AGREEMENT

This Agreement is made as of the _____, by and between **University of Florida Board of Trustees** (the "University of Florida") and **The University of the Virgin Islands** ("UVI").

WITNESSETH:

WHEREAS, the University of Florida and UVI desire to establish a joint degree program leading to the Bachelor of Science Degree from UVI and the Bachelor of Science Degree in Chemical Engineering, or Bachelor of Science Degree in Industrial and Systems Engineering from The University of Florida (the "Program").

NOW, THEREFORE, the parties hereto agree as follows:

1. Each student enrolled in the Program will be required to first attend UVI for approximately three (3) years, completing 98 academic points and then THE UNIVERSITY OF FLORIDA for two (2) years and completing 60 academic points. After completing the academic requirements of both institutions (as set forth herein), the student shall be awarded a Bachelor of Science degree from UVI and the Bachelor of Science degree in Engineering or Applied Science from The University of Florida. Each student in the Program shall complete the requirements for the Bachelor of Science Degree at The University of Florida in one of the undergraduate programs listed:

    Chemical Engineering
    Civil Engineering
    Computer Engineering
    Computer Science
    Environmental Engineering
    Electrical Engineering
    Industrial and Systems Engineering
    Mechanical Engineering

2. UVI students seeking admission into the Program at THE UNIVERSITY OF FLORIDA shall be required to have first satisfied the following requirements at UVI:

A. Successful completion of the following pre-engineering courses:

i. MATHEMATICS
- The full sequence of Calculus (4 terms) (MAT 241,242,341,342 at UVI)
- Ordinary Differential Equations (MAT 346 at UVI)

- Linear Algebra (MAT 261 at UVI)
- Other courses prescribed by major department at THE UNIVERSITY OF FLORIDA. If necessary, these may be taken at THE UNIVERSITY OF FLORIDA.

ii. PHYSICS
- General Physics I (PHY 241 at UVI)
- General Physics II (PHY 242 at UVI)
- Modern Physics (PHY 341 at UVI)
- Other courses prescribed by major department at THE UNIVERSITY OF FLORIDA. If necessary, these may be taken at THE UNIVERSITY OF FLORIDA.

iii. CHEMISTRY
- Two terms of Chemistry with Laboratory (General Chemistry I and General Chemistry II-CHE 151,CHE 152 at UVI)
- Other courses prescribed by major department at THE UNIVERSITY OF FLORIDA. If necessary, these may be taken at THE UNIVERSITY OF FLORIDA.

iv. COMPUTER SCIENCE
- One term of computer programming language.

v. ENGINEERING
- Engineering Graphics (EGR 131, EGR 132 at UVI)
- Engineering Mechanics (Statics and Dynamics – EGR 211, EGR 212 at UVI)
- Other courses prescribed by major department at THE UNIVERSITY OF FLORIDA. If necessary, these may be taken at THE UNIVERSITY OF FLORIDA.

vi. HUMANITIES AND SOCIAL SCIENCES
- Twenty-seven (27) points of non-technical course work must be completed prior to admission to the Program. As part of such 27 points, one term of Economics and one term of English Composition are required.

B. A minimum 3.0 (B) Grade Point Average.

C. A letter of recommendation from the Dual-Degree Engineering Director at UVI.

3. UVI students will be required to submit all application materials to <u>The University of Florida</u> Undergraduate Admissions Office prior to January 1 for admission to THE UNIVERSITY OF FLORIDA in the subsequent fall semester. Admissions decisions shall be made solely by THE UNIVERSITY OF FLORIDA

and shall be subject to all applicable The University of Florida rules and regulations. The parties understand that students' applications for admission will be evaluated on both academic and behavioral criteria. Students who do not meet any such criteria at the University of Florida's sole discretion may be denied admission.

4. Each student enrolled in the Program at THE UNIVERSITY OF FLORIDA will be required to complete a program of study comprising the standard number of credit hours required of juniors and seniors enrolled in THE UNIVERSITY OF FLORIDA program.

