Form 2B

City University of Hong Kong

Information on a Course

offered by Department of Mechanical and Biomedical Engineering

with effect from Semester A in 2013/2014

Part I

Course Title: Nuclear Structural Materials

Course Code: MBE5107

Course Duration: One Semester

No. of Credit Units: 3

Level: P5

Medium of Instruction: English

Prerequisites: Nil

Precursors: MBE2105 Mechanics and Materials
or equivalent

Equivalent Courses: Nil

Exclusive Courses: Nil

Note:
Students may repeat a course, or an equivalent course, to improve course grade only if the previous course grade obtained is C or below.

Part II

1. Course Aims

This course aims to let students to understand the fundamentals of structural materials used in each of the major components of a typical nuclear reactor system. The basic requirements of the materials used, the problems of each of the structural materials used in different components, the root causes for the problems and the methods to reduce or prevent those problems to occur in a nuclear reactor system.

2. Course Intended Learning Outcomes (CILOs)

Upon successful completion of this course, students should be able to:

No.	CILOs	Weighting* (if applicable)
1.	**Explain** types of Nuclear Reactor Systems	4
2.	**Identify** major Components and the Structural Materials	1
3.	**Describe** Corrosion and Water Radiolysis	2
4.	**Identify** Intergranular Attack and Stress Corrosion Cracking	3
5.	**Identify** Radiation Effects in Materials	3
6.	**Discuss** Materials Requirements, Problems and Remedies	2

***Weighting ranging from 1,2,3 to indicate the relative level of importance in an ascending order.**

3. Teaching and Learning Activities (TLAs)

(Indicative of likely activities and tasks designed to facilitate students' achievement of the CILOs. Final details will be provided to students in their first week of attendance in this course)

Activity Type	Timetabled Activity (Hours per week)
Lecture/Tutorial/Laboratory Mix	Lecture (3)

TLAs	Large Class Activities	Self-study Activities	Hours/week (if applicable)
CILO 1	3	2	3(+2)
CILO 2	9	5	9(+5)
CILO 3	6	3	6(+3)
CILO 4	6	3	6(+3)
CILO 5	6	2	6(+2)
CILO 6	9	5	9(+5)
Total (hrs)	**39**	**20**	**39(+20)**

4. Assessment Tasks/Activities

(Indicative of likely activities and tasks designed to assess how well the students achieve the CILOs. Final details will be provided to students in their first week of attendance in this course)

ATs	Examination (2 hrs)	Homework	Total (%)
CILO 1	10	1	11
CILO 2	17	2	19
CILO 3	15	2	17
CILO 4	15	2	17
CILO 5	15	2	17
CILO 6	18	1	19
Total (%)	**90**	**10**	**100**

For a student to pass the course, at least 30% of the maximum mark for the examination should be obtained.

5. Grading of Student Achievement:

Grade Table

Letter Grade	Grade Point	Grade Definitions
A+	4.3	Excellent
A	4.0	
A-	3.7	
B+	3.3	Good
B	3.0	
B-	2.7	
C+	2.3	Adequate
C	2.0	
C-	1.7	
D	1.0	Marginal
F	0.0	Failure
P	-	Pass

Please refer the SGS's website: http://www.sgs.cityu.edu.hk/student/tpg/assessment/coursegrades#01 for more details.

Part III

Keyword Syllabus:

Nuclear Reactors, Structural Materials, Corrosion and Stress Corrosion Cracking, Radiation Effects