Valdosta State University
STRATEGIC FOCUS 2010 PROPOSAL FORM

Submitted By: Advancing VSU Subcommittee **Date:** June 8, 2009

Department/College/Division: Department of Academic Success

Strategic Focus Standard (Select 1 or more)	**Corresponding Assessment***
☐ **Recruitment/Enrollment of Students**	**# of New Students:** _____
☐ **Retention & Graduation/Enrollment of Students**	**# of Additional Students Retained:** _____
☐ **Scholarship/Research**	**# of Scholarly Activities:** _____
☐ **Financial Solvency Resources**	**$ Revenue/Savings:** _____
☑ **Develop New Academic Initiatives/Programs**	**# of New Students:** 10 (per year)

*This is the number or dollar value that is associated with the proposed project. Existing students and efforts should not be included in these figures; only additional students/scholarly activities/dollars (i.e. no double counting).

Brief Proposal Description:

Recently, many students in VSU Engineering Studies program (RETP) have expressed interest in chemical engineering. Also, a related field in chemical engineering called sustainable energy (in particular biomass and bio-fuel in Southern Georgia) has become significantly important. We propose to expand our engineering studies program to offerer courses in chemical engineering and energy by hiring an engineering faculty with specialty in chemical engineering and energy. In the long run we propose to develop a B.S. program in Bio-fuel and energy engineering technology to meet the need of Southern GA industries.

Budget (Specify dollar amounts and elaborate as needed on summary page):

Item	**Description**
☐ Staff # _____ Salary and Fringe $ 97,000	Every year the Engineering Studies program at Valdosta State University enrolls more that 150 students in the the program. Most students that transfer from VSU to Georgia Tech choose majors in mechanical, civil, aerospace, and electrical. Because there is only two faculty members with engineering degree at VSU engineering studies programs, it is not been possible to offer course in popular fields of chemical engineering and energy at VSU and many students transfer to other universities with RETP or engineering technology program in Georgia.
☐ Travel $ 3,000	
☐ Operating $ _____	
☐ Equipment $ _____	
☐ Other $ _____	
☐ Space (office, lab, classroom, etc.) _____	
Total $ 100,000	

Duration:

☐ One –Year ☐ Multi –Year (# of Years:_____) ☑ Indefinite

Supplemental Funding Sources (e.g, department operating budget)

The department of operating budget will absorb the travel cost. Based on a agreement with the chemistry department, iln addition to teaching engineering related course, the new faculty can be assigned to teach a thermodynamics course for students in chemistry and can supervise senior projects in chemistry.

Schedule: Expected Time to Completion

Start Date: Spring 2010

End Date: Indefinite

Assignment of Responsibility (name and title):

Primary: Department Head

Secondary: Coordinator of the VSU Engineering Studies Program

Additional Information:

Considering that there are some large manufacturing industries related to chemical engineering in Valdosta (e.g., PCA and Langdale industries) and the fact that other industries are considering moving to Valdosta, additional expansion of the engineering studies will be beneficial to students and the community. Although the proposed faculty will be a member of the engineering studies program, he/she can also support other departments such as chemistry of biology (in a biotechnology related courses). In the long run we propose to develop a program called "Bio-Energy Engineering Technology" to train students in Bio-mass energy industry in Southern Georgia. The students will take most of their courses in engineering, math, computer and physics. Additional courses in chemistry and biology will be included in the program. The students in "Bio-Energy Engineering Technology" program will spend at least one semester doing co-op or internship and the energy local industry. We will work with an agreement with local forest product and other industries forr possible employment of students.

APPROVALS (Signatures) **Ranking of Proposal**

This portion to be completed by approvers following the evaluation of the constituent group.

Approver	Signature	Rank	# of Proposals Forwarded
DEPARTMENT HEAD/DIRECTOR:			
DEAN:			
DEANS' COUNCIL:			
VICE PRESIDENT:			
P&B COUNCIL:			

ENGINEERING
Dr. Barry Hojjatie, Coordinator
Room 1169, Nevins Hall

ENGINEERING TRANSFER PROGRAMS

Engineering is the application of mathematical and scientific principles, technological tools, and practical experience to the solution of real-world problems. Engineering at Valdosta State University is part of the Department of Physics, Astronomy, and Geosciences. It is considered a pre-engineering discipline, since no degree in engineering is offered. However, courses from engineering, the sciences, mathematics, computer science, humanities, and the social sciences provide a strong and intensive curriculum that effectively covers two to three years of work for a wide variety of engineering fields. The remaining course work required for a Bachelor's degree is completed by transfer to a four-year engineering institution. Formal agreements exist for transfer to the Georgia Institute of Technology and to Mercer University, but informal transfer arrangements can also be made with other qualified institutions. The Engineering Dual Degree Program with Georgia Institute of Technology enables students to earn a B.S. degree from Valdosta State University and a B. S. in engineering degree from Georgia Institute of Technology.

