REVISED SYLLABUS OF RECORD FOR CHEM 341 PHYSICAL CHEMISTRY I

I. <u>CATALOG DESCRIPTION</u>

COURSE TITLE:

CHEM 341, Physical Chemistry I

NUMBER OF CREDITS:

4 cr (4c-01-4cr)

PREQUISITES:

PHYS 112 or 132; MATH 126; Grade of

114.

COURSE DESCRIPTION:

Foundations of chemical thermodynamics, equilibria, kinetics, quantum mechanics, and

spectroscopy.

II. COURSE OBJECTIVES

After completion of the course, students will be able to:

Exam #2 7. 1 hour **Chemical Kinetics** 8. 7 hours Reaction, Empirical Rate Equations, Analysis of Kinetic Results, Molecular Kinetics, The Arrhenius Law, Reactions in Solutions 9. Composite Reaction Mechanisms 7 hours Types of Composite Reactions, Rate Equation, Rate Constants, Rate Coefficients and Equilibrium Constants, Photochemical Reactions, Catalysis, Enzyme Catalysis and Inhibition 10. Exam # 3 1 hour 11. Ouantum Mechanical Models 6 hours

Phase equilibria, Membranes, Colligative Properties,

Cooperativity and Ligand Binding in Biochemical Processes

P. Atkins and J. de Paula, *Physical Chemistry*, ninth edition, WH Freeman, New York, 2010.

VII. SPECIAL BESOURCE REQUIREMENTS

Students may be expected to have their own programming calculators and to use the

software available in the Chemistry Department Computer Classroom. In addition students should have access to a computer to use web sites that provide supplementary information.

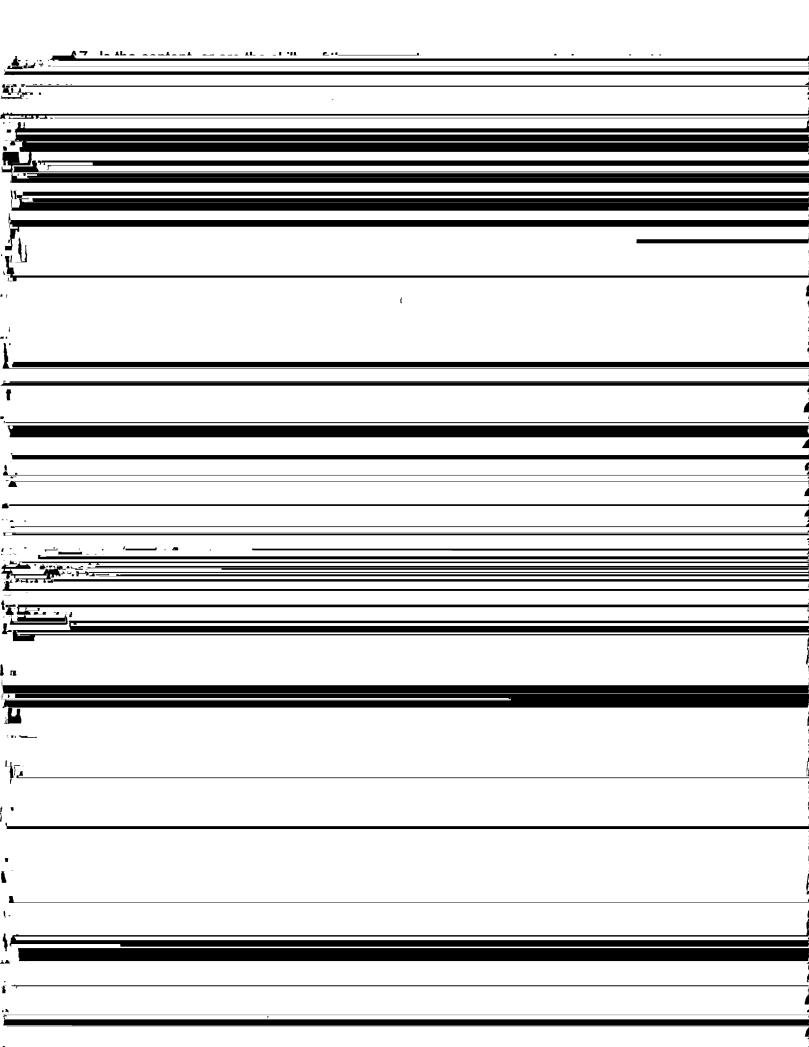
VIII. BIBLIOGRAPHY

- P. Atkins and J. de Paula, *Physical Chemistry*, ninth edition, WH Freeman, New York, 2010.
- P. Atkins and J. de Paula, *Physical Chemistry for Life Sciences*, 1st edition, WH Freeman, New York, 2006.
- G.M. Barrows, *Physical Chemistry*, sixth edition, McGraw-Hill, New York, 1996.
- R. Chang, Physical Chemistry for the Biosciences, University Science Books, 2005
- T. Engel, P. Reid, Physical Chemistry, second ed., Prentice Hall, 2010
- H. Kuhn, H.D. Forsterlin, D.H Waldeck, Principles of Physical Chemistry, second edition, J. Wiley & sons, 2009
- I. Levine, Physical Chemistry, sixth edition, McGraw-Hill, 2009.
- J.H. Noggle, Physical Chemistry, third edition, Harper Collins, New York, 1996.
- I. Rinoco, Jr., I., K. Sauer, J.C. Wang, J.D. Puglisis, Physical Chemistry: Principles and Applications in Biological Sciences, fourth edition, Prentice Hall, 2002
- R. J. Silbey, R. A. Alberty, M. G. Bawendi *Physical Chemistry*, fourth edition, John Wiley and Sons, 2004

