

Spring 1984

Center for Science and Engineering Schedule of Classes Spring-Summer 1984

Nova Southeastern University

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Schedule of Classes

Spring-Summer 1984 Schedule

Bachelor's Degree Programs

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

Master's Degree Programs

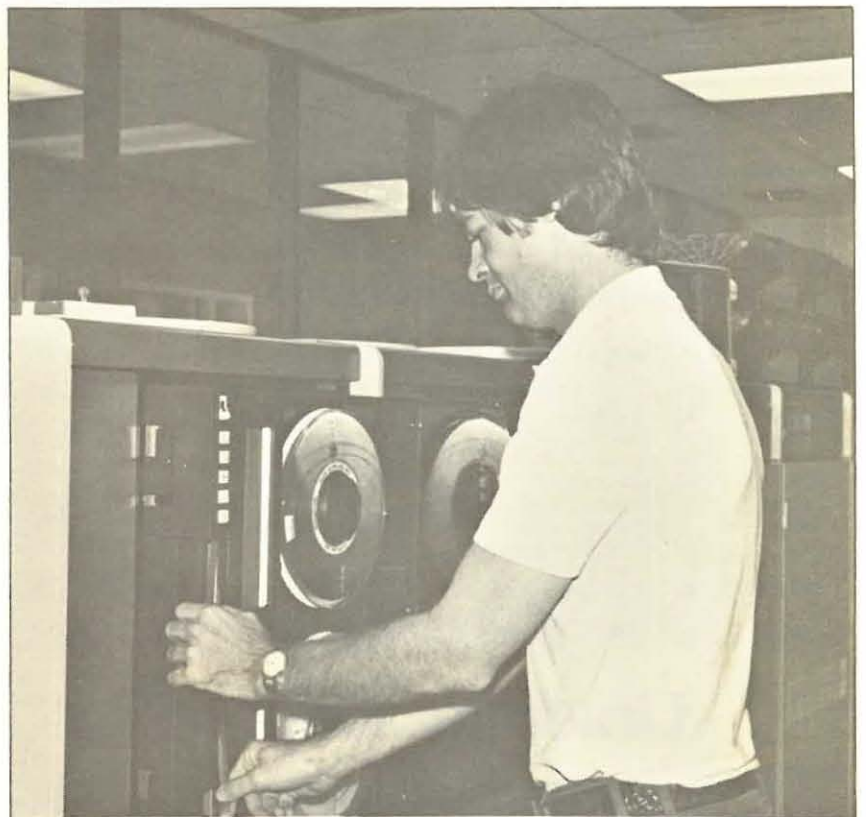
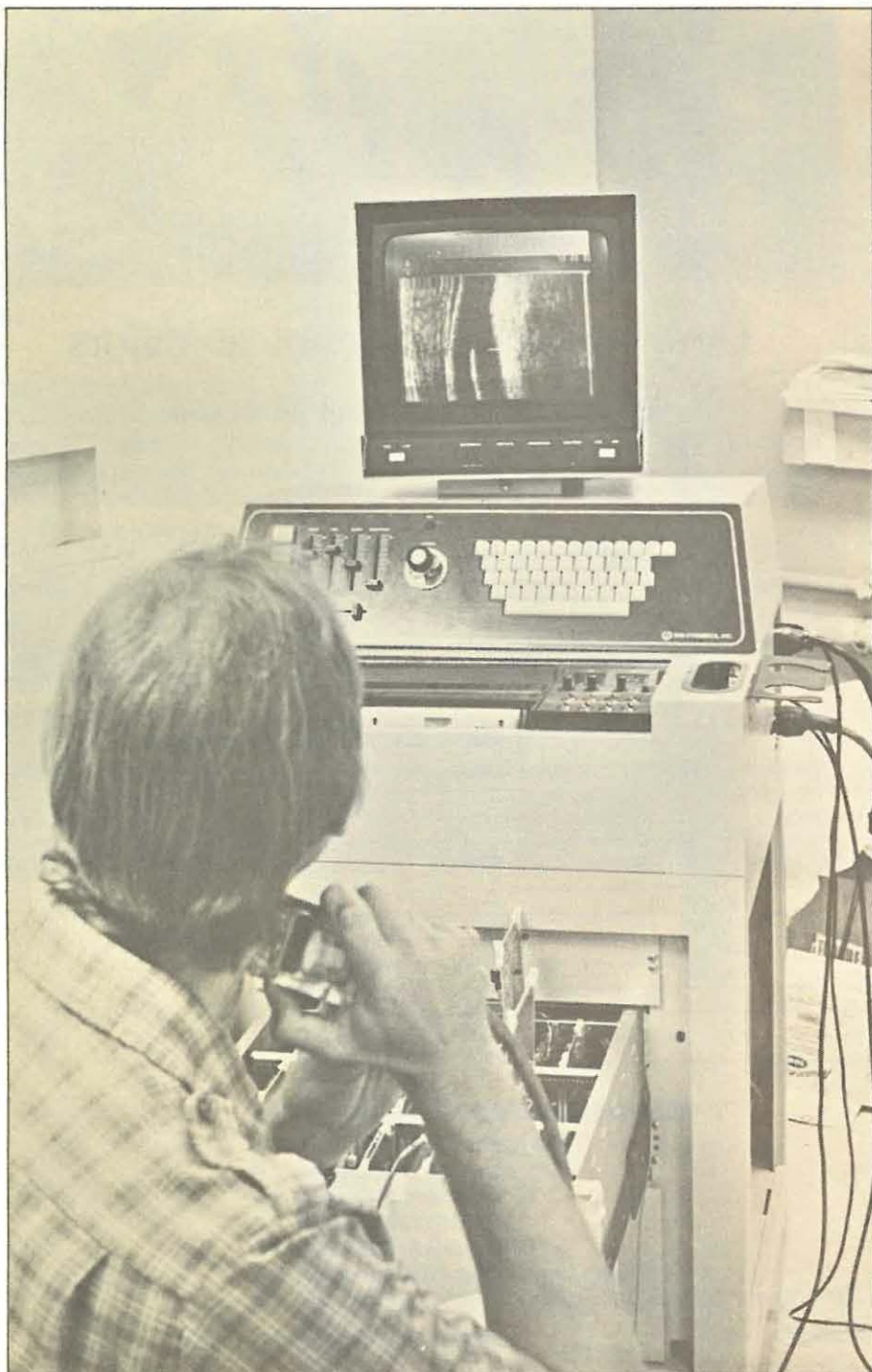
Computer Science
Engineering Management
Computer Management

