

**GEORGE MASON UNIVERSITY**  
**COLLEGE OF SCIENCE**  
**B.S. DEGREE IN CHEMISTRY WITH CONCENTRATION IN CHEMISTRY EDUCATION**  
**(343 Science and Tech I, 703-993-1075)**  
<http://cos.gmu.edu/academics/undergraduate/majors/chemistry>  
**2011-2012 CATALOG**

	<u>Department(s) &amp; Course #(s)</u>	<u>Completed/ Grade(s)</u>	<u>Needed</u>
<b><u>GENERAL EDUCATION REQUIREMENTS (*27)</u></b>			
a. Written Communication: ENGH 101 (100), ENGH 302 (C or better) (3,3)		_____	___ ___
b. Oral Communication: COMM 100 or 101 (please circle choice) (3)		_____	_____
c. Quantitative Reasoning (satisfied by completion of major requirements)		_____	_____
d. Literature (3)	_____	_____	_____
e. Arts (3)	_____	_____	_____
f. Western Civilization (3)	_____	_____	_____
g. Social & Behavioral Science (3)	_____	_____	_____
h. Natural Science (satisfied by completion of major requirements)		_____	_____
i. Global Understanding (3)	_____	_____	_____
j. Information Technology (3)	_____	_____	_____
k. Synthesis (3)	_____	_____	_____

Go to: <http://chss.gmu.edu/general-education/all-requirements> to link to information on general education requirements.

**MAJOR REQUIREMENTS (86 hours required)**

a. CHEM 211, CHEM 212 (4,4)	a. _____	_____	_____
b. CHEM 313, CHEM 314 (3,3)	b. _____	_____	_____
c. CHEM 315 (2)	c. _____	_____	_____
d. CHEM 321 (4)	d. _____	_____	_____
e. CHEM 331 (3)	e. _____	_____	_____
f. CHEM 446 (3)	f. _____	_____	_____
g. CHEM 463 (4)	g. _____	_____	_____
h. CHEM 470 (3)	h. _____	_____	_____
i. CHEM 336 (writing intensive course) or CHEM 465 (writing intensive course) (2)	i. _____	_____	_____
j. One three-credit upper-level CHEM course (list course #) (3) CHEM _____	j. _____	_____	_____
k. BIOL 103 or BIOL 213 (circle choice) (4)	k. _____	_____	_____
l. GEOL 101 (4)	l. _____	_____	_____
m. MATH 113 (4)	m. _____	_____	_____
n. MATH 114 (4)	n. _____	_____	_____
o. STAT 250 (3)	o. _____	_____	_____
p. PHYS 243, 244; PHYS 245, 246 (3,1;3,1) OR PHYS 160/161; PHYS 260/261 (3,1; 3, 1)	p. _____	_____	_____
q. Twenty-one credits of education courses: EDUC 372, EDUC 422 (3,3) EDCI 473, EDCI 483 (3,3) EDCI 490, EDRD 419 (3,3)		_____	_____

**Students majoring in chemistry must complete the chemistry program requirements with a minimum GPA of 2.30 and present no more than two courses with a grade of D (1.00) in CHEM coursework at graduation.**

**GENERAL ELECTIVES** (List courses)

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**MINIMUM HOURS TO GRADUATE: 120**

**UPPER DIVISION HOURS (minimum 45):**

This planning form is intended to be used in consultation with your academic advisor and reflects the requirements for the 2011-2012 Catalog; the University Catalog is the official reference for program requirements.

