

**UNDERGRADUATE AND PROFESSIONAL MAJOR CHANGE BULLETIN NO. 9**

**Faculty Senate Approved 2/23/2012**

**---REQUIREMENTS---  
Spring 2012**

The requirements listed below reflect the undergraduate major curricular changes approved by the Catalog Subcommittee since approval of the last Undergraduate Major Change Bulletin. All changes are underlined. Deletions are crossed out. The column to the far right indicates the date each change becomes effective.

**In the case of revisions to graduation requirements, the current GER designations are still in place in most schedules of studies. Transition to the new UCORE designations is currently under construction and is expected in early this Spring 2012 in a separate bulletin.**

<b>Dept</b>	<b>Current</b>	<b>Proposed</b>	<b>Effective Date</b>
<b>Earth and Environmental Sciences</b> Revise minor in Environmental Science	<p><b>Environmental Science</b></p> <p>A minor in environmental science requires 18 hours, including <del>ES/RP 101, 335, 444, and elective courses to be chosen in consultation with an ES/RP advisor.</del> Credit hours for the <del>minor must include</del> 9 hours of upper-division work taken in residence at WSU or through WSU-approved education abroad or educational exchange courses.</p>	<p><b>Environmental Science</b></p> <p><u>A minor in Environmental Science may be certified after the completion of 90 semester credit hours. The minor requires 18 credit hours, including ENVR SCI 101, 444. An additional 10 credit hours may be selected from the following classes: ENVR SCI 250, 275, 285, 310, 335, 463, 490, GEOLOGY 230, 303, 315, NATRS 300, 312, or 454. Of these 18 credit hours, 9 hours must be in upper-division work taken in residence at WSU or through WSU-approved education abroad or educational exchange courses. Courses taken to meet the minor requirements cannot be taken on a pass/fail basis.</u></p>	<p align="center"><b>8-12</b></p>
<b>Engineering and Computer Science WSU-Vancouver</b> Revise certification	<p><b>Bachelor of Science, Computer Science Requirements (Vancouver Only) (122 Hours)</b></p>	<p><b>Bachelor of Science, Computer Science Requirements (Vancouver) (120 Hours)</b></p>	<p align="center"><b>8-12</b></p>