5. Any student enrolled in the Program at THE UNIVERSITY OF FLORIDA who shall not successfully complete the requirements for the Bachelor of Science Degree at The University of Florida shall, in the sole discretion of UVI, be permitted to return to UVI and given an opportunity to complete the requirements for the UVI degree.

6. This agreement may be terminated by either party upon one year's written notice to the other party; provided, however, that any UVI student already admitted to the UVI program specifically tracked for admission to THE UNIVERSITY OF FLORIDA or admitted to THE UNIVERSITY OF FLORIDA under the Program prior to the date of such notice of termination shall be allowed to complete the Program so long as such student is and remains in good academic standing and is making measurable progress toward Program and degree completion.

7. Any notice or other communication required or permitted to be given or made under this Agreement shall be sufficient if in writing and shall be considered given when mailed by certified mail, return receipt requested to the parties at the following addresses:

If to UVI:	Provost University of the Virgin Islands 2 John Brewers Bay St. Thomas, VI 00802
If to The University of Florida.:	Dean College of Engineering The University of Florida PO Box 116550 Gainesville, FL 32611

8. The failure of either party to enforce, at any time or for any period of time, any provision of this Agreement shall not be construed as a waiver of such provision. Any waiver of a breach hereunder shall be in writing and shall not be construed as to be a waiver of further breaches unless expressly stated. This Agreement may not be amended except by a writing signed by both parties.

9. This Agreement is the entire agreement of the parties with respect to the subject matter hereof, and supersedes any prior understanding, agreement or correspondence.

UVI and The University of Florida have executed this Agreement, each with the intent of being legally bound hereby, effective as of the date first written above.

University of the Virgin Islands	**University of Florida Board of Trustees**
_____	_____
Provost University of the Virgin Islands	Provost The University of Florida

Included here is a description of the Bachelor of Science in Applied Mathematics, a course paradigm for the UVI course of study, and a description of the courses. This paradigm includes all the courses required by the participating engineering schools, as well as all the BS general education requirements for UVI. Since the student does not finish an existing degree at UVI, and the engineering courses do not match up to any of our existing majors, it is necessary to institute a new major, specifically for this program. Only students accepted in the participating schools of engineering will be awarded a BS in Applied Mathematics.

Engineering at the University of the Virgin Islands
Students in the engineering program will complete three years at UVI and two years at an affiliated university. At the end of five years, the student will receive a Bachelor of Science from the University of the Virgin Islands and a Bachelor of Science in the chosen engineering discipline from the affiliated university. Currently, UVI is affiliated with Columbia University in New York and Washington University in St. Louis.

It is important to note that any student who begins in the Dual Degree Engineering program, but decides to remain at the University of the Virgin Islands instead of going on to the participating engineering schools is on track to receive a BS in Mathematics through the completion of the regular requirements during their fourth year of study at UVI. Clearly, if a student decides on another major, this might extend their UVI college career by about a year.

Detailed Description:

Major Description: The Bachelor of Science in Applied Mathematics is intended for those students who enroll in the Dual Degree Engineering Program at the University of the Virgin Islands. Through these programs, the student will complete three years of study at the University of the Virgin Islands, and two years of study at one of the participating engineering schools. The student is required to have a minimum GPA of 3.0 in order to be in good standing in the program. Upon completion of the program, the student will receive two degrees: a degree from the University of the Virgin Islands, and an engineering degree from the participating engineering school. The degree received from UVI will be a Bachelor of Science in Applied Mathematics, regardless of the type of engineering degree the student receives.

In addition to completing the general education requirements for the Bachelor of Science degree, the student is required to complete the following courses at UVI:

Required Courses in Mathematics:

MAT 241-242	Introductory Calculus I-II
MAT 341-342	Intermediate Calculus I-II
MAT 261	Linear Algebra
MAT 346	Differential Equations
MAT 397-398	Junior Seminar

Required Courses in Related Fields:

CHE 151-152	General Chemistry I-II
PHY 241-242	General Physics I-II
PHY 341	Modern Physics
CSC 117	Intro. To Programming I
ECO 221	Intro. To Macro-Economics

In addition to the required courses, the student is strongly advised to take more courses related to his/her chosen field of specialization. For example, a student interested in Chemical Engineering will take many Chemistry courses.

