

# Course Schedule of MST Program ,TIGP

Semester: Spring, 2012(100 學年度下學期)

Course(科目): 高等物化二- Advanced Physical Chemistry (II)

Time(時間): 9:1 0~12:00 am, Tuesday(T2T3T4)

Room(教室): 311 IAMS 中研院原分所 R311(台大校園)

NTHU coordinator(清大教師): 倪其焜

Course speakers(授課老師): Wen-Bih Tzeng 曾文碧、Shang-Bin Liu 劉尚斌、  
Mark Y.Y. Hui 許遠揚、Chau-Chung Han 韓肇中

Required(必修課), credit(學分): 3

Course No.(科號): TIGP727200

Date	lecturer	Date	lecturer
2/21 Tuesday 9:1 0~12:00	Prof. Wen-Bih Tzeng	5/1 Tuesday 9:1 0~12:00	Prof. Mark Y.Y. Hui
3/6 Tuesday 9:1 0~12:00	Prof. Wen-Bih Tzeng	5/8 Tuesday 9:1 0~12:00	Prof. Mark Y.Y. Hui
3/13 Tuesday 9:1 0~12:00	Prof. Wen-Bih Tzeng	5/15 Tuesday 9:1 0~12:00	Prof. Mark Y.Y. Hui
3/20 Tuesday 9:1 0~12:00	Prof. Shang-Bin Liu	5/22 Tuesday 9:1 0~12:00	Prof. Mark Y.Y. Hui
3/27 Tuesday 9:1 0~12:00	Prof. Shang-Bin Liu	5/29 Tuesday 9:1 0~12:00	Prof. Chau-Chung Han
4/3 Tuesday 9:1 0~12:00	Prof. Shang-Bin Liu	6/5 Tuesday 9:1 0~12:00	Prof. Chau-Chung Han
4/10 Tuesday 9:1 0~12:00	Prof. Shang-Bin Liu	6/12 Tuesday 9:1 0~12:00	Prof. Chau-Chung Han
4/17 Tuesday 9:1 0~12:00	Prof. Mark Y.Y. Hui	6/19 Tuesday 9:1 0~12:00	Prof. Chau-Chung Han
4/24 Tuesday 9:1 0~12:00	Prof. Mark Y.Y. Hui		

Speaker	Part 1 (Week 1-week3) Prof. Wen-Bih Tzeng 曾文碧教授
Class Outline	1. The characteristics of electronic transitions 2. The fates of electronically excited states 3. Lasers 4. Electronic spectroscopy 5. Vibronic spectroscopy 6. Photoionization spectrscopy 7. Photoelectron spectroscopy
Introduction	In this section, we will cover some topics related to electronic, vibronic, photoionization, and photoelectron spectroscopies as well as lasers.
Grading	(1) class attendance, (2) quiz
Textbook	Physical chemistry (P.W. Atkins) + class notes

Speaker	Part 2 (Week 4-week7) Prof. Shang-Bin Liu 劉尚斌教授
Class Outline	Introduction to NMR Spectroscopy
Introduction	<ol style="list-style-type: none"> <li>1. Background and History of NMR Spectroscopy</li> <li>2. Fundamental NMR: Theories and Introduction</li> <li>3. High-resolution and Solid-State NMR: Techniques and Applications</li> </ol>
Grading	Two take home exams
Textbook	Lecture notes

Speaker	Part 3 (Week 8-week13) Prof. Mark Y.Y. Hui 許遠揚博士
Class Outline	<ol style="list-style-type: none"> <li>1. Partition function</li> <li>2. derivation of thermodynamic quantities via partition function</li> <li>3. Application of partition function</li> <li>4. ensemble average</li> </ol>
Introduction	In this course we teach some basic concept of statistical mechanics including partition function and ensemble average
Grading	Home work: 70% Quiz: 30%
Textbook	Atkins, Physical chemistry

Speaker	Part 4 (Week 14-week17) Prof. Chau-Chung Han 韓肇中教授
Class Outline	<ol style="list-style-type: none"> <li>1. <b>Molecular interactions</b>—Molecular properties that underlie intermolecular interactions and the effects of these interactions will be introduced.</li> <li>2. <b>Macromolecules and aggregates</b>— Techniques used in the study of molecular size and shape will first be introduced; and will then explore dynamic structures and properties of macromolecules and their aggregates.</li> </ol>

Introduction	The outline of Chapters 18-19 will be followed with related materials added.
Grading	Homework assignment.
Textbook	Atkin's Physical Chemistry, 8 <sup>th</sup> edition(Oxford Univ., 2006)