

**UWM COURSE GUIDE**  
**ASSOCIATE DEGREE (CGS) TO BACHELOR DEGREE**  
**COLLEGE OF ENGINEERING & APPLIED SCIENCE**

<b>UWM Bachelor's Degree General Education Requirements</b>				
<b>Art*</b>			3	
<b>Humanities*</b> 3 additional credits of Humanities will be taken on the Main Campus to fulfill the OWCB requirement.			3	
<b>Social Science*</b>			6	
<b>*Can also be used to satisfy the 3 credit Cultural Diversity requirement - Any course with Cultural Diversity (CD) designation</b>				
<b>Associate Degree (CGS) Courses</b>	Bachelor's Equivalent	UWM Required Credits	Comp	Need
<b><u>MATH</u></b>				
<b>CGS MAT 221</b> Calculus and Analytic Geometry I	Math 231	4		
<b>CGS MAT 222/232</b> Calculus and Analytic Geometry II* *C or better grade is needed	Math 232	4		
<b>CGS MAT 223/233</b> Calculus and Analytic Geometry III* *Electrical Engineers need to earn a C or better grade	Math 233	4		
<b><u>NATURAL SCIENCE</u></b>				
<b>CGS BIO 285 &amp; 286</b> Anatomy & Physiology 1 & 2 ( <i>Biomedical only</i> )	Bio Sci 202 & 203	8		
<b>CGS CHE 145 &amp; 155</b> General Chemistry I & II ( <i>Biomedical, Computer Engineering &amp; Electrical take CGS CHE 145 only</i> ) OR <b>CGS CHE 165</b> Chemistry for Engineers ( <i>All Engineering Majors</i> )	Chem 102 & Chem 104 or Chem 105	5-10		
<b>CGS PHY 209</b> Physics 1	Physics 209	4		
<b>CGS PHY 214</b> Lab Physics 1 ( <i>Biomedical, Electrical, Materials, Mechanical</i> )	Physics 214	1		
<b>CGS PHY 210</b> Physics 2* *Electrical Engineers need to earn a C or better grade	Physics 210	4		
<b>CGS PHY 215</b> Lab Physics 2* *Electrical Engineers need to earn a C or better grade ( <i>Biomedical, Electrical, Materials, Mechanical</i> )	Physics 215	1		
<b><u>ENGINEERING &amp; COMPUTER SCIENCE COURSES</u></b>				
<b>CGS EGR 105</b> Engineering Fundamentals ( <i>Civil, Industrial, Mechanical</i> )	Ind Eng 111 or Mech Eng 110	3		
<b>CGS EGR 110</b> Engineering Graphics with Computer Aided Drafting ( <i>Civil, Industrial, Materials</i> )	Ind Eng 112	3		
<b>CGS EGR 201</b> Statics ( <i>All Engineering majors except Computer Eng &amp; Electrical Eng</i> )	Civ Eng 201	3		
<b>CGS EGR 202</b> Dynamics* ( <i>All Engineering majors except Computer Eng &amp; Electrical Eng</i> ) *Mechanical Engineers need to earn a C or better grade	Civ Eng 202	3		
<b>CGS EGR 203</b> Strength of Materials ( <i>Civil, Materials, Mechanical</i> )	Civ Eng 303	4		

<b>CGS EGR 263</b> Engineering Thermodynamics <i>(Biomedical, Civil, Mechanical)</i>	Mech Eng 301	3		
<b>CGS EGR 282</b> Engineering Economics <i>(Civil &amp; Industrial)</i>	Ind Eng 360	3		
<b>CGS CPS 245</b> Computer Science I: Object-Oriented Programming* <i>(Computer Science &amp; Computer Engineering)</i> *Computer Engineering & Computer Science students need to earn a C or better grade	Comp Sci 250	4		
<b>CGS CPS 255</b> Computer Science II: Objects and Data Abstraction* <i>(Computer Science &amp; Computer Engineering)</i> *Computer Engineering & Computer Science students need to earn a C or better grade	Comp Sci 251	3		
<b>CGS CPS 260</b> Programming in Assembly Language* <i>(Computer Science)</i> *Computer Science students need to earn a C or better grade	Comp Sci 315	3		
<b>CGS CPS 265</b> Computer Science III Data Structures and Algorithms* <i>(Computer Science &amp; Computer Engineering)</i> *Computer Engineering & Computer Science students need to earn a C or better grade	Comp Sci 351	3		

**Preparatory Coursework in English or Math**

**Minimum of a "C" grade is required to move to the next course at UWM**

<b>CGS ENG 101</b> Composition I	Eng 101	3		
<b>CGS ENG 102</b> Composition II	Eng 102	3		
<b>CGS MAT 105</b> Intro to College Algebra	Math 105	3		
<b>CGS MAT 108</b> Algebraic Literacy 2	Math 108	3		
<b>CGS MAT 115/124</b> Pre-Calculus	Math 115	4		
<b>CGS MAT 110/116</b> College Algebra	Math 116	3		
<b>CGS MAT 113/117</b> Trigonometry	Math 117	2		

To be admissible to the College of Engineering & Applied Science transfer students typically have earned the following:

- A grade of a "C" or better CGS MAT 221
- A cumulative grade point average of a 3.0

**Majors**

Biomedical Engineering  
Civil Engineering  
Computer Engineering  
Computer Science  
Electrical Engineering  
Industrial Engineering  
Materials Engineering  
Mechanical Engineering

For more information contact the Office of Student Services at (414) 229-4667 ceas-adv@uwm.edu <http://www.ceas.uwm.edu>