

1983

# Center for Science and Engineering Schedule of Classes Spring-Summer 1983

Nova Southeastern University

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# Schedule of Classes

## Spring-Summer Schedule

### Bachelor Degree Programs

Electrical Engineering  
Computer Engineering  
Computer Science  
Computer Systems  
Computer Information Systems  
Mathematics  
Computer Systems/Technical Communications

### Master's Degree Programs

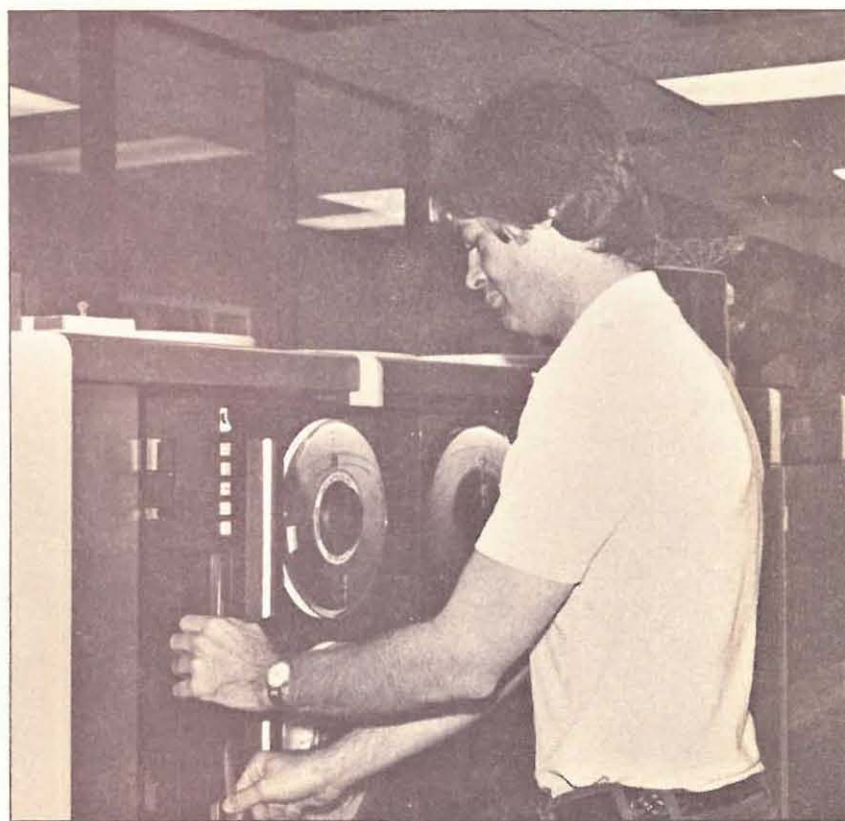
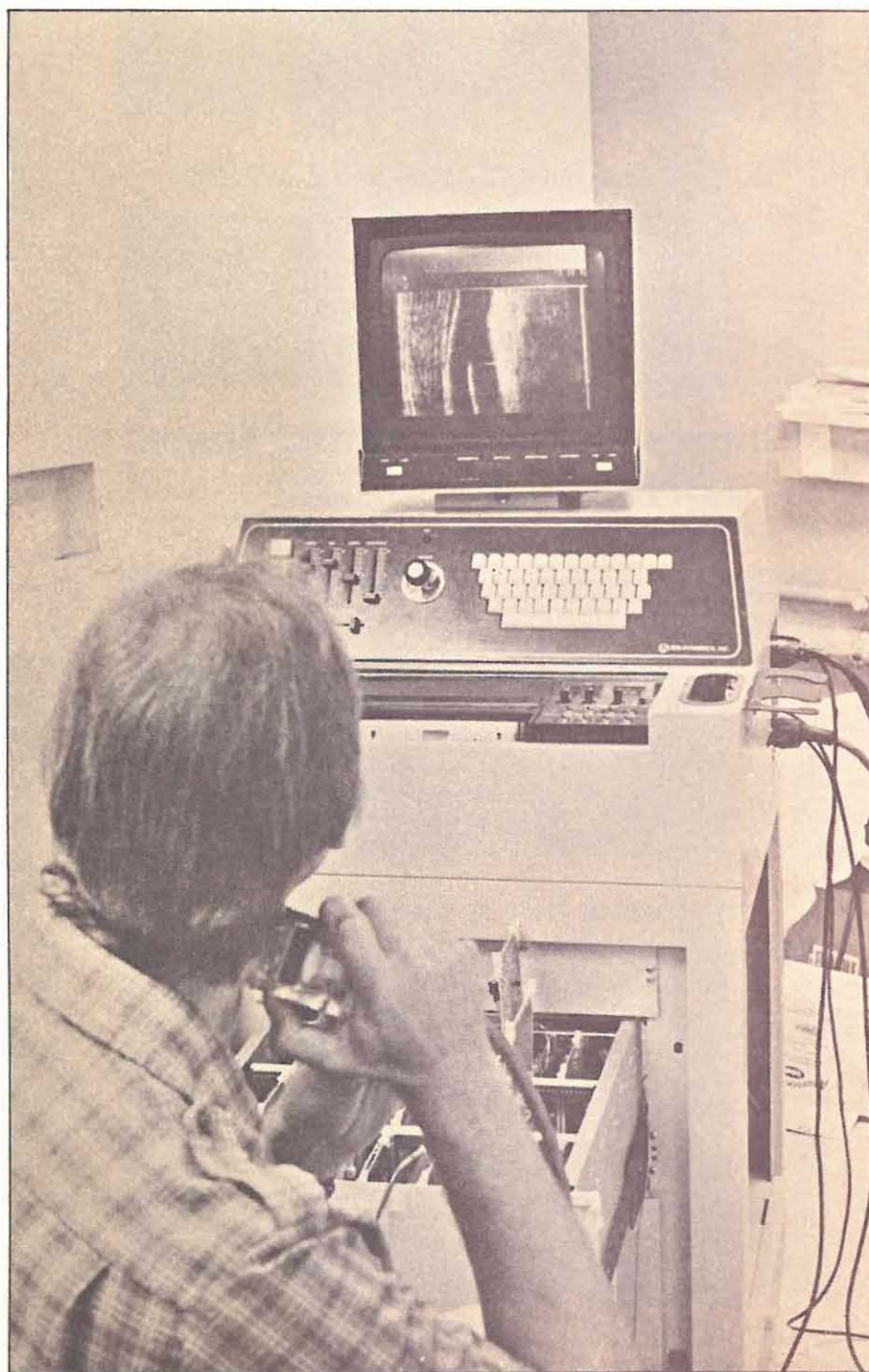
Computer Science  
Engineering Management  
Computer Management