Special Programs

 **Nova University**
CENTER FOR SCIENCE AND ENGINEERING

NON-PROFIT ORGANIZATION
U.S. POSTAGE
PAID
PERMIT NO. 886
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.-8:00 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.

For information call:

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

Undergraduate Courses

Beginning May 21, 1984 (9 Weeks)

COURSE #	SEC	COURSE TITLE	DAY	DATES	TIME	ROOM
EE-430	A	Fundamentals of Communication Systems	M	5/21-7/16	6-10:30 pm	P105
PHY-160	A	Physics III	M	5/21-7/16	6-10:30 pm	P209
CS-470	A	Information Systems Analysis and Design	M	5/21-7/16	6-10:30 pm	P208
CS-200	A	Computer Programming II	T	5/22-7/17	6-10:30 pm	P209
CS-340	A	Data Structures	T	5/22-7/17	6-10:30 pm	P208
CS-370	A	Software Design	T	5/22-7/17	6-10:30 pm	P105
EE-210	A	Networks I	T	5/22-7/17	6-10:30 pm	P106
CS-170	A	Computer Programming I	W	5/23-7/18	6-10:30 pm	P209
CS-335	A	Assembler and Assembly Language Programming	W	5/23-7/18	6-10:30 pm	P208
EE-400	A	Electronics III	W	5/23-7/18	6-10:30 pm	P105
MAT-220	A	Calculus II	W	5/23-7/18	6-10:30 pm	P106
CS-150	A	Introduction to Computer Organization	Th	5/24-7/19	6-10:30 pm	P106
CS-220	A	Business Oriented Language (Cobol)	Th	5/24-7/19	6-10:30 pm	P207
CS-460	A	Systems Programming	Th	5/24-7/19	6-10:30 pm	P208
EE-340	A	Electronics II	Th	5/24-7/19	6-10:30 pm	P143
MAT-150	A	Precalculus	Th	5/24-7/19	6-10:30 pm	P107

Last Day to Withdraw July 6, 1984

Beginning June 11, 1984 (9 Weeks)

COURSE #	SEC	COURSE TITLE	DAY	DATES	TIME	ROOM
CS-200	A	Computer Programming II	M	6/11-8/6	6-10:30 pm	P207
MAT-150	A	Precalculus	M	6/11-8/6	6-10:30 pm	P106
CS-210	A	Fortran	T	6/12-8/7	6-10:30 pm	P207
MAT-210	A	Calculus I	T	6/12-8/7	6-10:30 pm	P107
CS-330	A	Structured Programming (Pascal)	W	6/13-8/8	6-10:30 pm	P207
CS-170	A	Computer Programming I	Th	6/14-8/9	6-10:30 pm	P209
PHY-140	A	Physics I	Th	6/14-8/9	6-10:30 pm	P105
CS-170	B	Computer Programming I	T/Th	6/12-8/9	9-11:30 am	P207