Sample Paradigm for students prepared for Calculus Freshman Year

First Year Fall	*First Year Spring*
MAT 241	MAT 242
CHE 151	CHE 152
SCI 100	SSC 100
COM 101	COM 102
FDS 100	PE
PE	

Second Year Fall	*Second Year Spring*
MAT 261	PHY 241
MAT 341	MAT 342
CSC 117	Elective
COM 103	Soc. Sci. Elective
Soc. Sci. Elective	Humanities
PE	PE

Third Year Fall	*Third Year Spring*
PHY 242	PHY 341
ECO 221	MAT 346
Elective	Elective
Hum. Elective	Elective
Hum. Elective	Elective
MAT 397	MAT 398

Sample Paradigm for students not prepared for Calculus Freshman Year

First Year Fall	*First Year Spring*
MAT 143	MAT 142
CHE 151	CHE 152
SCI 100	SSC 100
COM 101	COM 102
FDS 100	PE
PE	

Second Year Fall	*Second Year Spring*
MAT 261	PHY 241
MAT 241	MAT 242
CSC 117	Elective
COM 103	Soc. Sci. Elective
PE	Humanities
	PE

Third Year Fall	*Third Year Spring*
PHY 242	PHY 341
ECO 221	MAT 346
MAT 341	MAT 342
Hum. Elective	Elective
Hum. Elective	Elective
MAT 397	MAT 398

Students must maintain a grade point average of 3.0 for full consideration for entry into the affiliated university's engineering programs.

Course Checklist

Engineering Requirements:

General Education Requirements:

SCI 100 _____	Soc. Sci el._____	Hum. el ____
SSC 100 _____	Soc. Sci el._____	Hum. el _____
FDS 100 _____	Soc. Sci el._____	Hum. El._____
COM 101____	PE_____	PE _____
COM 102____	PE_____	PE _____

Mathematics Requirements:

MAT 241_____	MAT 242_____	
MAT 261_____	MAT 341_____	MAT 342_____
MAT 346_____	MAT 397_____	MAT 398_____

Other Required Courses

CHE 151_____	CHE 152 _____	CSC 117_____
PHY 241_____	PHY 242 _____	PHY 341 _____
ECO 221 _____		

Descriptions:

General Education Requirements:

SCI 100. THE CARIBBEAN: THE NATURAL WORLD. A topical examination of the natural world of the Caribbean. Included will be considerations of elements of Caribbean life associated with the natural world with emphasis on their roots in the Natural Sciences. The approach is interdisciplinary with a variety of learning strategies employed. Two hours of lecture and three hours of lab per week. This course is half of the two-part Freshman Year General Education Curriculum. 3 credits

SSC 100. The CARIBBEAN: THE SOCIAL DIMENSION. A topical examination of the social dimensions of Caribbean cultures from the origins of human habitation to the present. Its interdisciplinary approach will emphasize the perspectives of the various social sciences, with attention also given to the arts of the Caribbean. A variety of teaching and learning strategies will be utilized. 3 credits

FDS 100. FRESHMAN DEVELOPMENT SEMINAR. This course will provide an introduction to the nature of university education and an orientation to University functions and resources. It is designed to assist students in obtaining skills necessary for the attainment of their educational objectives. Group process will be emphasized. 1 credit

COM 101. INTRODUCTION TO ORAL AND WRITTEN COMMUNICATION PART I. This is a course designed to assist and guide students in developing their communication skills of speaking, listening, reading and writing. It involves an intensive study of dictions, sentence structure, paragraph development, essay organization, review of grammar and writing mechanics as well as practice in identifying, stating, analyzing and researching topics for individual presentations. Prerequisite: ENG 100/WAC 011 or successful score on placement test, or 500 or above on Verbal SAT examination. 3 credits