### Special Programs

**Nova University**  
CENTER FOR SCIENCE AND ENGINEERING

NON-PROFIT ORGANIZATION  
U.S. POSTAGE  
PAID  
PERMIT NO. 888  
FT. LAUDERDALE, FLORIDA

**Nova University**  
3301 College Avenue  
Fort Lauderdale, Florida 33314





# Registration Policies

## Registration

Register in person by submitting your completed registration form and tuition and fees IN FULL to the Office of the Registrar, Parker Building, Room 104. The hours are Monday through Thursday, 8:30 a.m.-6:30 p.m., and Friday, 8:30 a.m.-5:00 p.m.

OR  
mail your completed registration form, tuition and fees IN FULL to the Office of the Registrar, 3301 College Avenue, Fort Lauderdale, Florida 33314. Call 475-7400 to request registration materials if you have not received them.

The regular registration fee is in effect until one week before the term begins. After that, a late fee will be charge.

## Drop/Add Procedures

The first week of classes is the Drop/Add Period. After a class

has met once you must receive written permission from the program office to add the class. The normal refund policy applies to a course dropped during the drop and add period unless another course of equal credit, with the same term beginning date, is added in its place.

The Registrar's Office must be notified in writing of the course to be dropped. This may be done by completing a change of Registration form available in the Registrar's Office or by mailing a simple written note to the Registrar's Office.

## Tuition Refund Policy

The following refund policy will be computed based upon the date written notification of the drop is received by the Registrar's Office:

100% refund prior to the first

class meeting.

75% refund prior to the second class meeting, regardless of class attendance.

50% refund prior to the third class meeting, regardless of class attendance.

Fees are non-refundable.

## Policy Regarding Incomplete Grades

With the written approval of the course instructor, you may have up to one additional term to complete the course and receive a letter grade. An incomplete form must be completed and signed by the instructor in order to receive a grade of "I".

## Withdrawal Policy

After the third class meeting, a student may withdraw from a course by completing a

"Withdrawal Form" available in the Registrar's Office. This form should be approved by the instructor and academic office. It is the student's responsibility to return the completed form to the Registrar's Office.