The Pre-Engineering program is designed to prepare students to transfer as third-year students into an engineering curriculum at a degree-granting institution. A major part of this program is the Regents' Engineering Transfer Program (RETP) administered by the Georgia Institute of Technology. The program covers course work through the first two years in four major tracks: Civil Engineering, Electrical and Computer Engineering, Industrial Engineering, and Mechanical and Aerospace Engineering. Other alternatives for transfer in engineering include the Mercer University Transfer Program in Biomedical Engineering, Computer Engineering, Electrical Engineering, Environmental Engineering, Industrial Engineering, and Mechanical Engineering, and the Regular Transfer option to University of Georgia in Agricultural Engineering and Biological Engineering. The Regular Transfer program option also includes transfer to Southern Polytechnic State University to complete a Bachelor of Science degree in an engineering technology major.

Students who desire to enter one of these programs should consult the pre-engineering coordinator as early as possible to understand the requirements of the program and to develop an acceptable program of study. This contact is particularly important for planning the specialized Dual Degree curriculum.

Students in the pre-engineering program may be able to gain related work experience through the VSU Co-op Program. Such experience may prove valuable in terms of career exploration, acquisition of new skills, and career development. In most cases, the Co-op work contract can be continued without interruption after a student transfers to a four-year engineering school. Students seeking more information should contact the Coordinator of Pre-Engineering or the Office of Cooperative Education.

Selected Educational Outcomes

1. Students will demonstrate understanding of fundamental sciences through application to problem solving and experimental laboratory analysis.
2. Students will demonstrate understanding of mathematics through application to mathematical analysis and problem solving.
3. Students will be able to apply scientific and mathematical principles to solve engineering problems.
4. Students will demonstrate the effective use of computers through application packages, programming, scientific calculations, and graphical applications.

Recommended Courses for the REGENTS' ENGINEERING TRANSFER PROGRAM

Engineering students are required to meet the Core Curriculum of Georgia Institute of Technology by taking Calculus I (MATH 2261) in Area A, Calculus II (MATH 2262) and an approved lab science sequence in Area D, and Computer Science (CS 1010) in Area B.

Core Curriculum Area A. ..... **9 hours**
- ENGL 1101 or ENGL 1101H ..... 3 hours
- ENGL 1102 or ENGL 1102H ..... 3 hours
- MATH 2261 (1 hour counts in Area B) ..... 3 hours

Core Curriculum Area B. ..... **4 hours**
- CS 1010 ..... 3 hours
- MATH 2261 (3 hours count in Area A) ..... 1 hour

Core Curriculum Area C. ..... **6 hours**
- See requirements for Area C in the VSU Core Curriculum. See Index.

Core Curriculum Area D. ..... **11 hours**
- BIOL 2010, CHEM 1211/1211L, CHEM 1212/1212L, GEOL 1121, PHYS 2211, PHYS 2212 ..... 8 hours
- MATH 2262 (1 hour counts in Area F) ..... 3 hours

Core Curriculum Area E. ..... **12 hours**
- See course requirements for Area E in the VSU Core Curriculum. See Index.

Core Curriculum Area F. ..... **18 hours**
- PHYS 2211-2212, if not taken in Area D ..... 0-8 hours
- Lab Science Sequence, if not taken in Area D ..... 0-8 hours
- ENGR 2010 ..... 2 hours
- MATH 2262 (3 hours count in Area D) ..... 1 hour
- MATH 2263 ..... 4 hours
- MATH 3340 ..... 3 hours

The pre-engineering curriculum for each track is shown on the next pages:

Valdosta State University Pre-Engineering Curriculum For Transfer
To Georgia Institute of Technology
in Aerospace Engineering or Mechanical Engineering

FALL SEMESTER	HRS	SPRING SEMESTER	HRS
1st YEAR			
MATH 1113	(3)	MATH 2261	(4)
CHEM 1211 and 1211L	(4)	CS 1010	(3)
ENGR 2010	(2)	ENGR 2500	(3)
ENGL 1101	(3)	ENGL 1102	(3)
POLS 1101	(3)	HIST 2111 or HIST 2112	(3)
Total Hours	**15**	**Total Hours**	**16**
		+ RGTR 0196	
		+ RGTE 0197	
2nd YEAR			
MATH 2262	(4)	MATH 2263	(4)
PHYS 2211	(4)	PHYS 2212	(4)
CS 1301	(4)	ENGR 2200	(3)
ENGL 2110, ENGL 2120, or ENGL 2130	(3)	AREA C (COMM 1100 *)	(3)
Total Hours	**15**	**Total Hours**	**14**
3rd YEAR			
MATH 3340	(3)	MATH 2150	(3)
ENGR 3210	(3)	ENGR 3220	(3)
AREA D #	(4)	ECON 2105 or ECON 2106	(3)
AREA E	(3)	(ENGL 3020 *)	(3)
KSPE 2000	(2)		
Total hours	**15**	**Total Hours**	**12**

COMM 1100 *, ENGL 3020 *): recommended but not required.