<p>and graduation requirements for BS in Computer Science.</p>	<p>Students who have completed at least 30 semester hours of course work and who have completed CS 121, CS 122, CS 216, CS 224, CS 260, CS 261, Math 171, Math 172, <del>Phil 201</del>, and Phys 201, or their equivalents, are eligible for certification into the Bachelor of Science in Computer Science program. All courses required for certification must be completed with a grade of C or better. Enrollment in 400-level computer science courses is restricted to certified majors or minors in computer science and to juniors and seniors certified in other degree programs requiring 400-level computer science courses.</p> <p>No courses listed in this schedule of studies may be taken on a pass/fail basis. All listed computer science courses, and their prerequisites, must be completed with a grade of C or better.</p> <p><b>First Year</b></p> <table border="0"> <tr> <td><b>First Term</b></td> <td><b>Hours</b></td> </tr> <tr> <td>CS 121</td> <td>4</td> </tr> <tr> <td><del>GenEd 110 [A] (GER)</del></td> <td>3</td> </tr> <tr> <td><del>Math 171 [N] (GER)</del></td> <td>4</td> </tr> <tr> <td><del>Phil 201 [H] (GER)</del></td> <td>3</td> </tr> <tr> <td><b>Second Term</b></td> <td><b>Hours</b></td> </tr> <tr> <td>CS 122</td> <td>4</td> </tr> <tr> <td>CS 216</td> <td>3</td> </tr> <tr> <td><del>Engl 101 [W] (GER)</del></td> <td>3</td> </tr> <tr> <td><del>GenEd 111 [A] (GER)</del></td> <td>3</td> </tr> <tr> <td>Math 172</td> <td>4</td> </tr> </table> <p><b>Second Year</b></p> <table border="0"> <tr> <td><b>First Term</b></td> <td><b>Hours</b></td> </tr> <tr> <td>CS 223</td> <td>3</td> </tr> <tr> <td>CS 260</td> <td>3</td> </tr> <tr> <td>EconS 101 [S] or 102 [S]</td> <td>3</td> </tr> </table>	<b>First Term</b>	<b>Hours</b>	CS 121	4	<del>GenEd 110 [A] (GER)</del>	3	<del>Math 171 [N] (GER)</del>	4	<del>Phil 201 [H] (GER)</del>	3	<b>Second Term</b>	<b>Hours</b>	CS 122	4	CS 216	3	<del>Engl 101 [W] (GER)</del>	3	<del>GenEd 111 [A] (GER)</del>	3	Math 172	4	<b>First Term</b>	<b>Hours</b>	CS 223	3	CS 260	3	EconS 101 [S] or 102 [S]	3	<p>Students who have completed at least 30 semester hours of course work and who have completed CS 121, CS 122, CS 216, CS 224, CS 260, CS 261, MATH 171, MATH 172, and PHYSICS 201, or their equivalents, are eligible for certification into the Bachelor of Science in Computer Science program. All courses required for certification must be completed with a grade of C or better. Enrollment in 400-level computer science courses is restricted to certified majors or minors in computer science and to juniors and seniors certified in other degree programs requiring 400-level computer science courses.</p> <p>No courses listed in this schedule of studies may be taken on a pass/fail basis. All listed computer science courses, and their prerequisites, must be completed with a grade of C or better.</p> <p><b>First Year</b></p> <table border="0"> <tr> <td><b>First Term</b></td> <td><b>Hours</b></td> </tr> <tr> <td>CS 121</td> <td>4</td> </tr> <tr> <td><u>ENGLISH 101 [WRTG]</u></td> <td><u>3</u></td> </tr> <tr> <td><u>MATH 171 or Quantitative Reasoning [QUAN]</u></td> <td>4</td> </tr> <tr> <td><u>Roots of Contemporary Issues [ROOTS]</u></td> <td><u>3</u></td> </tr> <tr> <td><b>Second Term</b></td> <td><b>Hours</b></td> </tr> <tr> <td>CS 122</td> <td>4</td> </tr> <tr> <td>CS 216</td> <td>3</td> </tr> <tr> <td><u>Humanities [HUM]</u></td> <td><u>3</u></td> </tr> <tr> <td>MATH 172</td> <td>4</td> </tr> </table> <p><b>Second Year</b></p> <table border="0"> <tr> <td><b>First Term</b></td> <td><b>Hours</b></td> </tr> <tr> <td>CS 223</td> <td>3</td> </tr> <tr> <td>CS 260</td> <td>3</td> </tr> <tr> <td><u>ECONS 101 or 102 or Social Sciences [SSCI]</u></td> <td>3</td> </tr> <tr> <td>MATH 273</td> <td>2</td> </tr> <tr> <td><u>PHYSICS 201 or Physical</u></td> <td>4</td> </tr> </table>	<b>First Term</b>	<b>Hours</b>	CS 121	4	<u>ENGLISH 101 [WRTG]</u>	<u>3</u>	<u>MATH 171 or Quantitative Reasoning [QUAN]</u>	4	<u>Roots of Contemporary Issues [ROOTS]</u>	<u>3</u>	<b>Second Term</b>	<b>Hours</b>	CS 122	4	CS 216	3	<u>Humanities [HUM]</u>	<u>3</u>	MATH 172	4	<b>First Term</b>	<b>Hours</b>	CS 223	3	CS 260	3	<u>ECONS 101 or 102 or Social Sciences [SSCI]</u>	3	MATH 273	2	<u>PHYSICS 201 or Physical</u>	4	
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<del>(GER)</del>		<u>Sciences [PSCI]</u>	
Math 273	2	<b>Second Term</b>	<b>Hours</b>
Phys 201 [P]-(GER)	4	Biological Sciences [BSCI]	4
<b>Second Term</b>	<b>Hours</b>	with lab	
Biological Sciences [B]	4	CS 224	2
<del>(GER)</del>		CS 261	3
CS 224	2	MATH 220	2
CS 261	3	<u>PHYSICS 202</u>	4
Math 220	2	Complete Writing Portfolio	
Phys 202 [P]-(GER)	4	<b>Third Year</b>	
Complete Writing Portfolio		<b>First Term</b>	<b>Hours</b>
<b>Third Year</b>		CS 317	3
<b>First Term</b>	<b>Hours</b>	CS 320 [M]	3
CS 317	3	CS Option Course <sup>1</sup>	3
CS 320 [M]	3	<u>ENGLISH 402 or 403 or</u>	
CS Option Course <sup>1</sup>	3	<u>Communication [COMM] or</u>	3
Engl 402 [W] or 403 [W]	3	<u>Written Communication</u>	
<del>(GER)</del>		[WRTG]	
Stat 360	3	Stat 360	3
<b>Second Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
Arts & Humanities and		CS 351	3
Diversity [H,G,D] or Social	3	CS 355	3
Sciences and Diversity		CS 360	4
[S,K,D]-(GER)		CS Option Course <sup>1</sup>	3
CS 351	3	<u>Diversity [DIVR]</u>	3
CS 355	3	<b>Fourth Year</b>	
CS 360	4	<b>First Term</b>	<b>Hours</b>
CS Option Course <sup>1</sup>	3	<u>Creative &amp; Professional Arts</u>	3
<b>Fourth Year</b>		[ARTS]	
<b>First Term</b>	<b>Hours</b>	CS 450	3
CS 402 [M]	3	<u>CS 460</u>	3
CS 450	3	CS Option Course <sup>1</sup>	6
CS Option Course <sup>1</sup>	6	<b>Second Term</b>	<b>Hours</b>
Intercultural Studies [I,G,K]	3	<u>CS 402 [M]</u>	3
<del>(GER)</del>		CS 420 [M]	3
<b>Second Term</b>	<b>Hours</b>	CS Option Courses <sup>1</sup>	9
CS 420 [M]	3		
CS Option Courses <sup>1</sup>	9	<b>Footnotes</b>	
<del>Tier III Humanities or</del>	3	<sup>1</sup> 21 credit hours of option area courses	
<del>Social Science Course [T]</del>		are required for completion of the	

