

# Professional Option Computer Science Graduation Worksheet 2008-2010 Semester Catalog

Revised 06/14/2010

Name \_\_\_\_\_ Advisor \_\_\_\_\_

- This worksheet goes into effect in **Fall Semester, 2008**.
- 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 initial each approved substitution.* 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 consult the 2008-2010 Undergraduate Bulletin or check out [www.montana.edu/wwwcat/programs/cs.html](http://www.montana.edu/wwwcat/programs/cs.html).
- This is a complex form and is sure to contain a few errors. If you notice any, please notify Hunter Lloyd ([hunterl@cs.montana.edu](mailto:hunterl@cs.montana.edu)).

## 1. Required Computer Science Courses

COURSE	TITLE	CREDITS	SUBSTITUTE COURSE	SUBSTITUTE CREDITS	GRADE	ADVISOR'S INITIALS
CS 160 CSCI 111	Introduction to Comp. Science	4				
CS 201 CSCI 112	Program Design With C	3				
CS 215CS CSCI 215CS	Social and Ethical Issues in Computing	3				
CS 221 CSCI 132	Advanced Programming	4				
CS 223 CSCI 232	Data Structures and Algorithms	4				
ENGR 310R	Engineering Design	3				
CS 330 CSCI 361	Computer Organization	4				
CS 350 CSCI 338	Theory of Computation	3				
CS 351 SE 322	Software Engineering I	3				
CS 355 CSCI 305	Concepts of Progr. Languages	3				
CS 450 CSCI 468	Compilers	4				
CS 499 CSCI 481	Computer Science Program Assessment	0				

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 CS480 that can also be used here.
- Seniors may petition to use CS graduate courses in this section.

COURSE	TITLE	CREDITS	SUBSTITUTE COURSE	SUBSTITUTE CREDITS	GRADE	ADVISOR'S INITIALS
CS 309 CSCI 351	Systems Administration	3				
CS 324 CSCI 432	Design and Analysis of Algorithms	3				
CS 392 CSCI 320	Numerical Computation	3				
CS 418 CSCI 460	Operating Systems	3				
CS 422 CSCI 477	Introduction to Simulation	3				
CS 425 CSCI 441	Computer Graphics	3				
CS 430 CSCI 442	Computer Vision	3				
CS 432 CSCI 451	Computational Biology	3				
CS 435 CSCI 440	Database Systems	3				
CS 436 CSCI 446	Artificial Intelligence	3				
CS 440 CSCI 466	Computer Networks	4				
CS 445 CSCI 455	Robotics	3				
CS 451 SE 422	Software Engineering II	3				
CS 455 CSCI 476	Computer Security	3				
CS 474 CSCI 495	Undergrad Consultant	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 CS course not listed in the first two sections of this sheet, such as CAPP 120, CS 140CS, CS 145RA and CS 204 may also be used here. However, you may not use CAPP 120 **unless** it was taken before you took CS 160/CSCI 111.
- 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: EE 261 (Introduction to Logic Circuits), EE 262 (Logic Circuits Lab), EE 367 (Logic Design), EE 371 (Microprocessor Hardware and Software System), EE 414 (Introduction to VLSI Design), EE 465 (Real Time Microcontroller Applications), EE 466 (Computer Architecture and System Organization), EE 467 (Advanced Embedded Systems Lab), EE 475 (Hardware and Software Engineering for Embedded Systems), M 441 (Numerical Linear Algebra), M 442 (Numerical Solution of Differential Equations), Phil 231/PHI 236 (Introduction to Logic), Stat 421 (Probability).
- Computer Science related courses approved by your academic advisor.

COURSE	TITLE.....	CREDITS	SUBSTITUTE COURSE	SUBSTITUTE CREDITS	GRADE	ADVISOR'S INITIALS

Total Credits: \_\_\_\_\_

300+ Level Credits \_\_\_\_\_

## 4. Math and Science Required Courses

- You must take a total of 30 credits of Math and Science courses from section 4 and section 5 of this worksheet.
- 17 of the 30 credits must be taken from the following table.
- M 221 and the statistics elective can be replaced by M 273 and M 274. This is an all or nothing substitution.
- The Statistics Elective can be satisfied by any probability or statistics course, such as IME 354, that is at least a 200 level course.

