The University of Montana
Department of Mathematical Sciences
Name _____
Email _____

Date _____
ID 790 - -
Catalog for Graduation _____
Math Advisor _____
CS Advisor _____

Advising Worksheet (2009-2010 Catalog)

B.S. Combined Major in Mathematical Sciences - Computer Science

- **General Education Requirements:**

☐ Fill out a General Education Worksheet

- **Grade Requirement:** Beginning with the 2005-2006 Catalog, all courses taken to satisfy the requirements of the major must be completed with a grade of C- or better. This applies to all courses listed on this worksheet!
  Upper Division Credit Requirement: At least 39 credits in 300/400 level courses.
  Look also at the math department handout: **Advising Guidelines from the 2009-2010 Catalog**

Course no.	*Name*	*Credit*	*Term*	*Grade*

- **Non-Math/CS Courses**

(1) One of the sequences: BIOL 108N, 109N, 110N **or** CHMY 141N, 143N (CHEM 161N, 162N) **or** PHYS 211N & 213N (was 221N) , 212N & 214N (was 222N):

_____	_____	( )	_____	_____
_____	_____	( )	_____	_____
_____	_____	( )	_____	_____

(2) The course: WRIT 222 = FOR 220 Technical Approach to Writing		(2)	_____	_____
(3) COMM 111A **or** COMM 242 (circle one)		(3)	_____	_____
(4) Upper division writing requirement (more information on back):				
_____	_____	( )	_____	_____

- **Core Math Courses**

M 171 = MATH 152	Calculus I	(4)	_____	_____
M 172 = MATH 153	Calculus II	(4)	_____	_____
M 221 = MATH 221	Introduction to Linear Algebra	(4)	_____	_____
M 273 = MATH 251	Multivariable Calculus	(4)	_____	_____
M 307 = MATH 305	Introduction to Abstract Mathematics			
(or M 225 = MATH 225	Introduction to Discrete Mathematics)	(3)	_____	_____

- **Core CS Courses** (Note: you can take CS 133 instead of CS 131and 132.)

CS 121	Careers in Computer Science	(1)	_____	_____
CS 131	Fundamentals of Computer Science I	(3)	_____	_____
CS 132	Fundamentals of Computer Science II	(3)	_____	_____
CS 241	Data Structures	(4)	_____	_____
CS 242	Programming Languages	(4)	_____	_____
CS 281	Computer Architecture & Assembly Language Prog.	(3)	_____	_____
CS 332	Algorithms	(3)	_____	_____

- **Other Math-CS Courses:**

  Each student plans a program in consultation with a mathematical sciences advisor **and** a computer science advisor.

  For your choice of electives, consider the suggested curricula listed below.

Course no.	*Name*	*Credit*	*Term*	*Grade*

Twelve Credits of M/STAT/MATH Electives* selected the following mathematical sciences courses: M 311, 325, 326, 361, 362, 381, 412, 414, 429, 431, 432, 439, 440, 445, 472, 473, 485 and STAT 341, 421, 422, 451, 452. (The old MATH course numbers are: MATH 311, 325, 326, 341, 351, 381, 382, 406, 412, 414, 421, 422, 431, 441, 442, 444, 445, 451, 452, 471, 475, 485.)

M/STAT/MATH			( )		
M/STAT/MATH			( )		
M/STAT/MATH			( )		
M/STAT/MATH			( )		

Nine Credits of CS Electives* selected from courses numbered 300 and above. A total of at most three of the nine credits of CS electives may be in CS 398 or 498.

CS			( )		
CS			( )		
CS			( )		

*** Note:** The 12 credits of M/STAT/MATH electives and the 9 credits of CS electives must include at least three 3- or 4- credit courses numbered 400 or above, with at least one chosen from each department (not including M 429 (MATH 406), nor STAT 451, 452 (MATH 444, 445).)

M/STAT/MATH/CS	4		( )		
M/STAT/MATH/CS	4		( )		
M/STAT/MATH/CS	4		( )		

- **The Upper-Division Writing Requirement** is one of the following: CS 415, M 429 (MATH 406), any other approved General Education upper–division writing course, or a senior thesis (CS 499 or M 499 (MATH 499)).

- **Suggested Curricula**

Applied Math-Scientific Programming: Three courses chosen from CS 344, 446, 477, 486. In addition:

New Course Numbers:	M	311,	412,	414,	and one of	M	381,	440,	472,	473,	STAT	341.		
Old Course Numbers:	MATH	311,	412,	414,	and one of	MATH	351,	471,	452,	451,		341.		

Combinatorics and Optimization-Artificial Intelligence: CS 344, 455, and 457. In addition:

New Course Numbers:	M	361,	362,	and two of	M	325,	414,	485,	STAT	341.
Old Course Numbers:	MATH	381,	382,	and two of	MATH	325,	414,	485,		341.

Statistics-Machine Learning: Three courses chosen from CS 365, 455, 457, 458, and 486. In addition:

New Course Numbers:	STAT	341,	421,	and two of	STAT	422,	M	325,	362, 485.
Old Course Numbers:	MATH	341,	441,	and two of	MATH	442,		325,	382, 485.

Algebra-Analysis: CS 344, 441, and one other upper-division CS course. In addition:

New Course Numbers:	M	381,	431,	and two of	M	326,	432,	472,	473.	
Old Course Numbers:	MATH	351,	421,	and two of	MATH	326,	422,	452,	451.	

Advising Guidelines from the 2009-2010 UM Catalog

References to Sections in the Online Catalog: APP = "Academic Policies and Procedures", **GUR** = "General University Requirements", **RG** = "Requirements for Graduation". These sections are linked from the chapter "Academics". In the catalog sections APP, GUR and RG, search for the KEYWORDS IN SMALL CAPS.

CREDIT LOAD (see APP): maximum is 21 credits per semester; minimum full-time load is 12 credits per semester.

Requirements for a First Bachelor Degree (see APP, GUR, RG)

- 120 credits total: (RG: BACHELOR DEGREES) (The math-ed option requires 128 credits.)
    - Minimum of 39 credits in courses numbered 300 or above (RG: UPPER-DIVISION REQUIREMENT)
    - Maximum of 60 credits in major can be counted toward degree (GUR: CREDIT LIMITATIONS IN A MAJOR)
- **Courses taken to satisfy the requirements of the major must be completed with a grade of C- or better.** (GUR: GRADE REQUIREMENT)
- GPA of at least 2.00 in all work attempted in major (GUR: GRADE REQUIREMENT)
- Maximum of 18 "credit/no credit" credits (see APP: CREDIT/NO CREDIT GRADING for limitations). Note: With the exception of Math 300, all math courses counting towards a math major or minor must be taken for traditional letter grade.
- **General education requirements** (see GUR). (Transfer students search in GUR for GENERAL EDUCATION FOR TRANSFER STUDENTS.)
- RESIDENCY REQUIREMENTS: See RG. (These are minimum requirements on the number of credits earned at UM-Missoula.)
- Students must declare a major before completing 45 credits or after 3 semesters, whichever occurs first. (GUR: MAJOR REQUIREMENTS)
- UNDERGRADUATES IN GRADUATE COURSES (SEE APP): only post-baccalaureates and seniors having a GPA of 3.0 or greater may, with consent of instructor, enroll in 500-level courses.

Graduation:

- Must apply for DEGREE CANDIDACY nearly 2 semesters before your expected graduation date. (RG)
- GRADUATION WITH HONORS OR HIGH HONORS: See requirements in RG and talk to your advisor.