ROWAN UNIVERSITY CURRICULUM PROPOSAL

PROPOSAL TITLE:
Combustion

K APPROPRIATE: ___ UNDERGRADUATE __x_ GRADUATE ____ SEMESTER HOURS

SPONSOR(S):
Dr. Anthony J. Marchese and the Department of Mechanical Engineering

DEPARTMENT/TELEPHONE # Mechanical Engineering, x4627

CHECK ONE: _x_COURSE __MINOR PROGRAM __CONCENTRATION __SPECIALIZATION
__ACHIEVEMENT CERTIFICATE __CERTIFICATION PROGRAM __MAJOR PROGRAM

Step #1 (Department)	**Step #2 (Receipt)**	Step #3 (School)
✓ Approved (Date)	SCC# 97-98-396	Reviewed Date: 2/25/98
___ Not Approved (Date)		X Recommend to Approved
		___ Recommend NOT to Approve
Dept. Curriculum Chr.	2-27-98 Date Received Senate	Forward for Open Hearing:
2/25/98 Reviewed (Date)		___WITHOUT Reservations
		___WITH Reservations: Comments:
Dept. Chr.	Senate Curriculum Chr.	Robert P. Hesketh School Committee Chr.

Step #4 (Academic Dean): ✓Recommended ____ NOT Recommended ____ Conditionally Recommended (See Comments)

Comments:

Dean Signature/Date 2/27/98

Step #5 (Senate Curriculum Committee): Open Hearing Date: ________ Approved by Curriculum Committee Date 4/28/98

Returned to Sponsor(s) for the following reason:

 # 6 (Senate) Date announced/voted on at Senate 4/28 If voted on: ____Approved ____NOT Approved

Date forwarded to Executive Vice President/Provost 5/11

Senate Curriculum Committee chair Signature/Date: 5/8/98

S 7 (Executive Vice President/Provost): Date Received ________

___ Approved

___ NOT Approved If no, reasons are as follows:

Student Credit Hours ________

Faculty Load Hours ________

Equalized Credit Hours ________

Official Copy & Approval Sheet Filed (Date) 5/26/98

Executive Vice President/Provost Signature ________________________

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Date Approved Course Description Received ________

Hegis Taxonomy and Course Number Assigned ________

Date/Signature of Registrar ________________________

Notification Forward:

________ Senate Curriculum Committee Chairperson

________ Department Chairpersons

________ Academic Dean(s)

________ Registrar

________ Sponsor(s)

Course Proposal

1. Details:

a) Course Title:	Combustion (0910-511)
b) Sponsor:	Dr. Anthony J. Marchese, Department of Mechanical Engineering, College of Engineering
c) Credit Hours:	3 credit hours
d) Course Level:	Graduate
e) Curricular Effect:	A graduate elective for the Masters of Science in Engineering majors. This course is applicable for students wishing to specialize in Mechanical Engineering, Chemical Engineering or Environmental Engineering.
f) Prerequisites:	Engineering Thermodynamics II or equivalent.
g) Suggested Time/ Scale of Implementation	Fall 1999 One section
h) Resources:	Faculty is in place to teach the course within the Dept. of Mechanical Engineering. A 1130 square foot thermo and engine laboratory will be available to support this course. A bomb calorimeter and flash point tester have already been purchased in support of this course. Library resources are in place. Computer hardware resources are available in the Engineering Building to support this course. A license for Chemkin III, the industry standard combustion modeling computer software has been purchased to support this course.

2. Rationale:

The proposed course is part of the Engineering Curriculum Proposal approved by the College Senate in December 1994. The proposed course is consistent with the establishment of the School of Engineering approved by the Board of Trustees in February 1995.

The topics covered in this course are extremely relevant for practicing mechanical, chemical and environmental engineers. While computers and electronics have revolutionized the way we live and access information, we still generate our electricity, heat our homes and power our vehicles using the same power source utilized by the cavemen: *fire!* In fact, despite efforts to develop and utilize renewable energy sources, 85% of all energy consumed in the United States is derived from the combustion of fossil fuels. Moreover, the combustion of *liquid* petroleum-based fossil fuels accounts for 39% of all energy consumption, and an astounding 97% of energy consumption in the transportation sector. Fossil fuels not only have a finite supply, but the combustion of these fuels is the major source of air pollutants such as soot, NO_x, and SO_x. In short, combustion impacts a wide variety of areas relevant to practicing engineers. Unfortunately, very few practicing engineers have had the opportunity to learn about combustion.