Last Day to Withdraw July 27, 1984

Graduate Courses

Beginning May 21, 1984 (9 Weeks)

COURSE #	SEC	COURSE TITLE	DAY	DATES	TIME	ROOM
EGR-530	A	Fundamentals of Communication Systems	M	5/21-7/16	6-10:30 pm	P105
CS-570	A	Information Systems Analysis and Design	M	5/21-7/16	6-10:30 pm	P208
CS-560	A	Systems Programming	Th	5/24-7/19	6-10:30 pm	P208

Last Day to Withdraw July 6, 1984

Beginning July 16, 1984 (12 Weeks)

COURSE #	SEC	COURSE TITLE	DAY	DATES	TIME	ROOM
CS-631	A	Programming Languages	M	7/16-10/1	6-10:30 pm	P242
CS-651	A	Operating System Theory and Design	T	7/17-10/2	6-10:30 pm	P142
CS-686	A	Special Topics in Data Base Theory	W	7/18-10/3	6-10:30 pm	P242

Last Day to Withdraw August 10, 1984



Courses for Non-Technical Majors

Beginning April 28, 1984 (16 Weeks)

COURSE #	SEC	COURSE TITLE	DAY	DATES	TIME	ROOM
MAT-092	M	Foundations of Mathematics	M	4/30-8/20	6-8:00 pm	P146
MAT-101	M	General Mathematics	M	4/30-8/20	6-8:00 pm	P238

Beginning April 28, 1984 (8 Weeks)

COURSE #	SEC	COURSE TITLE	DAY	DATES	TIME	ROOM
CS-111	M	Computer Literacy	Th	5/3-6/21	6-10:00 pm	P213
CS-112	M	Intro. to Data Processing	W	5/2-6/20	6-10:00 pm	P214
MAT-102	M	Introductory Algebra	W	5/2-6/20	6-10:00 pm	P239
PHY-103	M	Introduction to Geology	T	5/1-6/19	6-10:00 pm	P129

Beginning June 23, 1984 (8 Weeks)

COURSE #	SEC	COURSE TITLE	DAY	DATES	TIME	ROOM
CS-111	M	Computer Literacy	M	7/2-8/20	6-10:00 pm	P213
MAT-102	M	Introductory Algebra	M	7/2-8/20	6-10:00 pm	P128
MAT-105	M	College Algebra	M	7/2-8/20	6-10:00 pm	P107
PHY-105	M	Introduction to Chemistry	Th	6/28-8/16	6-10:00 pm	P213

*Avoid Closed Classes
Register Early*

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				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				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	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	x		x	CS-335 Assemblers & Assembly Language Programming
			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	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		a			CS-420 Operating System Concepts
							CS-430 Simulation & Modeling
							CS-440 Microcomputers
		b		x	x		CS-450 Data Base Management Systems Design
		x		x		x	CS-460 System Programming
				a	x		CS-470 Information Systems Analysis and Design
					x		CS-475 EDP Audit and Control
		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	c						EE-400 Electronics III
x	c						EE-405 Networks III
x	c						EE-410 Electromagnetic Theory
x	c						EE-420 Field Transmission Lines
x	c						EE-430 Fundamentals of Communication Systems
x	c						EE-440 Energy Systems
x	c						EE-450 Control Systems
x	x						EE-460 Micro Processor Applications
x	x						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)	138 credits	460
B.S. Computer Engineering (CE)	120 credits	465
B.S. Computer Science (CS)	120 credits	463
B.S. Mathematics (MATH)	120 credits	462
B.S. Computer Systems (SYS)	120 credits	464
B.S. Computer Information Systems (CIS)	120 credits	466
B.S. Computer Systems/Technical Communications (SYS/TC)	120 credits	464
a = Choose 1 "a" course.	b = Choose 2 "b" courses.	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, 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)	\$150
Undergraduate application fee (non-refundable)	\$ 20
Undergraduate registration fee (non-refundable)	\$ 10
Undergraduate late registration fee	\$ 10
Undergraduate tuition fee (per credit)	\$125

Bulletin Board

Placement Test Dates

May 5	10 am-1 pm
May 17	6 pm-9 pm
June 2	10 am-1 pm
June 18	6 pm-9 pm
July 14	10 am-1 pm
July 24	6 pm-9 pm
August 4	10 am-1 pm
August 22	6 pm-9 pm

(call 475-7340 for location)

Fall Classes Start
August 27th



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

CS-460/560 Systems Programming A study of various system programming techniques, hardware-software interface, software controlled hardware. A comparison of several existing computer systems will be made. PREREQUISITE: CS-335, CS-340.