COURSE	TITLE	CREDITS	SUBSTITUTE COURSE	SUBSTITUTE CREDITS	GRADE	ADVISOR'S INITIALS
CS 222 CSCI 246	Discrete Math	3				
M 171	Calculus I	4				
M 172	Calculus II	4				
M 221	Matrix Theory	3				
	Statistics Elective	3				

- Take two courses from the following to satisfy both the university IN and CS requirements. One of the courses must have an accompanying 1+ credit lab. (<http://www.montana.edu/wwwcat/requirements/reqs4.html#Substitutions>):

ARNR 240, BIOL 101, BIOL 102, BIOL 207, BIOL 208, BIOL 213, BIOL 214, BIOL 215, BIOL 251, CHMY 123, CHMY 141, CHMY 143, CHMY 151, CHMY 153, CHMY 211, GEO 101, GEO 103, GEO 205, GEO 211, GPHY 111, LRES 201, MB 201, MBEH 210, PHYS 211, PHYS 212, PHYS 213, PHYS 221, PHYS 222, PSPP 101, PSPP 102

COURSE	TITLE	CREDITS	SUBSTITUTE COURSE	SUBSTITUTE CREDITS	GRADE	ADVISOR'S INITIALS

## 5. Math and Science Elective Courses

- You must take enough elective credits in Science and Math to get your total credits from section 4 and section 5 to be 30 or greater.
- All math courses listed here must be 200 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: PHYS 103, PHYS 205, PHYS 206 and CHMY 121

COURSE	TITLE	CREDITS	SUBSTITUTE COURSE	SUBSTITUTE CREDITS	GRADE	ADVISOR'S INITIALS

Total Credits Section 4 and Section 5 combined \_\_\_\_\_

300+ Level Credits Section 4 and 5 combined \_\_\_\_\_

## 6. Core 2.0/Computer Science Accreditation Core

<b>COURSES</b>	<b>TITLE</b>	<b>CREDITS</b>	<b>SUBSTITUTE COURSE</b>	<b>SUBSTITUTE CREDITS</b>	<b>GRADE</b>	<b>ADVISOR'S INITIALS</b>
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	ADVISOR'S INITIALS

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-.

Yes or No CS 270 credits are 6 or fewer.

Yes or No CS 470 credits are 6 or fewer.

Yes or No CS 280 and CS 480 credits counted are 12 or fewer.

Yes or No Advisor's initials appear on all courses listed in substitution columns.

Yes or No Advisor's signature appears below.

\_\_\_\_\_  
Advisor

\_\_\_\_\_  
Date

\_\_\_\_\_  
Certification Officer

\_\_\_\_\_  
Date

\_\_\_\_\_  
Assistant/Associate Dean

\_\_\_\_\_  
Date

## 9. Graduation Application Instructions

Congratulations – you are almost finished!

Applications for the baccalaureate degree are due at the end of the semester one year prior to when you plan to graduate. For example, if you intend to graduate after Spring Semester, 2011, you would need to apply for graduation at the end of Spring Semester, 2010.

1. Print out a copy of your current, unofficial transcript.
2. Fill everything out with clear handwriting.
3. Obtain the blue *Application for Baccalaureate Degree* from the CS office.
4. Fill out this *Computer Science Graduation Worksheet* with all courses you have completed using non-red ink.
5. Fill out this *worksheet* with all courses that you are currently taking or that you plan to take with red ink.
6. Fill out the entire rest of this *worksheet* using non-red ink. Double check to see that you are meeting all of the requirements!
7. Fill out the *Application for Baccalaureate Degree* form using non-red ink. Fill out completely the Please Print in Ink or Type section, the Departmental and College Requirements section and the To Be Completed By The Student section on the back.
8. Take your transcript, your completely filled out *Application for Baccalaureate Degree*, and this completely filled out *Computer Science Graduation Worksheet* to your advisor.
9. Your advisor will check that everything is filled out properly (grades, credit tallies, etc.). Once the forms are checked, the advisor will sign in the appropriate places and then keep the forms to pass on to the CS secretary.