

ESG111 C ++ Programming for Engineers (Required)

Course Catalog description:

Introduces computer programming techniques for engineering students who are not planning to take advanced computer science courses. Students learn C programming language as applied to various scientific and engineering problems. Includes advanced simulation packages such as Labview to introduce computer control of experimental systems. Not intended for students who have completed a C programming course. [3 credits]

Pre- or Corequisite(s): AMS 151C Applied Calculus I or MAT 125C Calculus A or MAT131C Calculus I or MAT141C Honors Calculus I; PHY125E Classical Physics A or PHY131E Classical Physics I and PHY133 Classical Physics Laboratory I or PHY141E Classical Physics I: Honors

Text(s): J. Johnsonbaugh, M. Kalin, C for Scientist and Engineers, 1st Edition, Person Education, 1996, ISBN#: 0023611367

Course learning outcomes:

- a) Problem solving using computers
- b) Design of computational algorithms
- c) Ability to translate mathematical and scientific knowledge into a computer algorithm

Topics Covered:

Week 1. Algorithms
Week 2. Introduction to C
Week 3. Variables, Operators, and Control Flow
Week 4. Functions and Program Structure
Week 5. Arrays
Week 6. Pointers
Week 7. Storage Classes and Type Qualifiers
Week 8. Input and Output
Week 9. Structures, Unions, Enumerated Types
Week 10. Advanced Topics

Class/ Laboratory Schedule:

ESG Spring	111	C Progmng for Engrns	LEC	1	TUTH	8:20 AM	9:40 AM
------------	-----	----------------------	-----	---	------	---------	---------

ESG Fall	111	C Progmng for Engrns	LEC	1	MF	2:20 PM	3:40 PM
----------	-----	----------------------	-----	---	----	---------	---------

Contribution of Course to meet Criterion 5:

- a) ability to apply knowledge of mathematics, science and engineering
- e) an ability to identify, formulate, and solve engineering problems

Relationship of course to program outcomes:

a) 20% e) 60%

Person(s) who prepared this description and date of preparation:

Dilip Gersappe, June24, 2009