ECON 2105 (Macroeconomics) or ECON 2106 (Microeconomics) is acceptable for the economics requirement.

Other supporting courses: CS 1302 (4 hours), MATH 3600 (3 hours).

Area D can be satisfied by BIOL 2010, CHEM 1212/1212L, or GEOL 1121.

Recommended Courses for the MERCER UNIVERSITY TRANSFER PROGRAM

For All Majors (Biomedical, Computer, Electrical, Environmental, Industrial, and Mechanical Engineering) :

Core Curriculum Areas A - F: same as Regents' Engineering Transfer Program

Engineering Courses ..... 21 hours

ENGR 2010, 2200, 2500, 3210, 3220, 2310, 3320

Supporting Courses ..... 9 hours

COMM 1100, ENGL 3020, MATH 2150

Recommended Courses for REGULAR TRANSFER TO UNIVERSITY OF GEORGIA

All Majors (Agricultural Engineering, Biological Engineering):

Students should follow the recommended courses for Regents' Engineering Transfer Program, Mechanical Engineering.

Examples of Outcome Assessments

The curricula used at VSU to prepare engineering students to transfer are controlled primarily by the courses required at the degree-granting institutions. To be accepted as transfer credit, VSU courses must duplicate the corresponding courses at the transfer institution. Assessment of the VSU engineering program must therefore monitor the individual course contents, which can change from time-to-time, as well as the success of the students who transfer. To monitor the progress of students who transfer, records of the final grades, degree conferred, and any honors received are maintained and examined annually to determine the effectiveness of the Pre-Engineering program. Transfer students are also asked to provide an evaluation of their VSU engineering preparation during their final year before graduation.

DUAL DEGREE PROGRAM

The Dual Degree program offers a student the opportunity to earn a Bachelor of Science degree from Valdosta State University and, in addition, a Bachelor of Science degree in engineering from Georgia Institute of Technology within a total time period of approximately five years. Three-fourths of the Valdosta State University degree requirements are completed before transfer to Georgia Institute of Technology (nominally three years), while the remaining Valdosta State University degree requirements and the remaining engineering degree requirements are completed at Georgia Institute of Technology (nominally two years). The bachelor's degree from Valdosta State University may be awarded when the student has satisfied the degree requirements.

The major selected at Valdosta State University should be one that can easily incorporate the mathematics and science courses required in the first two years of the engineering field the student plans to enter, i.e., either applied mathematics, computer science, physics, or chemistry. Other majors make the five-year time period unfeasible. The second degree at Georgia Institute of Technology may be selected from any of the fields of engineering.

Selected Educational Outcomes

1. Students will demonstrate understanding of fundamental sciences through application to problem solving and experimental laboratory analysis.
2. Students will demonstrate understanding of mathematics through application to mathematical analysis and problem solving.
2. Students will be able to apply scientific and mathematical principles to solve engineering problems.
4. Students will demonstrate the effective use of computers through application packages, programming, scientific calculations, and graphical applications.

Recommended Courses For The Dual-Degree Program

Major: See course requirements for VSU major. Students must complete at least 90 hours at VSU before transferring. See the Dual-Degree Coordinator for additional requirements that must be satisfied before transferring.

Supporting Courses/Electives: Students take the following courses as they fit into the major requirements at VSU and the engineering requirements at Georgia Tech: ENGR 2010, 2200, 2310, 2500, 3210, 3220, 3320, MATH 2150, 3340.

The remaining 30 (or fewer) hours required for the VSU degree must be taken at Georgia Institute of Technology, to be accepted as transfer credit by Valdosta State University.