## Financial Aid

Nova University participates in various governmental financial aid programs for the benefit of its students.

For information call: 475-7410.

## Last Day To Withdraw:

9-week courses / July 8, 1983  
12-week courses / Sept. 9, 1983

For information call:

Broward County 475-7650  
Dade County 940-6447 x 7650  
Palm Beach County 732-6600 x 7650

## Undergraduate Courses

8305 JP Beginning May 23, 1983 (9 Weeks)

Course No.	Sec	Course Title	Day	Dates	Time	Loc
CS-370	A	Software Design	M	5/23-7/25	6:00-10:30 pm	P208
EE-460	A	Micro-Processor Applications	M	5/23-7/25	6:00-10:30 pm	P209
MAT-135	A	Technical Math	M	5/23-7/25	6:00-10:30 pm	P106
MAT-150	A	Precalculus	M	5/23-7/25	6:00-10:30 pm	P107
PHY-150	A	Physics II	T	5/23-7/25	6:00-10:30 pm	P335
CS-170	A	Computer Programming I	T	5/24-7/19	6:00-10:30 pm	P208
CS-405/505	A	Computer Architecture	T	5/24-7/19	6:00-10:30 pm	P105
EE-405	A	Networks III	T	5/24-7/19	6:00-10:30 pm	P106
CS-200	A	Computer Programming II	W	5/25-7/20	6:00-10:30 pm	P209
CS-335	A	Assembly Language	W	5/25-7/20	6:00-10:30 pm	P208
EE-470	A	Electrical Engineering Design	W	5/25-7/20	6:00-10:30 pm	P106
CS-150	A	Introduction to Computer Organization	Th	5/26-7/21	6:00-10:30 pm	P106
CS-220	A	Cobol (Business Oriented Language)	Th	5/26-7/21	6:00-10:30 pm	P209
CS-480	A	Introduction to Compilers and Interpreters	Th	5/26-7/21	6:00-10:30 pm	P107
MAT-220	A	Calculus II	Th	5/26-7/21	6:00-10:30 pm	P142
MAT-310	A	Differential Equations	Th	5/26-7/21	6:00-10:30 pm	P150

8306 CP Beginning June 13, 1983 (9 Weeks)

Course No.	Sec	Course Title	Day	Dates	Time	Loc
CS-330	A	Structured Programming (Pascal)	M	6/13-8/8	6:00-10:30 pm	P215
CS-340	A	Data Structures	M	6/13-8/8	6:00-10:30 pm	P213
CS-200	A	Computer Programming II	T	6/14-8/9	6:00-10:30 pm	P209
CS-170	B	Computer Programming I	W	6/15-8/10	9:00 am-1:00 pm	P213
CS-170	A	Computer Programming I	Th	6/16-8/11	6:00-10:30 pm	P208
CS-210	A	Fortran	Th	6/16-8/11	6:00-10:30 pm	P240
MAT-150	A	Precalculus	Th	6/16-8/11	6:00-10:30 pm	PL004*
MAT-210	A	Calculus I	Th	6/16-8/11	6:00-10:30 pm	PL005*

\*Orange Plaza

## Graduate Courses

8305 CS Beginning May 23, 1983 (9 Weeks)

Course No.	Sec	Course Title	Day	Dates	Time	Loc
EGR-560	A	Micro-Processor Applications	M	5/23-7/25	6:00-10:30 pm	P209
CS-505	A	Computer Architecture	T	5/24-7/19	6:00-10:30 pm	P105
CS-580	A	Intro. to Compilers and Interpreters	Th	5/26-7/21	6:00-10:30 pm	P107

8307 CS Beginning July 11, 1983 (12 Weeks)

Course No.	Sec	Course Title	Day	Dates	Time	Loc
CS-627	A	Operations Research	T	7/12-9/27	6:00-10:00 pm	P147
CS-661	A	Data Base Management	W	7/13-9/28	6:00-10:00 pm	P147
CS-639	A	Compiler Implementation	Th	7/14-9/29	6:00-10:00 pm	P147

EGR 440 A Mo 7/11-9/26 P147

## Courses for Non-Technical Majors

Set up through uc Beginning May 9, 1983 (8 week courses)

