 466	Networks	3			
CSCI 476	Computer Security	3			
EIND 422	Simulation	3			
CSCI 495	Student Teaching	1			

Total Credits: _____

300+ Level Credits _____

3. Computer Science and Related Elective Courses

- You need 12 credits from this section
- Any computer science course listed in the first two sections of this sheet, but not used in those sections may be counted here.
- Any computer science course not listed in the first two sections of this sheet, such as CSCI 107 or CS 145RA may be used here.
- Courses may also be used from the following list. This list is meant to be suggestive. Speak with your advisor if there is a course related to computer science that is not on the list and that you wish to take. Possible Courses: EELE 261 (Introduction to Logic Circuits), EELE 262 (Logic Circuits Lab), EELE 367 (Logic Design), EELE 371 (Microprocessor Hardware and Software System), EELE 414 (Introduction to VLSI Design), EELE 465 (Microcontroller Applications), EELE 466 (Computational Computer Architecture), EELE 475 (Hardware and Software Engineering for Embedded Systems), M 242 (Methods of Proof), M 441 (Numerical Linear Algebra), M 442 (Numerical Solution of Differential Equations), PHL 236Q (Logic), STAT 421 (Probability).
- Computer Science related courses approved by your academic advisor may be used here.

COURSE	TITLE	CREDITS	SUBSTITUTE COURSE	SUBSTITUTE CREDITS	GRADE

Total Credits: _____

300+ Level Credits _____

4. Math and Science Required Courses

- You must list a total of 30 credits of Math and Science courses in section 4 and section 5 of this worksheet.
- The math/statistics electives can be satisfied by any relevant 200+ level course, such as EIND 354.

COURSE	TITLE	CREDITS	SUBSTITUTE COURSE	SUBSTITUTE CREDITS	GRADE
CSCI 246	Discrete Structures	3			
M 171	Calculus I	4			
M 172	Calculus II	4			
	Math/Statistics Elective (200+ level)	3			
	Math/Statistics Elective (200+ level)	3			

Take two courses from the list below. At least one course must have an accompanying 1+ credit lab.

BIOB 105CS, BIOB 110CS, BIOB 160, BIOB 170IN, BIOB 260, BIOH 201, BIOH 211, BIOM 250, BIOO 220, CHMY 123, CHMY 141, CHMY 143, CHMY 151, CHMY 153, CHMY 211, ENSC 245IN, GEO103CS, GEO 211, NRSM 240, PHSX 220, PHSX 222, PHSX 224, PHSX 240, PHSX 242

COURSE	TITLE	CREDITS	SUBSTITUTE COURSE	SUBSTITUTE CREDITS	GRADE

5. Math and Science Elective Courses

- You must take enough elective credits in Science and Math to get your total credits in section 4 and section 5 to be 30 or greater.
- All math courses listed here must be 200 level or greater
- Stat courses may also be used in this section, if they were not counted in section 4.
- Any science course except the following may be used: PHSX 103IN, PHSX 205, PHSX 207 and CHMY 121IN.
- In General, Math and Science courses are not restricted to those listed in Section 4, e.g. ASTR110.

COURSE	TITLE	CREDITS	SUBSTITUTE COURSE	SUBSTITUTE CREDITS	GRADE

Total Credits Section 4 and Section 5 combined _____

300+ Level Credits Section 4 and 5 combined _____

6. Core 2.0/Computer Science Accreditation Core

COURSES	TITLE	CREDITS	SUBSTITUTE COURSE	SUBSTITUTE CREDITS	GRADE
US		3			
WRIT 101 W	College Writing I	3			
WRIT 221	Intermediate Tech Writing	3			
IA or RA		3			
IH or RH		3			
IS or RS		3			
D		3			

Total Credits: _____

300+ Level Credits _____

7. Unrestricted Electives

- You might need to take additional credits of elective courses to bring your credit total to 120. Add up the credit totals in the other sections and subtract from 120 to determine exactly how many unrestricted elective credits you need.
- Any university course may be used in this section if it has not been used in another section on this worksheet.
- You must accumulate at least 42 credits in courses numbered 300 or above. If you have taken courses at this level that are not listed in any other section on this worksheet, and if you need to count these courses in order to meet the 42 credit requirement, list them here.

COURSE	TITLE	CREDITS	SUBSTITUTE COURSE	SUBSTITUTE CREDITS	GRADE

Total Credits: _____

300+ Level Credits _____

8. Checklist for Graduation

_____ Total number of credits. Must be at least 120.

_____ Total number of 300+ level credits. Must be at least 42.

Yes or No All course grades are at least a C-.

9. Graduation Application Instructions

Congratulations – you are almost finished!

Graduation Applications must be submitted by the following dates:
October 1st, 2019 for Spring Graduation 2020.
March 1st, 2020 for Summer or Fall Graduation 2020.

1. Schedule an appointment with your department advisor. Please plan ahead to ensure completion of materials before the graduation application deadline. Before you meet with your advisor:
   - Create a "Graduation Plan" for your final semester in DegreeWorks (use this worksheet to cross-check that you have met all the requirements).
   - Bring a completed Application for Baccalaureate Degree, http://www.montana.edu/registrar/pdfs/bac_app.pdf. The application is also available in the Gianforte School of Computing's main office.

2. After your graduation plan is correct, your advisor will lock your DegreeWorks Graduation Plan and take your signed application to the GSoC Office where it will be given to the certifying officer.

3. The certifying officer will conduct an audit to ensure that your course requirements have been completed. Once the forms are audited, the Certifying Officer will provide the forms to the GSoC Administrative Assistant and the Registrar's Office.

4. The Registrar's Office will conduct a final audit during your final semester.