

Organic and Physical CHEMISTRY COURSES In 89 ChE Curricula

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The School of Engineering at the University of Pittsburgh has a one-and-a-half year common curriculum for its freshmen and first-term sophomores. As a result, the Chemical Engineering curriculum requires Chemical Engineering majors to take seven credits of organic chemistry and eight credits of physical chemistry in their junior year.

The faculty of the Chemical Engineering Department is concerned that this requirement places a severe burden on our juniors. As a tool to guide the faculty in studying this problem, a review has been made of the organic and physical chemistry requirements of 89 chemical engineering curricula which were on file in catalogs in the University of Pittsburgh libraries.

Table I shows the credits and timing of organic and physical chemistry by the 89 schools. It also shows the number of years in the common curriculum and whether the chemical engineering curriculum is accredited by AIChE.

The following conclusions have been drawn from the data in Table I:

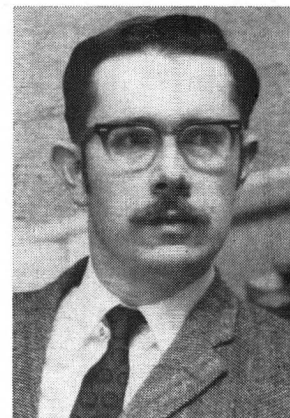
1. Nine schools provide no set curriculum, only guidelines and general course requirements.
2. Of the other 80, 53 make essentially a complete separation between organic and physical chemistry. The other 27 overlay these two areas; however, 13 of these stagger the courses somewhat. Only 14 schools out of 89 require both organic and physical chemistry at the same time completely.
3. Five of the 14 schools requiring complete overlap of organic and physical chemistry report a two year core sequence. The following table summarizes the "core" situation:

Years in Core	Number of Schools
0	43
1	35
2	7
3	2
4	2

Those schools with two or more years in the "core" are clearly in the minority. The two schools with two core years without complete overlap in organic and physical chemistry accomplish this by (1) moving the first organic course into the second core year and (2) moving physical chemistry to the senior year.

4. Miscellaneous facts about organic and physical chemistry:

- (1) 19 schools offer physical chemistry below the junior year.
- (2) 44 schools offer organic chemistry above the sophomore year.
- (3) 13 schools go outside the sophomore and junior years to offer portions of organic and physical chemistry.
- (4) Six schools teach some or all of the organic and physical chemistry courses in the Chemical Engineering Department. Only one of these schools lacks a Chemistry Department. □



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TABLE I. CREDITS AND TIMING OF ORGANIC AND PHYSICAL CHEMISTRY IN 89 CHE CURRICULA.

