

CHEMICAL ENGINEERING

<http://www.cems.umn.edu/>

TO BE PUT INTO EFFECT WITH CHEN SOPHOMORES READY FOR ChEn 2001 IN FALL 08 (i.e., Class of 2011 - Jrs in Fall 09, Srs in Fall 10)

Department version.

Freshman Year (many students take a lib ed elective in the May or Summer term)

Fall Semester	crs	Spring Semester	crs
Chem 1021 Chem Prin I	4	Chem 1022 Chem Prin II <i>[Chem 1021]</i>	4
Math 1371 (or 1271) Calc I <i>(1371 Fall only)</i>	4	Math 1372 Calc II <i>[C or better in 1271 or 1371]</i>	4
Phys 1301W Intro Phys I <i>[&Math 1271 or &Math 1371]</i>	4	UD Phys 1302W Intro Phys II <i>[&Math 1272 or &1372, Phys 1301]</i>	4
UD Freshman Writing - Lib Ed	3 or 4	Lib Ed* (e.g. Biol 1009)	3 or 4

* Biol 1009 is recommended in the first year.

Sophomore Year

Fall Semester (change Fall 08)	crs	Spring Semester (change Spring 09)	crs
Chem 2301 Org Chem I <i>[Chem 1022]</i>	3	UD Chem 2302 Org Chem II <i>[Chem 2301]</i>	3
UD ChEn 2001 Matl and En Bal 3:35 <i>[Chem 2301 or &, Math 2374 or &, Phys 1302 or &]</i>	4	UD Chem 3501 Chemical Thermo 11:15 <i>[Chem 1022, Math 2263 or 2374, Phys 1302]</i> Chem 3501 can be taken earlier	3
\$ MatS 3011 Intro MatSci 2:30 <i>[Chem 1021, Math 1272, Phys 1302]</i>	3	UD Math 2373 Lin alg/diff eqs <i>[Math 1272 or 1372]</i>	4
UD Math 2374 Multivar. Calc and Vec An <i>[Math 1272 or 1372]</i>	4	UD Chem 2121 Analyt Chem 12:20 <i>[2302 or &, 3501 or &, ChEn only]</i> Until Sum'10 Chem 2101 + 2111 can substitute.	3
Lib Ed*** (e.g. Hist)	3	Lib Ed*** (e.g., Soc Sci I)	3

& Registrar symbol for concurrent registration

Bold-bordered courses are offered only once a year.

*** For eng degrees, the two Soc Sci, the Hist, the Lit, and the Other Hum lib eds must fill both a core and a theme to guarantee 4-year degree program. These may be taken S/N.

UD You must have at least a 2.60 technical GPA for admission to upper division Chemical Engineering. This GPA includes all calculus, physics, chemistry, computer science, and engineering courses. In addition, courses with UD need to be completed before you apply, unless you have at least a 2.90 tech GPA and the courses in progress.

Junior Year

Fall Semester (change Fall 09)	crs	Spring Semester (change Spring 10)	crs
Chem 2311 Organic Lab <i>[Chem 2302 or &2302]</i>	4	ChEn 3401W JrChEnLab 9:05 <i>UD, [(3006 or &, 3102 or &, 3201 or &, Chem 2121, Chem 2311) or eq.]</i>	2
ChEn 3701 Biomolec Eng 8 <i>[Chem 2302, Math 2373 or &, 2001, h.s. biology rec'd]</i>	3	ChEn 3006 Mass Tran & Sepns 8 <i>[UD ChEn, 2001, 3005, 3101]</i>	4
ChEn 3005 Fluid and Heat Transprt 10:10 <i>[UD ChEn, 2001]</i>	4	ChEn 3102 React Kin & Eng. 11:15 <i>[UD ChEn, 2001, 3101]</i>	4
ChEn 3101 Chem Eng I thermo 1:25 <i>[UD ChEn, 2001, Chem 3501]</i>	4	ChEn 3201 Comp Mthds in ChEn 10:10 <i>[UD ChEn, 2001, 3005, 3006 or &]</i>	3
Chem/ChEn dbl majors should take Chem 4701 12:20 this semester with Chem dept. approval; ChEn 3701 may be postponed to Sr. Fall		Lib Ed*** (e.g. Soc Sci II)	3

Senior Year

Fall Semester (change Fall 10)	crs	Spring Semester (change Spring 11)	crs
ChEn 4401W Senior Chem Eng. Lab 12:20 <i>[UD ChEn, 3005, 3006, 3101, 3102]</i> 3201, 3401, Chem 2121, 2311, Fresh Writing]	3	ChEn 4502W Chem Eng Proc Des II 9:05 Wed, Fri <i>[UD ChEn, 4501]</i>	2
ChEn 4501W Chem Eng Proc Des I 11:15 <i>[UD ChEn, 3005, 3006, 3101, 3102, 3201, 3401, Chem 2311, 2121, Fresh. Writing]</i>	3	Chem 3502 Quantum Chem 10:10 <i>[Chem1022, &Math 2263 or 2374, Phys 1302]</i> Chem 3502 can be taken earlier	3
ChEn 4601 Process Control 9:05 <i>[UD ChEn, ChEn 3102]</i>	3	@ ChEn 4214 Polymers 11:15 <i>[UD, MatS 3011, [MatS 4001 or ChEn 3101]]</i> *	3
@ Tech elective I	3	MatS 4214 can be taken earlier after Mats 3011	
Lib Ed*** (e.g. Lit)	3	@ Tech elective II	3
		@ Tech elective III	3
		Lib Ed*** (e.g. Art/Hum)	3

Reformed course numbers in bold.

For some courses, prereqs and MWF lecture times are shown in italics.

Course changes approved in Sept. 2007

\$ Recommended at this position in the plan, but can be delayed with advisor approval.

@ Preapproved or with DUS/ChEn-advisor approval. Several restrictions apply.

Max 2 cr. nontechnical, max 6 cr. transfer, even if approved.

* Tech electives must be 9 cr., in addition to ChEn 4214 (or DUGS-approved substitute to ChEn 4214).

As of 2007-08 academic year ChEn 4214 is offered in the Spring.