Course No.	Sec	Course Title	Day	Dates	Time	Loc
CS-111	M	Computer Literacy	M	5/9-7/11	6:00-10:00 pm	P146
CS-112	M	Intro. to Data Processing	T	5/10-6/28	6:00-10:00 pm	P143
PHY-101	M	Intro. to Physical Science	W	5/11-6/29	6:00-10:00 pm	P239
CS-111	M2	Computer Literacy	Th	5/12-6/30	9:30 am-1:30 pm	P214
MAT-102	M	Introductory Algebra	Th	5/12-6/30	6:00-10:00 pm	P146

Set up through uc Beginning July 5, 1983 (8 weeks)

Course No.	Sec	Course Title	Day	Dates	Time	Loc
CS-111	A	Computer Literacy	T	7/5-8/23	6:00-10:00 pm	P146
CS-111	B	Computer Literacy	T	7/5-8/23	9:30 am-1:30 pm	P214
CS-113	A	Business Applications of Micro-computers	Th	7/7-8/25	6:00-10:00 pm	P146
LSC-105	M	Concepts In Biology	Th	7/7-8/25	6:00-10:00 pm	P129
MAT-102	M	Introductory Algebra	T	7/5-8/23	6:00-10:00 pm	P143
MAT-105	M	College Algebra	T	7/5-8/23	6:00-10:00 pm	P239



# Summary of Program Requirements

EE	CE	CS	MATH	SYS	CIS	SYS/TC	
x	x	x	x	x	x	x	Communications (3 cr.) (LAN-111)
x	x	x	x	x	x	x	Communications (3 cr.) (LAN-112 or TEC-330)
x	x	x	x	x	x	x	Social Science/Behavioral Science (12 cr.)
x	x	x	x	x	x	x	Humanities (6 cr.)
		x		x			MAT-150 Precalculus
x	x	x	x	c		c	MAT-210 Calculus I
x	x	x	x				MAT-220 Calculus II
x	x	x	x				MAT-305 Calculus III
x	x		x				MAT-310 Differential Equations
				c	x	c	MAT-315 Introduction to Statistics
		x					MAT-320 Advanced Calculus
a	a	a					MAT-360 Matrices & Statistics
a	a	a	x				MAT-420 Linear Algebra
		x					MAT-430 Functions of a Complex Variable
x	x	x	x				MAT-440 Numerical Analysis
a	a	a	x				MAT-450 Probability & Statistics
x	x	x	x				PHY-140 Physics I
x	x	x	x				PHY-150 Physics II
x	x	x	x				PHY-160 Physics III
x	x	x	x				PHY-212 Science of Matter/or a chemistry course
x			x				PHY-310 Modern Physics
				x	x	x	Physical/or Life Science (9 cr.)
				x			CS-112 Introduction to Data Processing
				x	x	x	CS-150 Introduction to Computer Organization
x	x	x	x				CS-160 Fundamentals of Logic Design
x	x	x	x	x	x	x	CS-170 Computer Programming I
x	x	x	x	x	x	x	CS-200 Computer Programming II
c	x	x	x	x		x	CS-210 Fortran
		x	x	x	x	x	CS-220 Business Oriented Language (Cobol)
x	x	x	x				CS-240 Digital Design
					x		CS-315 Advanced Cobol
		x	x	x		x	CS-320 Organization of Programming Languages
c	x	x	x	x	x	x	CS-330 Structured Programming (Pascal)
		x	x	x		x	CS-335 Assemblers & Assembly Language Programming
		x	x	x	x	x	CS-340 Data Structures
					x		CS-345 Distributed Data Processing
x	x	x					CS-350 Computer Circuit Design
					x		CS-365 Methods of Systems Analysis
	x	x	x	x		x	CS-370 Software Design
					x		CS-401 Organization of the Computer Environment
x	x	x					CS-405 Computer Architecture
x	x	x					CS-410 System Design & Analysis
	b	b		a			CS-420 Operating System Concepts
							CS-430 Simulation & Modeling
	b						CS-440 Microcomputers
		b		x	x		CS-450 Data Base Management Systems Design
	b	x		x		x	CS-460 System Programming
				a	x		CS-470 Information Systems Analysis and Design
					x		CS-475 EDP Audit and Control
	b	b		a			CS-480 Introduction to Compilers & Interpreters
							CS-485 Theory of Computation
					x		CS-490 Directed Project in Computer Science
x	x	x					EE-210 Networks I
x	x						EE-255 Electricity Laboratory (1 cr.)
x	x						EE-310 Networks II
x	x	x					EE-330 Electronics I
x	x						EE-335 Electronics Lab I (1 cr.)
x	x						EE-340 Electronics II
x	x						EE-345 Electronics Lab II (1 cr.)
x	b						EE-400 Electronics III
x	b						EE-405 Networks III
x	b						EE-410 Electromagnetic Theory
x	b						EE-420 Field Transmission Lines
x	b						EE-430 Fundamentals of Communication Systems
x	b						EE-440 Energy Systems
x	b						EE-450 Control Systems
x	x						EE-460 Micro-electronics
x	b						EE-470 Electrical Engineering Design
x					x		ES-220 Engineering Drawing
x							ES-310 Engineering Applications of Materials
							ES-320 Industrial Planning
							ES-330 Statics
							ES-340 Dynamics
							ES-390 Thermodynamics
					x		TEC-320 Technical Communication
					x		TEC-330 Technical Writing
					x		TEC-350 Production of Technical Communication Material
					x		TEC-370 Technical Documentation I
					x		TEC-380 Technical Documentation II
					x		TEC-450 Legal Aspects of Technical Communication
					x		TEC-460 Technical Communication Project Management
					x		TEC-470 Seminar in Technical Communication
9	9	12	15	12	21	12	Electives (in credits)
				30	12		Credits in Business (or approved discipline)
			6		6	9	Electives in CS or EE

