

**Accelerated Master's Degree (BS/MS in CHE)**

<b>Fall Semester</b>	<b>Credit</b>	<b>Spring Semester</b>	<b>Credit</b>
CH 101 (or 103) General Chemistry I <sup>1a</sup>	3	CH 201 (or 203) General Chemistry II <sup>1b</sup>	3
CH 102 (or 104) General Chemistry I Lab <sup>1a</sup>	1	CH 202 (or 204) General Chemistry II Lab	4
E 101 Introduction to Engr & Prob Solv <sup>1a</sup>	1	MA 241 Calculus II <sup>1a</sup>	3
E 115 Intro to Computing Environ	1	PY 205 Physics for Engr & Sc I <sup>1a</sup>	1
ENG 101 Academic Writing and Research <sup>1a</sup>	4	PY 206 Physics for Engr & Sc I Lab <sup>1a</sup>	2
MA 141 Calculus I <sup>1a</sup>	4	E 102 Engr in the 21 <sup>st</sup> Century	<u>1</u>
HESx 1** Fitness & Wellness Course*	<u>1</u>	HESx (100 or 200 level) Elective*	<u>15</u>
	<b>15</b>		

<b>Fall Semester</b>	<b>Credit</b>	<b>Spring Semester</b>	<b>Credit</b>
CH 221 (or 225) Organic Chemistry I <sup>1b</sup>	3	CH 223 (or 227) Organic Chemistry II	3
CH 222 (or 226) Organic Chemistry I Lab	1	CH 224 (or 228) Organic Chemistry II Lab	3
CHE 205 Chemical Proc Prin <sup>1b</sup>	4	CHE 225 Chemical Proc Systems <sup>1b</sup>	3
MA 242 Calculus III <sup>1b</sup>	4	MA 341 Applied Differential Eq <sup>1b</sup>	3
GEP Requirement*	<u>3</u>	PY 208 Physics Engr & Scientists II	1
	<b>15</b>	PY 209 Physics Engr & Scientists II Lab	<u>3</u>
		GEP Requirement*	<u>17</u>

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CH *** Chemistry Elective <sup>2</sup>	4	CH 315 Quantitative Analysis	3
CHE 311 Transport Processes I <sup>1b</sup>	1	CH 316 Quantitative Analysis Lab	1
CHE 315 Chem Process Thermo <sup>1b</sup>	3	CHE 312 Transport Processes II	3
ECE 331 Prin Electrical Engr <b>OR</b>	3	CHE 316 Thermo of Chem & Phase Eq	3
MSE 201 Struct & Prop Engr Mat	3	CHE 330 Chem Engr Lab I	4
GEP Requirement*	3	Free Elective	<u>3</u>
CHE 395 Professional Dev Seminar	<u>1</u>		<b>17</b>
	<b>17</b>		

<b>Fall Semester</b>	<b>Credit</b>	<b>Spring Semester</b>	<b>Credit</b>
CHE 331 Chem Engr Lab II	2	CHE 525 Proc System Analy & Control	3
CHE 546 Des & Analy Chem Reactors	3	CHE 451 CHE Design II	3
CHE 450 CHE Design I	3	500-Level CHE Technical Elective	3
500-Level CHE Technical Elective	3	GEP Requirement*	3
GEP Requirement*	<u>3</u>	EC 205 Econ (or EC 201 or ARE 201)*	<u>3</u>
	<b>14</b>		<b>15</b>

<b>Fall Semester</b>	<b>Credit</b>	<b>Spring Semester</b>	<b>Credit</b>
CHE 711 ChE Process Modeling	3	CHE 596U Special Topics in CHE	3
CHE 713 Thermodynamics I	3	CHE 715 Transport Phenomena	3
CHE 717 Chem Reaction Engineering	<u>3</u>	CHE Graduate Elective	<u>3</u>
	<b>9</b>		<b>9</b>

Minimum Credit Hours Required for Graduation:<sup>3</sup>

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**Major/Program requirements and footnotes:**

<sup>1a</sup> Must be completed with grade of (C) or higher.

<sup>1b</sup> Must be completed with grade of (C-) or higher.

<sup>2</sup> Chemistry electives include: PCC 461/464: Chemistry of Polymeric Materials (fall only); BCH 451: Principles of Biochemistry; BCH 351, General Biochemistry; CH 437: Physical Chemistry (spring only); FS 402: Chemistry of Food and Bioprocessed Materials (fall only); FS 403: Analytical Techniques in Food and Bioprocessing Science (spring only); PSE 335: Green Chemistry (fall only); TOX 415: Environmental Toxicology and Chemistry (fall only).

<sup>3</sup> Students must have an overall GPA of 3.5 through the end of the junior year and must maintain this GPA through the senior year to be admitted into the program. Students who wish to complete the Accelerated BS/MS ChE degree program must apply for candidacy to the MS degree during the spring semester of the junior year (semester during which CHE 312/316 are completed). The admissions process includes submitting the following information to the Chemical and Biomolecular Engineering Graduate Administrator, Dr. Saad Khan:

- (1) Completed copy of the signed graduate application form
- (2) NC Residency Form if you wish to claim NC residency for tuition purposes
- (3) Non-Refundable application fee in form of a check or money order
- (4) Three letters of recommendation
- (5) Official transcript sent directly from every college and graduate school attended
- (8) Graduate Record Examination (**GRE**) scores

Students must receive a grade of B (3.0/4.0) or better in the double counted graduate level courses. Courses with a grade of B- or below cannot be double counted between the two degrees. No more than twelve (12) hours of graduate work may be counted towards the requirements of both degrees. Students must complete the Master's degree within 12 months from the completion of the baccalaureate degree for a non-thesis Master's degree and within 18 months for Master's programs requiring a thesis. If the Master's program is not completed within these time limits, none of the courses can be double counted. Note that the B.S. Degree must be completed in order to get the dual BS/MS (students cannot double major in something else and then skip to the MS CHE). Recipients of the MS degree must earn a minimum semester GPA of 3.0 during the final two semesters, including no more than one C grade in 500 and 700 level CHE courses.

**\*General Education Program (GEP) requirements:**

To complete the requirements for graduation and the General Education Program, the following credit hours and co-requisites must be satisfied. University approved GEP course lists for each category can be found at <http://www.ncsu.edu/uap/academic-standards/>.

PHYSICAL EDUCATION - 2 hours to be selected from the approved GEP Physical Education list.

**a.** One fitness and wellness course (any PE 100-level course).

**b.** One additional credit hour of PE activity courses.

HUMANITIES - 6 credits to be selected in two different disciplines (two different course prefixes) from the approved GEP Humanities list.

SOCIAL SCIENCES - 3 credits to be selected in a discipline other than economics from the approved GEP Social Sciences list. EC 205 (or EC 201 or ARE 201) taken as part of the Major requirements satisfies 3 credit hours of the 6 credit hours needed to fulfill the GEP Social Sciences requirement.

ADDITIONAL BREADTH - 3 credits to be selected from the approved GEP Humanities, Social Sciences or Visual and Performing Arts lists.

INTERDISCIPLINARY PERSPECTIVES - 5 credits to be selected from the approved GEP Interdisciplinary Perspectives list.

**Co-requisites:**

U.S. Diversity and Global Knowledge co-requisites must be satisfied to complete the General Education requirements. Choose course(s) that are identified on the approved GEP course lists as meeting the U.S. Diversity and Global Knowledge co-requisites.