KEAN UNIVERSITY – COLLEGE OF NATURAL, APPLIED AND HEALTH SICENCES

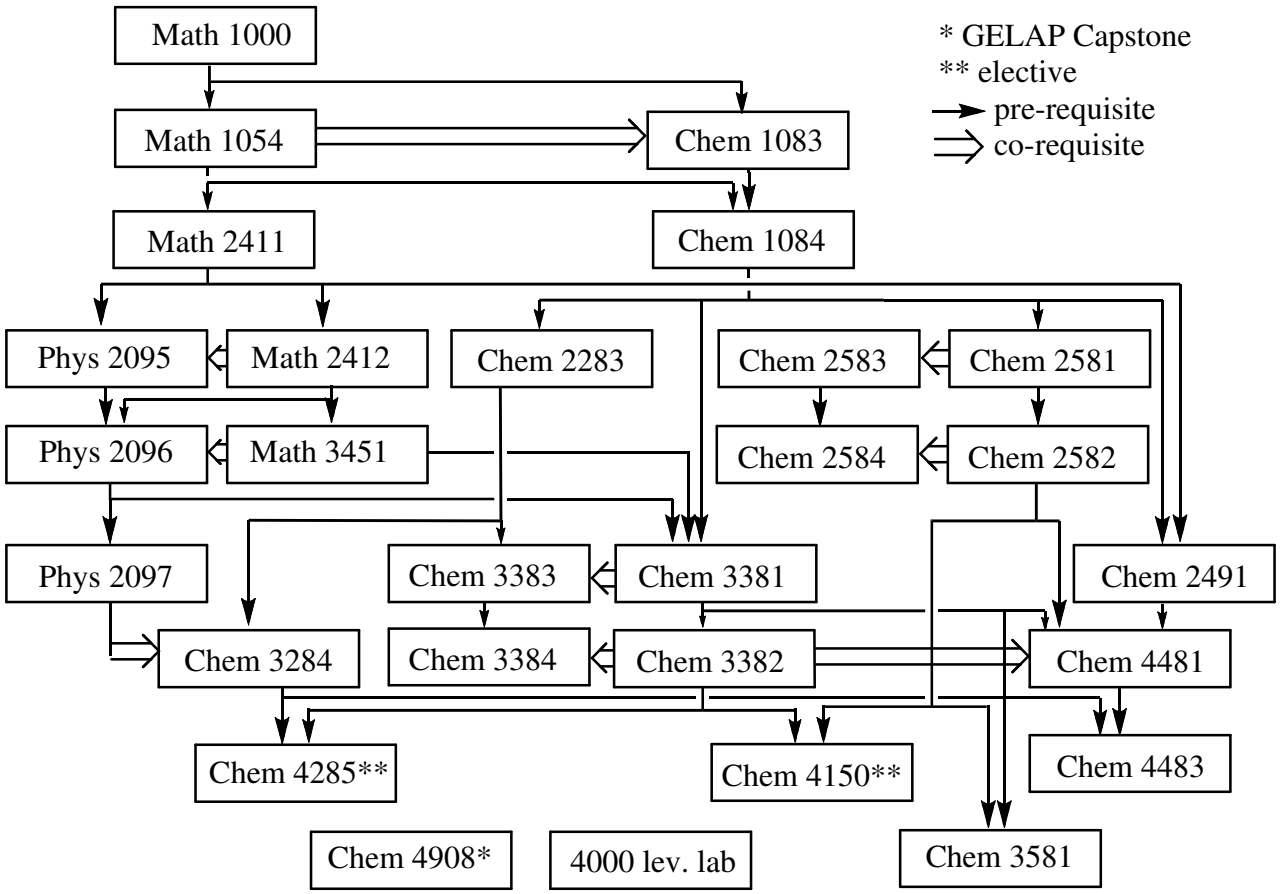
(72102) B.S. IN CHEMISTRY (EXPANDED OPTION – ACS CERTIFIED) : 124 S.H.