COM 102. INTRODUCTION TO ORAL AND WRITTEN COMMUNICATION PART II. This is a course designed to assist and guide student in further developing their communication skills of speaking, listening, reading and writing. It involves an intensive exercise in research techniques, critical thinking and persuasive principles as students engage in identifying, stating, analyzing and researching topics for individual oral and written presentations. Prerequisite: COM 101 3 credits

COM 201. RESEARCH AND APPLIED WRITING. COM 201 is the capstone course in the University-wide writing requirement. This course will prepare students to achieve proficiency in the use of standard writing formats for communication in the various disciplines. It includes preparation of a major documented research paper using primary research techniques as well as secondary sources, including the Internet. It encourages the integration of approaches and methodologies from different disciplines in exploring ideas and issues. Prerequisite: COM 102 3 credits

Mathematics Requirements:

MAT 241-242. INTRODUCTION TO CALCULUS AND ANALYTICAL GEOMETRY I-II. Rates of change, derivatives, integration, transcendental functions, techniques of integration, determinants and linear equations, plane analytic geometry, hyperbolic functions, polar coordinates, vectors and parametric equations. Prerequisites: MAT 143-MAT 142. 4-4 credits

MAT 261. LINEAR ALGEBRA. Fall. A study of systems of linear equations, echelon matrices and Gaussian elimination; matrix operations, inverses and determinants; vector spaces, subspaces, linear independence, basis and dimension, orthonormal bases; linear transformations, kernel and image, matrix representations, change of basis, eigenvalues, eigenvectors and diagonalization of symmetric matrices; applications. Prerequisite: MAT 241 (may be taken concurrently). 4 credits

MAT 341-342. INTERMEDIATE CALCULUS I (Fall) and II (Spring). Polar coordinates, conic sections, indeterminate forms, improper integrals, Taylor's formula with remainder, sequences and series, vectors and analytic geometry in two and three dimensions, partial differentiation, directional derivatives, gradients, extrema, line integrals, multiple integration and applications. Prerequisite: MAT 242. 3-3 credits

MAT 346. DIFFERENTIAL EQUATIONS. Spring. Solutions of ordinary differential equations; LaPlace transforms. Prerequisite: MAT 342 (may be taken concurrently). 3 credits

MAT 397, 398. JUNIOR MATHEMATICS SEMINAR I, II. Topics of interest and importance to mathematics majors will be presented by faculty, visiting scholars, senior mathematics majors, and junior mathematics majors. An opportunity for exposure to mathematics not normally covered in class and for the development of mathematical thinking. Prerequisite: Junior mathematics major. Corequisite: MAT 341. 1/2, 1/2 credits

Other Required Courses:

CHE 151-152. GENERAL CHEMISTRY I-II. An introduction to chemical principles emphasizing atomic and molecular structure. Topics include the principal states of matter, stoichiometry, thermochemistry, kinetics, chemical equilibrium, oxidation-reduction, electrochemistry and the chemistry of the representative and transition elements. 4 hours of lecture and 3 hours of laboratory per week. Prerequisites: Successful completion of ENG 101/RCA 021 or a satisfactory score on SAT for exemption, and MAT 140 or MAT 143 which may be taken concurrently. 5-5 credits

CSC 117. INTRODUCTION TO PROGRAMMING I. This course requires no previous programming background. Students will learn the use of a programming environment, which includes the program editor, libraries, and compiler. Students will learn the use of basic data types, statements, controls, and structures. A high-level computer programming language will be explored in the context of solving problems. Procedures and functions will be introduced while stressing the concepts of program modularity and top-down design. *Students participating in this course must have acquired the skills of sending and receiving attached documents by email and they must be familiar with web browser navigation. Students are expected to access class resources on the Internet daily. It is strongly recommended that students have a computer with available access to the Internet.* 4 credits

