

# Graduation requirement for undergraduate students in the Department of Materials Science and Engineering, National Chung Hsing University

Items

1. Total Enrollment years:  
 (1) Minimum enrollment years: four years  
 (2) can be extended for two more years (not include 2 years' intermission)

2. Total credits: 140, including:

(1) Language courses (required)  
 1. Mandarin language area: 6 credits  
 2. Foreign language area: 6 credits

(2) General knowledge courses (required)  
 1. Sports area:  
 (1) Basic sports: freshman, 2 semesters, 0 credits  
 (2) Elective sports: 1 credit and total 4 credits (excluded from graduation credits)

2. Defensive and education area:  
 (1) National security and defense technology: 0 credits  
 (2) Theory and war history: 0 credits

3. History and sociology area:  
 (1) History curriculum: 4 credits  
 (2) Sociology curriculum: 4 credits

4. Humanity and art area  
 5. Natural sciences area  
 6. Applied sciences area  
 7. Other areas

**A total of 8 credits must be completed from item 4 to item 7. However, 'Practical Chemistry', 'Secret of Physical World', and 'Engineering and Life' are not included.**

(3) Core courses  
 1. Required courses and credits

Course title	One or half year	credits
(1)Calculus	One	6
(2)General Physics	One	6
(3) General Physics Lab	One	2
(4)General Chemistry(I)	Half	3
(5)General Chemistry(II)	Half	3
(6) General Chemistry Lab	Half	1
(7)Introduction to Materials Sciences	One	6
(8)Life Sciences	Half	3
(9)Thermodynamics in Materials Science	One	6
(10)Fundamental Materials Experiments	One	2
(11)Physical Metallurgy	One	6
(12)Mechanical Properties of Materials	Half	3
(13)Engineering Mathematics(I)	Half	3
(14) Engineering Mathematics(II)	Half	3

Items	Course title	One or half year	Credits
	(15)X-ray diffractometry	Half	3
	(16)Physical properties of materials	Half	3
	(17)Advanced materials experiments	One	2
	(18)Electron microscopy	Half	3
	(19) Special Topics ( I )	Half	1
	(20) Special Topics ( II )	Half	1
	Total	-	66

2. Elective courses within MSE department: no less than 31 credits  
 3. Outside MSE department: at most 15 credits  
 4. Other regulations:  
 (1) Starting from Fall 2005, credits taken outside MSE department do not include general knowledge courses.  
 (2) Required courses: The following courses must be taken at College of Sciences or College of Engineering: Calculus, General Physics, General Physics Lab, General Chemistry (I), General Chemistry (II), General Chemistry Lab.

3. Supplementary major: the student should complete at least 20 credits in supplementary department, in addition to fulfill the requirement in MSE department. Detailed courses and credits can be found in the following website (Office of Academic Affairs): <http://www.nchu.edu.tw/~class/assist.htm>.

4. Double major: the student should complete required courses (at least 40 credits) in supplementary department, in addition to fulfill the requirement in MSE department.

5. Special courses: Once the student fulfills the requirement in Special Courses, the certificate will be issued by NCHU. Detailed courses and credits can be found in the following website (Office of Academic Affairs): <http://www.nchu.edu.tw/~class/91course.htm>