	<p>(GER)</p> <hr/> <p><b>Footnotes</b></p> <p><sup>1</sup> 21 credit hours of option area courses are required for completion of the degree program. The option courses are chosen from upper-division computer science and related courses and must be pre-approved by a faculty advisor.</p>	<p>degree program. The option courses are chosen from upper-division computer science and related courses and must be pre-approved by a faculty advisor.</p>							
<p><b>Mathematics</b></p> <ul style="list-style-type: none"> <li>• Create new Applied Mathematics Option (combination of the following three options), and</li> <li>• Drop options in Operations Research, Option, Computational Mathematics, and Mathematical Modeling</li> <li>• Revise footnotes reflect changes.</li> </ul>	<p><b>THIRD AND FOURTH YEAR MATHEMATICS OPTIONS REQUIREMENTS</b></p> <p>Mathematics majors must complete the courses specified by one of the following options:</p> <p><b>Computational Mathematics Option</b>  <del>Required Courses: Cpt S 122, Math 364, 448, and two of (416, 440, 464, 466). Suggested Courses: Computer Science minor with Cpt S 223 and three upper level courses (e.g. Cpt S 317, 322, and 445 or 450), approved by the Cpt S undergraduate coordinator.</del></p> <p><b>Mathematical Modeling Option</b>  <del>Required Courses: Four of: Math 340, 415, 440, 448, 486. Suggested Courses: Two of (Math 364, 416, 423, 441, 464), and a minor in an area that uses mathematical modeling.</del></p> <p><b>Operations Research Option</b>  <del>Required Courses: Math 364, 464,</del></p>	<p><b>THIRD AND FOURTH YEAR MATHEMATICS OPTIONS REQUIREMENTS</b></p> <p>Mathematics majors must complete the courses specified by one of the following options:</p> <p><b><u>Applied Mathematics Option</u></b>  <u>Required Courses: In addition to the core requirements, at least four upper-division courses in mathematics that form a coherent program within the Applied Mathematics Option. These courses must be approved by your advisor.</u></p> <p><b>Theoretical Mathematics Option</b>  Required Courses: Four of: Math 302, 303, 325, 415, 441 and 453.</p> <p><b>Secondary Mathematics Teaching Option</b>  See separate schedule of studies below.</p> <p><b>First Year</b></p> <table border="0"> <thead> <tr> <th><b>First Term</b></th> <th><b>Hours</b></th> </tr> </thead> <tbody> <tr> <td>Biological Sciences [B] (GER)</td> <td>4</td> </tr> <tr> <td>Engl 101 [W] (GER)</td> <td>3</td> </tr> </tbody> </table>	<b>First Term</b>	<b>Hours</b>	Biological Sciences [B] (GER)	4	Engl 101 [W] (GER)	3	<p><b>8-12</b></p>
<b>First Term</b>	<b>Hours</b>								
Biological Sciences [B] (GER)	4								
Engl 101 [W] (GER)	3								