## Program Requirements

B.S. Electrical Engineering (EE)  
B.S. Computer Engineering (CE)  
B.S. Computer Science (CS)  
B.S. Mathematics (MATH)  
B.S. Computer Systems (SYS)  
B.S. Computer Information Systems (CIS)  
B.S. Computer Systems/Technical Communications (SYS/TC)

a = Choose 1 "a" course.

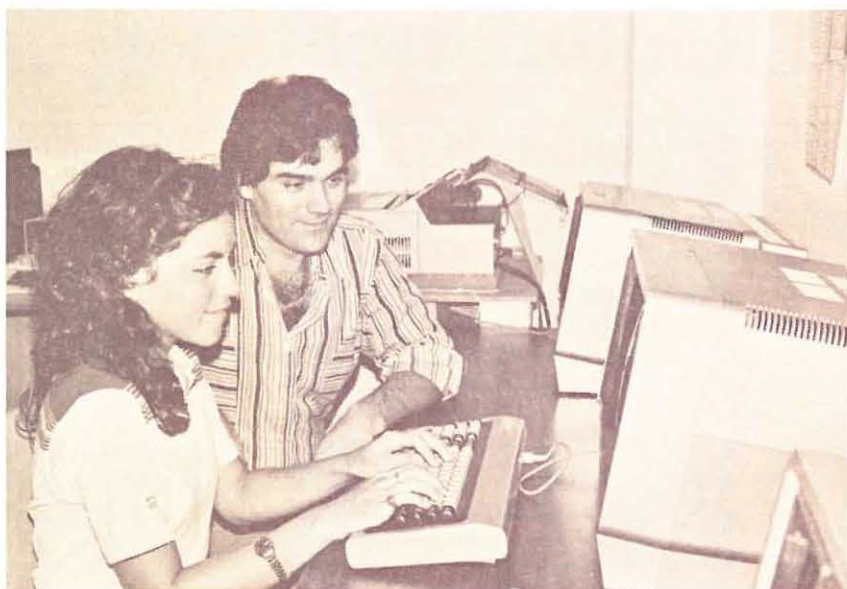
b = Choose 2 "b" courses.

## Degree Code

138 credits 460  
120 credits 465  
120 credits 463  
120 credits 462  
120 credits 464  
120 credits 466  
120 credits 464

c = Choose 1 "c" course.





## Deferred Payments

In certain circumstances students may satisfy the registration FULL PAYMENT policy by signing an official NOTE which will obligate them to complete full payment within a period of time prescribed by the University. The circumstances when deferred payment is possible are as follows:

- Students who have APPROVED bank or government LOANS, VA BENEFITS, or other forms of financial aid may obtain a promissory note allowing them to defer full payment until the loan or aid is actually disbursed.
- Students who are eligible for TUITION REIMBURSEMENT from their EMPLOYER may obtain a promissory note allowing them to defer full payment until they are actually reimbursed. Students must document that they are eligible under an approved company reimbursement policy.