Examples of Outcome Assessments

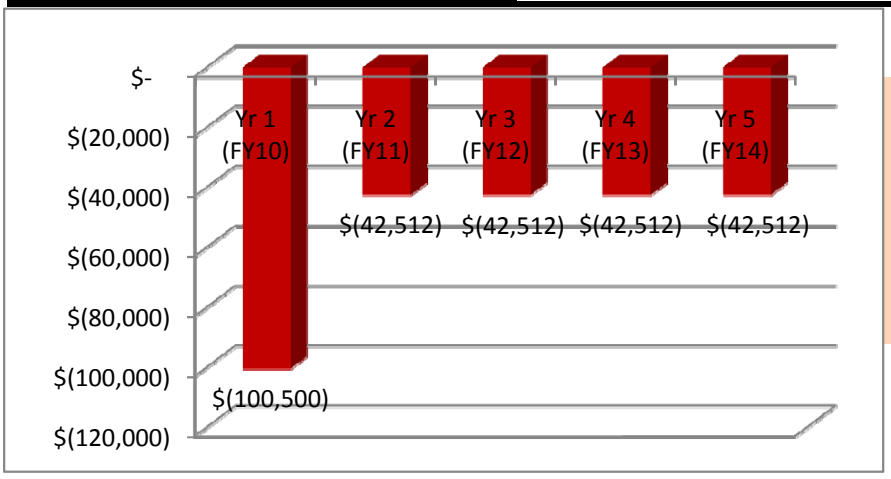
The curricula used at VSU to prepare engineering students to transfer are controlled primarily by the courses required at the degree-granting institutions. To be accepted as transfer credit, VSU courses must duplicate the corresponding courses at the transfer institution. Assessment of the VSU engineering program must therefore monitor the individual course contents, which can change from time-to-time, as well as the success of the students who transfer. To monitor the progress of students who transfer, records of the final grades, degree conferred, and any honors received are maintained and examined annually to determine the effectiveness of the Dual-Degree Program in Engineering. Transfer students will also have an opportunity to evaluate their Dual-Degree experience during their final year at Georgia Tech. This evaluation will provide almost immediate feedback and will be a valuable assessment tool.

Analysis to Expand Enrollment - Program Name: Chemical Engineering courses

Additional Full Time Faculty Member

Program Expenses (academic yr):	Yr 1 (FY10)	Yr 2 (FY11)	Yr 3 (FY12)	Yr 4 (FY13)	Yr 5 (FY14)
Full Time Faculty Member					
Salary	$ 75,000	$ 75,000	$ 75,000	$ 75,000	$ 75,000
Benefits	$ 22,500	$ 22,500	$ 22,500	$ 22,500	$ 22,500
Operating Expenses	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000
Total Program Expenses	$ 100,500	$ 100,500	$ 100,500	$ 100,500	$ 100,500
Annual Dept/Pgm Budget Impact	$ 100,500	$ -	$ -	$ -	$ -
Fixed Costs ex. inst'l support, student services	$ -	$ 31,430	$ 31,430	$ 31,430	$ 31,430
General Education Costs	$ -	$ 10,882	$ 10,882	$ 10,882	$ 10,882
Major Education Costs	$ -	$ -	$ -	$ -	$ -
TOTAL COSTS	**$ 100,500**	**$ 142,812**	**$ 142,812**	**$ 142,812**	**$ 142,812**

Income (per academic year):	Yr 1 (09-10)	Year 2	Year 3	Year 4	Year 5
Tuition revenue (undergraduate)	$ -	$ 32,160	$ 32,160	$ 32,160	$ 32,160
State appropriation (instruction)	$ -	$ 54,410	$ 54,410	$ 54,410	$ 54,410
Total Income from Instruction	$ -	$ 86,570	$ 86,570	$ 86,570	$ 86,570
State appropriation (other support)	$ -	$ 31,430	$ 31,430	$ 31,430	$ 31,430
Student fees	$ -	$ 13,100	$ 13,100	$ 13,100	$ 13,100
Total Other Monies Entering VSU	$ -	$ 44,530	$ 44,530	$ 44,530	$ 44,530
Less tuition for TAP students	$ -	$ -	$ -	$ -	$ -
Less tuition for 15% capital risk	$ -	$ (17,700)	$ (17,700)	$ (17,700)	$ (17,700)
Total Reductions	$ -	$ (17,700)	$ (17,700)	$ (17,700)	$ (17,700)
TOTAL INCOME	**$ -**	**$ 113,400**	**$ 113,400**	**$ 113,400**	**$ 113,400**
TOTAL *INC./COST* (excl. stu fees)	**$ (100,500)**	**$ (42,512)**	**$ (42,512)**	**$ (42,512)**	**$ (42,512)**
TOTAL REQUEST OF SF2010	**$ 100,500**	**$ 100,500**	**$ 100,500**	**$ 100,500**	**$ 100,500**
REALLOCATED FUNDING	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**



Year	New Students
Yr1	**0**
Yr2	**10**
Yr3	**10**
Yr4	**10**
Yr5	**10**

This cost proposal was completed by SRA based upon the SF2010 proposal submitted and may not accurately reflect the proposer's intentions.