PHY 241-242. GENERAL PHYSICS I-II. An introduction to mechanics, heat, sound, electricity, magnetism, optics and modern physics, with strong emphasis on a rigorous mathematical development of the science. Serves as a prerequisite for more advanced courses in the physical sciences and engineering. Four lectures and three hours of laboratory per week. Prerequisite: MAT 241-242 (may be taken concurrently). 5-5 credits

PHY 341. MODERN PHYSICS. The fundamental concepts of relativity and quantum physics. Application to atomic structure and spectra, blackbody function; solid-state physics, nuclei and elementary particles. Three hours of lecture per week. Prerequisites: PHY 242 and MAT 342 which may be taken concurrently. 3 credits

PHY 351. MODERN PHYSICS LABORATORY. Introduces the student to experimental research in physics. Crucial experiments in modern physics. Three hours of laboratory per week. Prerequisite: PHY 341 which may be taken concurrently. 1 credit

ECO 221. INTRODUCTION TO MACRO-ECONOMICS. Examines the major problems of economic stability, growth, unemployment, and the role of the government in controlling and regulating economic activity with particular focus upon fiscal and monetary policies. Prerequisite: General education mathematics requirement or equivalent competence established by examination. 3 credits

Sample Program

Industrial and Systems Engineering

"Students must complete at least 6 of 8 critical tracking courses (Calc 1, Calc 2, Calc 3, Differential Equations, Physics 1/w Lab, Physics 2/w Lab, Chemistry 1/w Lab, Computer Programming) with a minimum grade of C in no more than two attempts. The combined GPA for critical tracking courses must be a 2.5. The overall GPA at current institution must be a 3.0."

UF Curriculum			UVI	
MAC 2311	Calculus 1	4	MAT 241	Calc 1
CHM 2045	Chemistry 1	3	CHE 151	Chem 1
CHM 2045L	Chemistry 1 Lab	1	CHE 151	
GE-H	Humanities	3	Included in a UVI course	
ECO 2013	Macroeconomics	3	ECO 321	Macro
MAC 2312	Calculus 2	4	MAT 242	Calc 2
ENC 2210	Tech Writing	3	COM 201	Research and Applied Writing
GE-H	Humanities	3	Included in a UVI course	
ECO 2023	Microeconomics	3	ECO 322	Micro
MAC 2313	Calculus 3	4	MAT 341	Calc 3
PHY 2048	Physics 1	3	PHY 241	Physics 1
PHY 2048L	Physics 1 Lab	1	PHY 241	
EML 2023	CAD	3	EGR 131	Graphics
GE-H or S	Hum/Social	3	Included in a UVI course	
MAP 2302	Diff Eq	3	MAT 346	Diff Eq
PHY 2049	Physics 2	3	PHY 242	Physics 2
PHY 2049L	Physics 2 Lab	1	PHY 242	
CGS 2425	Programming	2	Computer Lang	
EIN 3101C	Intro ISE	2		
ACG 2021	Accounting	3	ACG 121	

STA 4321	Math Statistics 1	3		
ESI 4567C	Matrix Mthds	4	MAT 241	Lin Algebra
EGM 2511	Statics	3	EGR 211	Statics
EIN 4354	Eng Econ	3		
STA 4322	Math Statistics 2	3		
EIN 4365	Facilities	3		
ESI 4312	OR 1	3		
ESI 4221C	Quality Contl	3		
EIN 3314C	Work Design	3		
ESI 4161	MicroProcessors	3		
ESI 4313	OR 2	3		
EIN 4401	Lean Prod Sys	3		
ESI 4356	DSS	3		
EMA 3010	Materials	3		
ESI 4523	Simulation	3		
EIN 4321	Energy Mgmt	3		
EIN 4343	Inv & Supply Chn	3		
Tech Elec		2	Tech Elec.	
Tech Elect.		3		
EEL 3003	Electrical Eng	3		
ESI 4357	Web DSS	3		
EIN 4335	Senior Proj	3		
Tech Elec		4		
Tot. hrs needed by UVI transfer		60		