## Fee Schedule

Graduate application fee (non-refundable)	\$ 15
Graduate registration fee (non-refundable)	\$ 15
Graduate late registration fee	\$ 15
Graduate tuition fee (per credit)	\$130
Undergraduate application fee (non-refundable)	\$ 20
Undergraduate registration fee (non-refundable)	\$ 10
Undergraduate late registration fee	\$ 10
Undergraduate tuition fee (per credit)	\$110

## Bulletin Board

### Placement Test Dates

April 28	6 pm-9 pm	P241
May 7	10 am-1 pm	P240
May 23	6 pm-9 pm	P240
June 4	10 am-1 pm	P240
June 21	6 pm-9 pm	P240
July 9	10 am-1 pm	P240
July 27	6 pm-9 pm	P241
August 6	10 am-1 pm	P240
August 25	6 pm-9 pm	P240

### — Beginning June 13 —

New program for young people grades 9-12. Summer day and evening classes. Call for information: 475-7650

### Fall Term

Undergraduate fall term begins:

August 29

Registration begins: August 1



## Course Descriptions

All courses are 3 semester credits unless noted.

**CS-111 Computer Literacy** Introduction for the non-technical person. Computer literacy, principles of computer operation, uses of computer in small businesses, schools, social service agencies, hospitals. Hands-on experience with micro-computers and specialized software. This course is for non-computer science majors.

**CS-112 Introduction to Data Processing (BUS 3801, CS-101)** Topics include basic computer theory, file storage media, input devices, number systems and programming techniques. This course is for non-computer science majors. PREREQUISITE: CS-111.

**CS-113 Business Applications of Microcomputers** Theory and applications of programs for microcomputers which are useful in the business environment. Accounting, data base management, and information system management programs will be included. Computer laboratory-oriented course. PREREQUISITE: CS-111 or familiarity with microcomputers.

**CS-150 Introduction to Computer Organization** An introduction to principles of digital computer operation and organization, data representation, the central processing unit, memory, input/output devices, number systems, logic systems. PREREQUISITE: Demonstrated competency equivalent to MAT-102.

**CS-170 Computer Programming I** An introduction to good programming techniques including flowcharting, code design, debugging techniques and documentation, problem-solving methods and algorithm development to be used in the design of computer programs. The language, BASIC, will be taught as part of this course. An introduction to the use of microcomputers and computer terminals. PREREQUISITE: demonstrated competency equivalent to MAT 102.

**CS-200 Computer Programming II** Continuation of Computer Programming I including introduction to random and sequential files, program de-

sign, modular design, structured programming, large programming design, documentation. PREREQUISITE: CS-170

**CS-210 Fortran** Introduction to the language FORTRAN with reference to the latest standards, special techniques for programming in FORTRAN. PREREQUISITE: CS-200

**CS-220 Business Oriented Language (COBOL)** A study of the COBOL programming language with emphasis on business applications. Topics covered will include program structure and breakdown, report generation and file handling. PREREQUISITE: CS-200.

**CS-320 Organization of Programming Languages** Development of an understanding of the organization of programming languages, introduction to formal study of programming language specification and analysis, comparison of two or more high level modern programming languages. PREREQUISITE: CS-210, CS-330, CS-340.

**CS-330 Structured Programming (PASCAL)** Basic principles of structured programming and language foundation. PASCAL will be taught as an example of a structured programming language. PREREQUISITE: CS-200, and CS-210 or CS-220.

**CS-335 Assemblers and Assembly Language Programming** A detailed analysis of the operation of assemblers. Assembler features, assembly language programming, macrofacilities. Assembly language programs will be written as part of this course. PREREQUISITE: CS-210 or CS-330.

**CS-340 Data Structures** An introduction to the concepts and techniques of structuring data on bulk storage devices, introduction to data structures and file processing including arrays, records, strings, lists, trees, stacks, queues, manipulation and limitations of files. PREREQUISITE: CS-330.

**CS-370 Software Design** Algorithm analysis, software design, management of large software pro-

jects, functional specification, design and testing phase of large scale projects, quality control. PREREQUISITE: CS-330.

**CS-401/501 Organization of the Computer Environment** Management of the computer environment, personnel, customer interface, budgeting, coordination, policy development, staffing, department interface, hardware and software selection, planning, maintenance, and management. PREREQUISITE: Requires senior standing.