Course Analysis Questionnaire

Section A: Details of the Course

	A1	How does this course fit into the programs of the department? For what students is the course designed? (majors, students in other majors, liberal studies). Explain why this content cannot be incorporated into an existing course. The B.S. Chemistry degree is certified by our professional organization, The American Chemical Society (ACS). The ACS has recently rewritten its requirements for a certified degree,
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	,	courses. Currently, B.S. Chemistry majors and B.S. Chemistry/Pre-Med majors are required to take CHEM 341 (Physical Chemistry I, covering the two major topics of thermodynamics and



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	Our professional society does not recommend enrollment limits or parameters on this course.
	Our professional society does not recommend enrollment limits or parameters on this course. If this course is a distance education course, see the Implementation of Distance Education Accepted and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form in Appendix December 2 and the Implementation Review Form Implementation R
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2. Summary of Proposed Revisions The original content of CHEM 341 and CHEM 342 has been seen as the content of CHEM 342 has been seen as the content of CHEM 3				raaraaniggd from proceeding toes		
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OLD SYLLABUS OF RECORD FOR CHEM 341 PHYSICAL CHEMISTRY I

I. **CATALOG DESCRIPTION**

COURSE TITLE:

CHEM 341, Physical Chemistry I

NUMBER OF CREDITS:

4 cr (4c-0l-4sh)

PREQUISITES:

CHEM 112 or CHEM 114; PHYS 112 or 132. MATH 122, 124 or 128

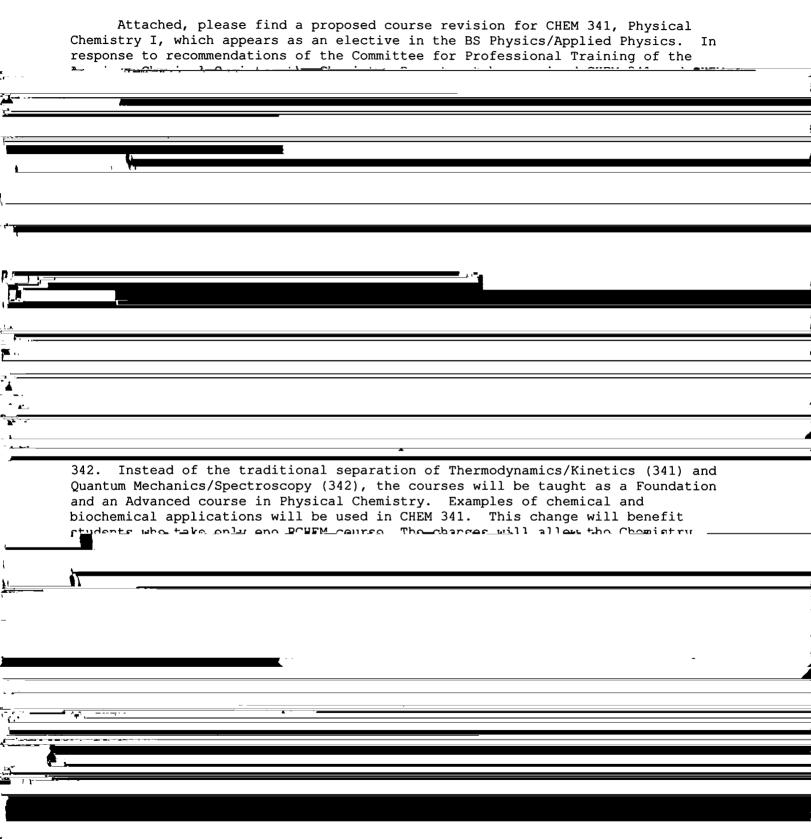
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kinetic theory.



Subject: Course revision to Physical Chemistry I From: Anne E Kondo 02/13/12 09:46 AM This message has attached files. Show

Dear Devki ,



Subject: Re: Changes to Physical Chemistry courses

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		 bharathn@iup.edu>
	has attached files. Sho	
		rse proposal. Sounds good to me. I am sure Dr. Sowa must have seen the
course proposal too. I s	spoke to Dr. Southard.	He agreed to me fully endorsing the revised proposal. Please find attached
the letter of support. T	hanks	
N.Bharathan		
From: Anne E Kondo		
Sent Manday Echais	~ 13 2012_10·27 AM	
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