

Tamkang University Academic Year 111, 2nd Semester Course Syllabus

Course Title	NUMERICAL ANALYSIS	Instructor	CHU, LIOU
Course Class	TEIDB2A DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION ENGINEERING (ENGLISH-TAUGHT PROGRAM), 2A	Details	<ul style="list-style-type: none"> ◆ General Course ◆ Selective ◆ One Semester
Relevance to SDGs	SDG4 Quality education SDG9 Industry, Innovation, and Infrastructure		
Departmental Aim of Education			
I. Comprehend professional knowledge. II. Acquire mastery of Practical Skills. III. Establish creative achievement.			
Subject Departmental core competences			
A. Programming and application ability.(ratio:15.00) B. Mathematical reasoning ability.(ratio:40.00) C. Implementing computer systems ability.(ratio:15.00) D. Computer networking application skills.(ratio:15.00) E. Professional skills for information technology (IT) industry.(ratio:15.00)			
Subject Schoolwide essential virtues			
1. A global perspective. (ratio:5.00) 2. Information literacy. (ratio:30.00) 3. A vision for the future. (ratio:10.00) 4. Moral integrity. (ratio:10.00) 5. Independent thinking. (ratio:30.00) 6. A cheerful attitude and healthy lifestyle. (ratio:5.00) 7. A spirit of teamwork and dedication. (ratio:5.00) 8. A sense of aesthetic appreciation. (ratio:5.00)			

Course Introduction	This course introduces the method of numerical analysis by using related computer software.
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The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.

II. Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.

III. Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

No.	Teaching Objectives	objective methods
1	Understanding of numerical analysis, and related computer software.	Cognitive

The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCDE	12345678	Lecture, Discussion, A laptop computer is required.	Testing, Study Assignments, Discussion(including classroom and online)

Course Schedule

Week	Date	Course Contents	Note
1	112/02/13 ~ 112/02/19	Introduction	
2	112/02/20 ~ 112/02/26	Number system and errors	
3	112/02/27 ~ 112/03/05	Number system and errors	
4	112/03/06 ~ 112/03/12	Number system and errors	
5	112/03/13 ~ 112/03/19	Roots of equations	

6	112/03/20 ~ 112/03/26	Roots of equations	
7	112/03/27 ~ 112/04/02	System of linear equations	
8	112/04/03 ~ 112/04/09	System of linear equations	
9	112/04/10 ~ 112/04/16	System of linear equations	
10	112/04/17 ~ 112/04/23	Midterm Exam Week	
11	112/04/24 ~ 112/04/30	Interpolation	
12	112/05/01 ~ 112/05/07	Interpolation	
13	112/05/08 ~ 112/05/14	Numerical optimization	
14	112/05/15 ~ 112/05/21	Numerical optimization	
15	112/05/22 ~ 112/05/28	Numerical optimization	
16	112/05/29 ~ 112/06/04	Numerical optimization	
17	112/06/05 ~ 112/06/11	Numerical optimization	
18	112/06/12 ~ 112/06/18	Final Exam Week	
Requirement	A laptop computer for in class exercise is required.		
Teaching Facility	Computer, Projector		
Textbooks and Teaching Materials	An Introduction to Numerical Methods A MATLAB Approach, Abdelwahab Kharab, Ronald B. Guenther, CRC Press. (ISBN: 9781439868997)		
References			
Number of Assignment(s)	4 (Filled in by assignment instructor only)		
Grading Policy	◆ Attendance : 10.0 % ◆ Mark of Usual : 40.0 % ◆ Midterm Exam : 20.0 % ◆ Final Exam : 20.0 % ◆ Other 〈Performance〉 : 10.0 %		
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at http://info.ais.tku.edu.tw/csp or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at http://www.acad.tku.edu.tw/CS/main.php . ※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.		