EFFECTIVE DATE: Fall 2009 **START TERM: _____**

NAME		TRANSFER INSTITUTIONS (X) Credits:	
STUDENT ID#		In Progress	
GENERAL EDUCATION: 32 Semester Hours (S.H.)		****ACADEMIC Major and Capstone Requirements 57 S.H.**	
Foundation Requirements 13 S.H.		CHEM 1083 Chemistry I	4
GE 1000 Transition to Kean	1	CHEM 1084 Chemistry II	4
ENG 1030 College Composition	3	CHEM 2283 Quantitative Analysis	4
MATH 1000 Algebra for College Students	3	CHEM 2581 Organic Chemistry I	3
COMM 1402 Speech Communication	3	CHEM 2582 Organic Chemistry II	3
GE 2024 Research & Technology	3	CHEM 2583 Organic Chemistry Lab and Recitation I WE	2
		CHEM 2584 Organic Chemistry Lab and Recitation II	2
Disciplinary & Interdisciplinary Distribution Requirements:		CHEM 2491 Inorganic Chemistry	3
		CHEM 3284 Instrumental Method of Analysis WE	4
***Humanities*: 6 S.H. (from different areas)**		CHEM 3381 Physical Chemistry I	3
*ENG 2403 World Literature	3	CHEM 3382 Physical Chemistry II	3
Select one course from below:		CHEM 3383 Physical Chemistry Lab and Recitation I	2
Fine Arts/Art History	3	CHEM 3384 Physical Chemistry Lab and Recitation II	2
Philosophy or Religion	3	CHEM 3581 Biochemistry	3
Foreign Languages (Must take I and II for credit)	3	CHEM 4481 Advanced Inorganic Chemistry	3
Music or Theatre	3	CHEM 4483 Inorganic Chemistry Laboratory	3
Interdisciplinary	3	4000 level Chemistry lab course	3
		One 4000 level lecture courses in Chemistry, Physics, Math or Earth science	3
***Social Sciences*: 6 S.H. (from different areas)**			
*HIST 1000 History of Civil Society in America Or HIST 1062 Worlds of History	3		
		****G.E. and Major Capstone:**	
Select one course from below:		CHEM 4908 Seminar in Chemistry	3
Psychology	3		
Economics or Geography	3		
Political Science	3	**FREE ELECTIVES: 18 S.H.**	
Sociology or Anthropology	3	**at least 50% must be 3000/4000level**	
Interdisciplinary	3		
***Science and Mathematics*: 7 S.H.**			
MATH 1054 Precalculus	3		
PHYS 2095 Physics I	4		
Additional Required Courses: 17 S.H.			
MATH 2411 Calculus I	3	**Other Transfer:**	
MATH 2412 Calculus II	3		
MATH 3451 Calculus III	3	**Special Notes:**	
PHYS 2096 Physics II	4	***G.E. required course**	
PHYS 2097 Physics III	4	****All Major courses require a grade of C or better**	
		Note: See foreign language requirements	
		TOTAL CREDITS:	
		Advisor:	
		Advisor Signature:	

Rev. 07/09

Recommended Course Sequence for Expanded Option



First Year

Fall Semester			*Spring Semester*		
Chem 1083	Chemistry I	4 Cr.	Chem 1084	Chemistry II	4 Cr.
Math 1054	Precalculus	3 Cr.	Math 2411	Calculus I	3 Cr.

Second Year

Fall Semester			*Spring Semester*		
Chem 2283	Quant Analysis	4 Cr.	Chem 2582	Organic Chem II	3 Cr.
Chem 2581	Organic Chem I	3 Cr.	Chem 2584	Org Chem Lab II	2 Cr.
Chem 2583	Org Chem Lab I	2 Cr.	Phys 2096	Physics II	4 Cr.
Phys 2095	Physics I	4 Cr.	Math 3451	Calculus III	3 Cr.
Math 2412	Calculus II	3 Cr.			

Third Year

Fall Semester			*Spring Semester*		
Chem 2491	Inorganic Chem	3 Cr.	Chem 3284	Instrumental Analysis	4 Cr.
Chem 3381	Physical Chem I	3 Cr.	Chem 3382	Physical Chem II	3 Cr.
Chem 3382	Phys Chem Lab I	2 Cr.	Chem 3384	Phys Chem Lab II	2 Cr.
Phys 2097	Physics III	4 Cr.	Chem 4481	Adv. Inorg Chem	3 Cr.