**CS-405/505 Computer Architecture** The analysis and design of computer systems; the interrelation of software and hardware design in the final computer system, interrelation between the operating system and the architecture of computer systems, concurrent processes and resource allocation. PREREQUISITE: CS-350. Suggested prerequisite: CS-335.

**CS-410 System Design and Analysis** Advanced topics in design of digital computer systems and components. PREREQUISITE: CS-405.

**CS-480/580 Introduction to Compilers and Interpreters** An introduction to compiler/interpreter design. Topics include lexical analysis, parsing, intermediate code, final code generation, optimization, and error recovery. PREREQUISITE: CS-320 OR CS-631.

**CS-627 Operations Research** Analytic formulation and solution of decision problems using mathematical techniques. Linear and dynamic programming. Queuing, searching, maximizing/minimizing techniques. Scheduling and inventory models, forecasting and time series analysis. PREREQUISITE: CS-631 Programming Languages (Same as EGR-627).

**CS-639 Compiler Implementation** Design, implementation, and testing of a compiler for a high-level language. PREREQUISITE: CS-637 Compiler Design Theory.

**CS-661 Data Base Management** Computer-oriented techniques for information storage and retrieval with emphasis on on-line capability. File

structures, including data definition and manipulation languages. PREREQUISITE: CS-550 Data Base Management Systems Design.

**EE-405 Networks III** Continuation of Networks II emphasizing Laplace transforms for solving advanced network problems. PREREQUISITE: EE-310, MAT-305, MAT-310, EE-340.

**EE-460 Microprocessor Applications** Applications in the design of microprocessor-based circuits. PREREQUISITE: CS-350. Suggested prerequisite: Assemblers and Assembly Language Programming (Same as EGR-560).

**EE-470 Electrical Engineering Design** Application of design techniques to special projects in Electrical Engineering. PREREQUISITE: This is a senior-level Electrical Engineering course and requires that most Electrical Engineering courses be completed.

**EGR-560 Microprocessor Applications** Applications in the design of microprocessor-based circuits. PREREQUISITES: Computer Circuit Design. Suggested prerequisite: Assemblers and Assembly Language Programming. (same as EE-460).

**LSC-105 Concepts in Biology** This course is designed to explore the major concepts in Biology from the cell to the behavior of the whole integrated plant and animal. This course is intended for non-science students.

**MAT-102 Introductory Algebra A** basic review of algebra including algebraic terminology, polynomials and applications. Appropriate for non-math and non-science majors.

**MAT-105 College Algebra (MAT-3002)** Includes topics such as fundamental operations, functions and graphs, linear and quadratic equations, and conic sections.

**MAT-135 Technical Mathematics** Prepares the technical major for Precalculus. Including a basic review of algebraic terminology, polynomials, fundamental operations, functions and

graphs, linear and quadratic equations, and conic sections. PREREQUISITE: Placement examination requirement satisfied or MAT-102. Credit not given for those students who have taken MAT-105.

**MAT-150 Precalculus** Review of algebra, trigonometric functions, graphs of functions, logarithms, exponents, functions of the natural number. Introduction to calculus, concept of limits, integrals. PREREQUISITE: Placement examination requirement satisfied or MAT-135 OR MAT-105.

**MAT-220 Calculus II** Riemann sums, the definite integral, methods of integration, continuation of exponential, logarithmic functions, inverse trigonometric functions. L'Hopital's rule and improper integrals. PREREQUISITE: MAT-210.

**MAT-310 Differential Equations** Solving first order ordinary differential equations, exact, separable and linear. Applications to rates and mechanics, theory of higher order linear differential equations. Methods of undetermined coefficients and variation of parameters, application to vibration, mass and electric circuits, power series solutions. Partial differential equations, the methods of separation of variables, linear partial differential equations and their application to electronics and electrical engineering problems, solutions of initial boundary problems. Fourier series and Fourier transforms, inhomogeneous problems, introduction to numerical methods. Laplace transforms. PREREQUISITE: MAT-305.

**PHY-101 Introduction to Physical Sciences A** survey course in physical sciences for non-science majors. Topics include the concepts of motion, electricity and light, matter, atoms and nuclear and solar system.

**PHY-150 Physics II** Electrostatics, electric currents, electric fields and electric potential, AC and DC circuits, magnetic fields, capacitance, inductance and electromagnetic waves. PREREQUISITE: MAT-210.