



MEMORANDUM

24 March 2009

From: P. Ananthakrishnan, Chair, Graduate Committee, Dept. of Ocean Engineering, FAU
To: Graduate Programs Committee, College of Engineering and Computer Science, FAU
Subject: Proposal for starting a new online MS (non-thesis) degree program in Ocean Engineering
cc: Members of OE faculty.

Attached, please find a proposal from the Department of Ocean Engineering to start an online MS (non-thesis) program, to be offered through DEDECS, in Ocean Engineering. Administering the proposed program would require only a minimal effort since nearly half the graduate courses in the Department are already offered via DEDECS. Some of the courses offered by other departments (ME and Civil) through DEDECS are also included in the proposed program. The proposed program is expected to increase the student enrollment in the graduate program, and therefore FTE and productivity, substantially.

Encls.

Department of Ocean Engineering, Florida Atlantic University

Online MS (non thesis) Degree in Ocean Engineering offered through DEDECS (formerly FEEDS)

Proposal: An online MS (non-thesis) degree in Ocean Engineering, offered through DEDECS (formerly FEEDS), is proposed.

Introduction and Rationale: In the US, at present, there are fewer than 10 programs that offer graduate degrees in Ocean Engineering. Recent trends and future needs point to increased demand for Ocean Engineers, in particular by the US Navy, offshore industry and clean energy sectors. It is difficult for the present on-campus OE graduate programs (recruitment into which has to consider financial assistantships and tuition waivers also) to meet the demand.

For those living in regions that do not have University programs in Ocean Engineering, it may not be always possible, for economic or family reasons, to relocate in order to pursue a graduate degree in Ocean Engineering. Same would be the case for working professionals to pursue graduate degree if it requires taking classes on campus. The proposed online program is aimed to cater to above groups of engineers. Florida Atlantic University pioneered the discipline of Ocean Engineering and the world-wide recognition of the program would attract students from other states and overseas also. For the College and the Department, the program could increase FTE and productivity substantially. Specifically, it is expected that about 10 students would enroll into the program in the first year; the Department's goal is to reach an enrollment number of about 30 for the online MS program by the year 2012.

At present, Florida Atlantic University offers MS and PhD, besides BS, degree programs in Ocean Engineering. Nearly half of the courses required for the graduate degrees are already offered online or delivered to industry sites and centers through DEDECS (<http://www.dedecs.fau.edu/>), which formerly was referred to as FEEDS. With additional effort and resources, which returns would certainly justify, it is possible to offer an entire MS (non-thesis) degree in Ocean Engineering through DEDECS. The program will include a few courses offered on DEDECS by other departments also. It should be noted, in this context, that the present MS (non thesis) program requires a minimum of only 15 credits courses offered by Ocean Engineering and allows remaining 18 credits of coursework to be selected in consultation with the advisor. The students enrolling for the on-line program will be advised by the members of the Department's graduate committee and the graduate program coordinator.

Admission and Graduation Requirements: These requirements will be the same as that for part-time students in the regular MS (non-thesis) degree in Ocean Engineering (as stated in the University Catalog).

Curriculum: The courses proposed for the MS (non-thesis) degree in Ocean Engineering are given in the Table 1 (on the next page).

Table 1: Courses for MS (non-thesis) degree in Ocean Engineering offered through DEDECS

(The suffix ✓ means that the course has already been offered under DEDECS)		
Category	Courses (all are 3 credit hour courses)	Mode of Delivery
Primary Core	OCP6050 Physical Aspects of Oceanography ✓ EOC5136 OE Data Analysis ✓ EOC5172 Math Methods in OE – 1 ✓	All these three course are already offered through DEDECS
Secondary “Core” (depending on student’s interest for specialization)	<u>Any two of the following:</u> EOC6185 Adv Hydrodynamics I EOC6317 Eng Principles of Acoustics ✓ EGM6533 Adv Mechanics of Materials (ME) ✓ (or) CES6107 Adv Strength of Matls (CivE) ✓ EOC6216 Corrosion I EOC6174 Math Methods in OE – II	EOC6185, EOC6216 and EOC6174 will be offered via DEDECS.
Electives	<u>Any six courses</u> EOC6155 Finite Element Method ✓ (or) EGM5351 Finite Element Method ✓ (or) CES6119 Finite Element Method ✓ EOC6515 Hydro Aspect Ship Design ✓ EOC6630 Signal Processing ✓ EOC6189 Computational Fluid Dynamics ✓ EOC6310 Sonar Design ✓ EOC6xxx Hydro-acoustics and Noise Control* EOC6808 Marine Power Plant Design EOC6662 Intelligent Underwater Vehicle-1 EOC6218 Corrosion 2 EOC6431 Offshore Structures EML6271 Adv Dynamics (ME) ✓ EML6726 CFD (ME) ✓ EGM6562 Composite Matls (ME) ✓ EML6233 Failure Prevention (ME) ✓ CES6585 Str Dynamics (CivE) ✓ * New course under development.	Courses not followed by ✓ will have to be offered via DEDECS. But as is, 13 courses in this category are already offered through DEDECS – a student needs only six courses in this category.

Prepared and Respectfully Submitted by,
P. Ananthkrishnan (Chair, OE Graduate Committee)
March 23, 2009