Years in Core	Organic Chemistry							Physical Chemistry					School	Accredited		
	F1	F2	S1	S2	J1	J2	S1	S2	5th	F1	F2	S1			S2	
1	4	4									4	4		1	yes	University of Alabama (1970)**
	3	3									3	3		2	yes	University of Illinois at Urbana (1969-70)
			4	4							4	4		3	yes	University of Missouri at Rolla (1970-71)
	5													4	yes	University of Oklahoma (1970)
1			4	4							3	3	3	5	yes	Newark College of Engineering (1975)
			4*											6	yes	University of Pennsylvania (1970-71)
			4#	4#							4#	4#	3*	7	yes	University of Calif. at Berkeley (1969-71)
					3	5					3	2		8	yes	Cornell University (1970-71)
4			4*									4*		9	no	Stevens Institute of Technology (1970-71)
1			3	3								4	4	10	yes	Massachusetts Institute of Tech. (1969-70)
					4	4							3	11	yes	University of Maine
			4#	4#									4	12	yes	University of Arizona (1970-71)
			5	3									5	13	yes	California Institute of Tech. (1970-71)
			4#	4#									4#	14	yes	Kansas State University (1970-71)
													4#	15	yes	Auburn University (1970-71)
	4	4											4	16	yes	Bucknell University (1971-73)
2			4#	2#									3#	17	yes	University of Calif. at Davis (1969-70)
1.5					3	3							3	18	yes	Case-Western Reserve University (1970-71)
1													4c	19	yes	University of Cincinnati (1969-70)
1					3	3							3	20	yes	Clarkson College of Tech. (1970-71)
1			3	4									4	21	yes	Clemson University (1970-71)
1													5#	22	yes	Cleveland State University (1970-71)
1					4	4							4	23	yes	Colorado School of Mines (1970-71)
1			4	4									3	24	yes	University of Colorado (1970-71)
1					6	3							4c	25	yes	Columbia University (1969-70)
			3c	4c									5c	26	yes	Cooper Union (1970-71)
4							3#						3#	27	yes	Dartmouth College (1970-71)
1			4	4									4	28	no	University of Dayton (1970-71)
			4#	4#									4#	29	yes	Georgia Institute of Tech. (1969-70)
			4	4									4	30	no	Grove City College (1970-71)
1			3	3									4	31	yes	University of Idaho (1969-71)
1					4	3							4	32	yes	Illinois Institute of Tech. (1969-70)
1-1/3					4#								3#	33	no	University of Illinois at Chicago (1969-70)
1			3#	2#									4#	34	no	Indiana Institute of Technology (1970-72)
1			4#	4#									2#	35	yes	Iowa State Univ. of Science & Tech. (1969-71)
1			---	5	---	---	---	---	---	---	---	---	3	36	yes	University of Kansas (1970-71)
			3	4									3	37	no	University of Kentucky (1970-71)
2					4	4							3	38	yes	Lafayette College (1969-70)
2					4	4							3	39	yes	Lamar State College of Tech. (1970-71)
1					5								3	40	yes	Lehigh University (1970-71)
1					3#	1#							3#	41	yes	Louisiana Polytechnic Institute (1969-71)
1					3	5							3	42	yes	Louisiana State University (1970-71)
2			4	4									4	43	no	Lowell Technological Institute (1970-71)
1			4	3c									3	44	yes	Manhattan College (1970-71)
			4#	4#									5#	45	yes	University of Massachusetts (1969-70)
			5#	3#									3#	46	yes	Michigan Technological University (1971-72)
					4	4							4	47	yes	University of Minnesota (1969-71)
1													4	48	yes	Mississippi State University (1970-71)
			4	4									4	49	yes	University of Mississippi (1970)
			3	3									4	50	yes	Montana State University (1970-72)
1			5	5									5	51	yes	University of New Hampshire (1969-70)
1			4	4									4	52	yes	New Mexico State University (1969-70)
1			4	4									3	53	yes	New York University (1969-70)
1			4	4									4	54	yes	N.C. State Univ. at Raleigh (1968-70)
					5	5							5c	55	yes	University of North Dakota (1970-72)
1					3	3							3	56	yes	University of Notre Dame (1969-70)
			3	3									3	57	yes	Ohio State University (1970-71)
			5	3									3	58	yes	Polytechnic Inst. of Brooklyn (1969-70)
1					4	3							3	59	yes	Pratt Institute (1970-71)
1			---	8	---	---	---	---	---	---	---	---	4	60	yes	Princeton University (1970-71)
3													3	61	yes	Rensselaer Polytechnic Inst. (1970-71)
1					4	4							4	62	yes	University of Rhode Island (1969-70)
2														63	yes	Rice University (1970-71)
1			5	5									4	64	yes	University of Rochester (1968-69)
1			3	3									5	65	no	Rutgers, The State Univ. (1970-72)
3			---	8	---	---	---	---	---	---	---	---	4	66	yes	San Jose State College (1970-72)
1					4	4							3	67	yes	University of South Carolina (1970-71)
			4										4	68	yes	S.Dakota School of Mines and Tech. (1968-70)
													2#	69	yes	University of Southwestern Louisiana (1969-70)
													4#	70	yes	Stanford University (1970-71)
1					4	3							4	71	yes	Syracuse University (1969-70)
					4#	4#							4#	72	no	Tennessee Technological Univ. (1967-70)
					2#	4#							2#	73	yes	University of Tennessee (1970-71)
2					4	4							4	74	no	Texas A & I University (1970-71)
1			4	4									4	75	yes	Texas A & M University (1970-71)
			4	4									4	76	yes	University of Texas (1968-70)
			4#	2#									4#	77	yes	University of Toledo
					5#	5#							5#	78	no	Tri-State College
1			---	---	---	---	---	---	---	---	---	---	---	79	yes	Tulane University (1971-72)
			4	4									4	80	yes	University of Tulsa (1970-71)
			3#	2#									4#	81	yes	University of Utah (1970-71)
1			3	5									4	82	yes	Vanderbilt University (1970-72)
			1	3									4	83	yes	Washington State University (1970-72)
2					4#	2#							3#	84	yes	Wayne State University (1970-71)
			4	4									4	85	no	W. Virginia Institute of Tech. (1970-71)
			3	5									4	86	yes	University of Wisconsin (1967-69)
1					4	4							4c	87	yes	Worcester Polytechnic Inst. (1970-71)
					3	3							4	88	no	University of Wyoming (1970-71)
			---	3	---	---	---	---	---	---	---	---	---	89	no	Yale University (1970-71)

c taught by Ch.E. Dept; # quarter system. Credits approximate only; *student plans own program. Suggestion only but prerequisites and course series may lock student into "normal" program; **Year of catalog or curriculum.