and two of (325, 416, 448, 453, 456, 466).	GenEd 110 [A] (GER)	3
	Math 171 [N] (GER)	4
<b>Theoretical Mathematics Option</b>	<b>Second Term</b>	<b>Hours</b>
Required Courses: Four of: Math	Cpt S 121 or 251	3 or 4
302, 303, 325, 415, 441 and 453.	GenEd 111 [A] (GER)	3
	Math 172	4
	Math 220 or 230	2 or 3
	Social Science [S,K] (GER) <sup>1</sup>	3
<b>Secondary Mathematics Teaching Option</b>	<b>Second Year</b>	
See separate schedule of studies below.	<b>First Term</b>	<b>Hours</b>
	Arts & Humanities [H,G] or Social Sciences [S,K] (GER) <sup>1</sup>	3
	Math 273	2
	Math 300 [M]	3
	Phys 201 [P] (GER)	4
	Elective <sup>2</sup>	3
<b>First Year</b>	<b>Second Term</b>	<b>Hours</b>
<b>First Term</b>	Biological [B] or Physical [P] Sciences (GER)	4
Biological Sciences [B] (GER)	Intercultural Studies [I,G,K] (GER)	3
Engl 101 [W] (GER)	Math 301	3
GenEd 110 [A] (GER)	Math 315	3
Math 171 [N] (GER)	Math 360	3
	Complete Writing Portfolio	
<b>Second Term</b>	<b>Third Year</b>	
Cpt S 121 or 251	<b>First Term</b>	<b>Hours</b>
GenEd 111 [A] (GER)	Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)	3
Math 172	Engl 402 [W] (GER)	3
Math 220 or 230	Math 420	3
Social Science [S,K] (GER) <sup>1</sup>	Math Option Course <sup>3</sup>	3
	Elective <sup>2</sup>	3
<b>Second Year</b>	<b>Second Term</b>	<b>Hours</b>
<b>First Term</b>	Arts & Humanities [H,G] (GER)	3
Arts & Humanities [H,G] or Social Sciences [S,K] (GER) <sup>1</sup>	Math 398	1
Math 273	Math 421 [M]	3
Math 300 [M]	Math Option Course <sup>3</sup>	3
Phys 201 [P] (GER)		
Elective <sup>2,3</sup>		
<b>Second Term</b>		
Biological [B] or Physical [P] Sciences (GER)		
Intercultural Studies [I,G,K] (GER)		

Math 301	3	Electives <sup>2</sup>	6
Math 315	3		
Math 360	3		
Complete Writing Portfolio			
<b>Third Year</b>		<b>Fourth Year</b>	
<b>First Term</b>		<b>First Term</b>	
	<b>Hours</b>		<b>Hours</b>
Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)	3	Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)	3
Engl 402 [W] (GER)	3	Math 401 [M]	3
Math 420	3	Math Option Course <sup>3</sup>	3
Math Option Course <sup>4</sup>	3	Tier III Course [T] (GER)	3
Elective <sup>3</sup>	3	Elective <sup>2</sup>	3
<b>Second Term</b>		<b>Second Term</b>	
	<b>Hours</b>		<b>Hours</b>
Arts & Humanities [H,G] (GER)	3	Math 402 [M]	3
Math 398	1	Math Option Course <sup>3</sup>	3
Math 421 [M]	3	Electives <sup>2</sup>	8
Math Option Course <sup>4</sup>	3		
Electives <sup>3</sup>	6		
<b>Fourth Year</b>		<b>Footnotes</b>	
<b>First Term</b>		<sup>1</sup> Actuarial Science Option students should take EconS 101, 102.	
	<b>Hours</b>	<sup>2</sup> See Mathematics Options list for suggested electives.	
Arts & Humanities [H,G], Intercultural Studies [I,G,K], or Social Sciences [S,K] (GER)	3	<sup>3</sup> See Mathematics Options list for required option courses.	
Math 401 [M]	3		
Math Option Course <sup>4</sup>	3		
Tier III Course [T] (GER)	3		
Elective <sup>3</sup>	3		
<b>Second Term</b>			
	<b>Hours</b>		
Math 402 [M]	3		
Math Option Course <sup>4</sup>	3		
Electives <sup>3</sup>	8		
<b>Footnotes</b>			
<sup>1</sup> Actuarial Science Option students should take EconS 101, 102.			
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<sup>3</sup> See Mathematics Options list for suggested electives.

<sup>4</sup> See Mathematics Options list for required option courses.