Fourth Year

Fall Semester			*Spring Semester*		
Chem 4481	Inorg Chem Lab	3 Cr.	Chem 3581	Biochemistry	3 Cr.
4000 Level Lecture course		3 Cr.	Chem 4908	Seminar in Chem	3 Cr.
4000 Level Lab course		3 Cr.			

Prerequisite and Corequisite for Chemistry/Physics courses

Course	Prerequisite	Corequisite	Semester Offered			
			F	S	SI	SII
General Chemistry						
Chem 1010: Prep Chem	One 1000 level Math course		x	x		
Chem 1030: Essent. Chem	One 1000 level Math course		x	x		
Chem 1083: Chem I	Math 1000, H.S. Chemistry	Math 1054	x	x	x	
Chem 1084: Chem II	Math 1054 & Chem 1083(C)		x	x		x
Chem 1200: Chem in World	One 1000 level Math course		x	x		
Organic Chemistry						
Chem 2180: Princ O-Chem	Chem 1084			x		
Chem 2581: O-Chem I	Chem 1084		x	x	x	
Chem 2582: O-Chem II	Chem 2581(C)		x	x		x
Chem 2583: O-Chem Lab I		Chem 2581	x	x		
Chem 2584: O-Chem Lab II	Chem 2583 (C)	Chem 2582	x	x		
Chem 4150: Spec ID	Chem 2582 & Chem 3382		x			
Chem 4181: O-Chem III	Chem 2582		variable			
Chem 4182: Adv O-Prep	Chem 2584		variable			
Chem 4183: Phys Org Chem	Chem 2582 & Chem 3382		variable			
Chem 4184: Mol Modeling	Chem 2582 & Chem 3382			x		
Analytical Chemistry						
Chem 2283: Quant Anal	Chem 1084(C)		x	x		
Chem 3284: Inst Anal	Chem 2283, Math 2411, Phys 2096		x	x		
Chem 4284: Exp Anal Prob Solv	Chem 2584, 3284, 3383		variable			
Chem 4285: Chem Sep	Chem 2582, 3284 & 3382		variable			
Physical Chemistry						
Chem 3381: P-Chem I	Chem 1084, Math 3451 Phys 2096		x			
Chem 3382: P-Chem II	Chem 3381			x		
Chem 3383: P-Chem Lab I	Chem 2283	Chem 3381	x			
Chem 3384: P-Chem Lab II	Chem 3383	Chem 3382		x		
Chem 4381: P-Chem III	Chem 3382 & Math 3452		variable			
Chem 4382: P-Chem IV	Chem 3382 & Math 3452		variable			
Inorganic Chemistry						
Chem 2491: Inorg Chem	Chem 1084(C)		x	x		
Chem 2493: Desc Inorg Lab		Chem 2491				
Chem 4481: Adv. Inorg Chem	Chem 2491, 2582, 3381	Chem 3382		x		
Chem 4483: Inorg. Chem Lab	Chem 3284, 4481		x			

Course	Prerequisite	Corequisite	Semester Offered			
			F	S	SI	SII
Biohemistry						
Chem 3581: Biochem	Chem 2582			x		
Chem 3583: Biochem Lab	Chem 3581(C)			x		
Research and Seminar						
Chem 3500: Chem/Phys Coop	Chem 2283, 2581, 2583	Jr or Sr	upon request			
Chem 3901-4: Ind Chem Res	8 cr. Chem 12 cr. Sci/Math (2000 level)	Chair approval	upon request			
Chem 4905-6: Senior Res	Chem 3381, 3383	Chair approval	upon request			
Chem 4908: Sem in Chem	GELAP req.			x		
Chem 4909: Special Topics	25 cr. Chem	Inst permission	variable			
Physics Course						
Phys 2091: Gen Phys I	Math 1054		x	x	x	
Phys 2092: Gen Phys II	Phys 2091		x	x		x
Phys 2095: Physics I	Math 2411	Math 2412	x			
Phys 2096: Physics II	Phys 2095, Math 2412			x		
Phys 2097: Physics III	Phys 2096, Math 3451		x			
Phys 4592: Modern Phys	Phys 2096		variable			
Phys 4593: Landmark Phys	Phys 2096		variable			
Phys 4901: Ind Phys Research	Phys 2096	Chair approval	upon request			