

**National Chiayi University**  
**Department of**  
**Biochemical Science and Technology**  
(Applied for new students admitted at academic year 2010)

Meeting of curriculum committee of Department approved. 21, Jan, 2010

Meeting of curriculum committee of College approved. 27, Jan, 2010

Meeting of curriculum committee of School approved. 09, Mar, 2010

Meeting of academic affairs office approved.

**A. Characteristics:**

The course design emphasizes basic training in the field of biology and biochemistry specialties. It is classified into three areas: basic biochemistry, basic specialty field, and application technology. Course design uses living organisms as research subjects and chemistry as an experimental tool with focus on the understanding biochemistry mechanisms. Through the use of molecular biology and cell biology, students can easily understand a variety of biology and cell biology questions at the molecular level. As for training in the field of chemistry, it includes lectures and laboratory sessions in basic chemistry, organic chemistry, and analytical chemistry as well as in biochemistry, molecular biology, and cell biology, etc. Such rigorous course work will allow students to lay a solid foundation that will enable them to deal with various biological problems in the future.

**B. Goal :**

- a. Educating biochemical science and technology related knowledge.
- b. Training fundamental biochemical science and technology related professional competence.
- c. Laying the foundation of future development and essential civic literacy.
- d. Enhancing problem solving and teamwork ability.

**C. Indicators of Fundamental Competence :**

- a. Fundamental knowledge of biochemical science and technology.
- b. Application culture of biochemical science and technology.
- c. Ability of problem finding and problem solving.
- d. Ability of interpersonal communication and cooperation.
- e. Application and creative competence of biochemical science and technology.
- f. Researching and developing ability of biochemical science and technology.
- g. Humanism culture and social concerning.
- h. Self developing and enhancing ability.

Total number of credits needed for graduation : 30

Including :

Compulsory required course credits : 4  
Selective required course credits : 20  
Thesis credits : 6

<b>First Year</b>					
<b>Compulsory required</b>					
<b>Course</b>	<b>Semester</b>	<b>Hours</b>	<b>Credits</b>	<b>Note</b>	<b>Indicator</b>
Seminar I	A	2.0	1		4
Seminar II	B	2.0	1		4
<b>Total credits of compulsory required course</b>			<b>2</b>		
<b>Selective required</b>					
<b>Course</b>	<b>Semester</b>	<b>Hours</b>	<b>Credits</b>	<b>Note</b>	<b>Indicator</b>
Molecular Medical Research Method	A	2.0	2		5
Advanced Vascular Biology	A	2.0	2		6
Nucleic Acid Biochemistry	A	2.0	2		6
Neurochemistry	A	2.0	2		2
Advanced Cell Biology	A	2.0	2		1
Tissue Engineering	A	2.0	2		2
Advanced Protein Science	A	2.0	2		3
Plant Growth and Differentiation	A	2.0	2		2
Research Methods in Microbiology	A	2.0	2		3
Advanced Oncology	A	2.0	2		5
Principles and Applications of PCR	B	2.0	2		1
Advanced Molecular Physiology	B	2.0	2		3
Advanced Bioinformatics	B	2.0	2		7
Advanced Immunology	B	2.0	2		5
Advanced Genotoxicity	B	2.0	2		1
Cell Cycle and Cancer	B	2.0	2		2
Application of Cell and Signal Transduction	B	2.0	2		5
<b>Total credits of selective required course</b>			<b>34</b>		
<b>Total credits of academic year</b>			<b>36</b>		

\* Name of courses may be changed with the technology trends.

## Second Year

### Compulsory required

Course	Semester	Hours	Credits	Note	Indicator
Seminar III	A	2.0	1		4
Seminar IV	B	2.0	1		4
<b>Total credits of compulsory required course</b>			<b>2</b>		

### Selective required

Course	Semester	Hours	Credits	Note	Indicator
Scientific English Writing	B	2.0	2		7
<b>Total credits of selective required course</b>			<b>2</b>		

### Thesis

Course	Semester	Hours	Credits	Note	Indicator
Thesis	A	3.0	3		8
Thesis	B	3.0	3		8
<b>Total credits of thesis</b>			<b>6</b>		
<b>Total credits of academic year</b>			<b>10</b>		

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