# COURSE LISTS (CHEMISTRY, BS, CONCENTRATION IN CHEMISTRY EDUCATION)

## University General Education Requirements

Written Communication: ENGH 101 (or 100) and ENGH 302

Oral Communication: COMM 100 or COMM 101

Quantitative Reasoning: **MATH 113**. (The Math Placement Test is required to take MATH 113. See this web site for more information: [http://cos.gmu.edu/academics/undergraduate/math\\_placement\\_testing](http://cos.gmu.edu/academics/undergraduate/math_placement_testing))

Literature: ARAB 325; CHIN 310, 311, 325, 328; CLAS 250, 260, 340, 350, 360, 380; ENGH 201, 202, 203, 204; FREN 325, 329; FRLN 330; GERM 325; ITAL 325; PHIL 253; RELI 235; RUSS 325, 326, 327; SPAN 325

Arts: ARTH 101, 102, 103, 200, 201, 203, 204, 321, 322, 324, 333, 334, 335, 340, 341, 342, 344, 345, 360, 362, 372, 373, 376; AVT 103, 104, 215, 222, 232, 243, 252, 253, 262, 272; DANC 101, 119, 125, 131, 145, 161, 225, 231, 245, 301, 390, 391; ENGH 372, 396; MUSI 100, 101, 102, 107, 301, 302, 380, 381, 382, 383, 384, 385, 387, 389, 485; PHIL 156; THR 101, 150, 151, 210, 230, 395, 411, 412.

Western Civilization: HIST 100 or 125; transfer students may substitute the following courses for HIST 100 or 125: HIST 101, 102, 301, 302, 304, 305, 306, 308, 309, 314, 321, 322, 388, 435, 436, 480.

Social and Behavioral Sciences: AFAM 200; ANTH 114, 120, 135, 396; CONF 101; CONS 410; CRIM 100; ECON 100, 103, 104, 105, 110, 111 (110 and 111 must be taken together); **EDUC 372**; GGS 103; GOVT 101, 103; HEAL 230; HIST 121, 122; LING 326; PSYC 100, 211, 231; SOCI 101; SOM 100; TOUR 311; WMST 200

Natural Sciences: CHEM 211 & 212

Global Understanding: ANTH 302, 304, 306, 307, 308, 309, 311, 312, 313, 331, 332, 385; ARTH 319, 320, 380, 382, 383, 384, 385, 386; CEIE 100; COMM 305, 456; CRIM 405; DANC 118, 318; ECON 360, 361, 362, 380, 390; ENGH 362, 366; GCH 205; GGS 101; GLOA 101; GOVT 132, 133; HIST 130, 251, 252, 261, 262, 271, 272, 281, 282, 328, 329, 356, 358, 360, 364, 365, 387, 460, 462; JAPA 310; MSOM 305; MUSI 103, 431; PSYC 379; RELI 100, 211, 212, 313, 315, 341, 374; RUSS 354; SOCI 120, 320, 332; SPAN 322; SYST 100; THR 359, TOUR 210; WMST 100

Information Technology: **One of these courses**: ANTH 395, CDS 130, CHEM 350, CRIM 300, ENGR 117, GOVT 300, IT 103, MUSI 415 **or Course(s) from a) and one course from b): a)** AVT 180; CS 112; PHYS 251; PSYC 300, 301, & 372 (all three must be taken and in sequence); SOCI 410 **b)** CDS 151, CS 105, ENGR 107, ENGR 401, IT 304, PHIL 112

Synthesis: ANTH 400; ARTH 394; AVT 497, 498; BINF 354; BIOL 301; BIS 490; CEIE 490; COMM 326, 362, 454; CONF 490; CONS 490; CRIM 495; CS 306; DANC 490; ECE 447, 492, 493; ECON 309; **EDCI 490**; ENGH 305; EVPP 335; FAVS 352; FRLN 385; GEOL 420; GGS 303, 304; GOVT 490, 491; HAP 465; HIST 300, 499; IT 492; LAS 499; MATH 400; MUSI 490; NCLC 308; PHIL 309, 343, 377, 378; PSYC 405, 406; RELI 490; RUSS 353; SOCI 377, 483; SOCW 323, SOM 498; SPAN 388; SYST 495; THR 440, 496; PROV 342; UNIV 442