CS-470/570 Information Systems Analysis and Design Information processing systems, project planning, software packages. PREREQUISITE: CS-450.

CS-631 Programming Languages Introduction to data structures and data types, and understanding of the modern approach to structured programming will be developed. A comparative study of several high-level programming languages. Emphasis will be placed on how concepts are expressed in each of the major languages, such as FORTRAN, COBOL, PL/I, C, PASCAL, and ALGOL. PREREQUISITE: Consent of Center.

CS-651 OPERATING SYSTEMS THEORY AND DESIGN Analysis of computer operation systems with emphasis on structured design. Multiprogramming and multi-processing, real-time, time-sharing, networks, job control. Scheduling, synchronization and other forms of resource management; I/O programming, memory and file system management. PREREQUISITE: CS-520 Operating Systems Concepts.

CS-685 Special Project in Languages and Compiler Theory Special directed project will be carried out in the area of languages or compiler theory. PREREQUISITE: CS-639 Compiler Implementation

EE-210 Networks I Definitions of charge, current, voltage, resistance, capacitance and inductance. Ohm's law, Kirchhoff's laws, nodal analysis and mesh analysis. Principles of superposition, maximum power theorem, Thevenin's theorem and Norton's theorem. PREREQUISITE: PHY 150, MAT-210.

EE-340 Electronics II Analysis and design of single-stage and multi-stage amplifiers, difference amplifiers and operational amplifiers. Frequency response and other performance criteria with feedback. Oscillators. PREREQUISITE: EE-210, EE-310

EE-400 Electronics III Wave shaping, pulse and digital circuits, multi-vibrators, logic circuits. Emphasis on analysis and design. PREREQUISITE: EE-340, EE-405; MAT-305, MAT-310.

EE-430 Fundamentals of Communication Systems Fourier series and transforms, modulation systems, sampling, digital data transmission, noise, channel capacity, design and analysis of communication systems. PREREQUISITE: EE-405, EE-340 (Same as EGR-530).

EGR-530 Fundamentals of Communication Systems Fourier series and transforms, modulation systems, sampling, digital data transmission, noise, channel capacity, design and analysis of communication systems. PREREQUISITE: Networks III, Electronics II (same as EE-430)

MAT-092 Foundations of Mathematics A basic course which will prepare the student for college level mathematics courses. Students not achieving all of the required competencies will receive a grade of PR and may re-enroll. Credit does not count toward graduation.

MAT-101 General Mathematics Application of basic mathematical operations. Problem solving techniques. Introduction to basic algebraic concepts and graphs. Appropriate for non-math and non-science majors. PREREQUISITE: Placement examination requirement satisfied

MAT-102 Introductory Algebra A basic review of algebra including algebraic terminology, polynomials and applications. Appropriate for non-math and non-science majors. PREREQUISITE: Placement examination requirement satisfied or MAT-101

MAT-105 College Algebra (MAT-3002) Includes topics such as fundamental operations, functions and graphs, linear and quadratic equations, and conic sections. PREREQUISITE: Placement examination requirement satisfied or MAT-102

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-210 Calculus I Functions, limits, derivatives of algebraic functions. Introduction to derivatives of trigonometric functions, logarithmic functions, application of derivatives to physics problems, related rates and maximum/minimum problems, definite and indefinite integrals with applications. PREREQUISITE: MAT-150

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.

PHY-103 Introduction to Geology An introductory course that will provide an understanding of the earth's composition and structure, an explanation of the processes that affect the earth and the resulting features, a description of the physical evolution of the major mountains and oceans, a description of biological evolution in relation to ancient geologic environments, an analysis of earth's resources and implications for the future.

PHY-105 Introduction to Chemistry Non-laboratory course. Presents an introduction to the elementary principles of chemistry. A study of the structure of matter and the transformation it undergoes. Does not satisfy chemistry requirement for engineering majors.

PHY-140 Physics I Basic principles of mechanics including vectors, force, equilibrium, displacement, velocity, acceleration, mass. Newton's Laws, work energy, gravitation, momentum, rotational motion, mechanics of systems of particles and rigid bodies. PREREQUISITE: MAT-210.

PHY-160 Physics III Thermodynamics, entropy, wave motion and optics, temperature, heat and kinetic theory, reflection and refraction of light, interference and diffraction, polarization, radiation. PREREQUISITE: MAT-210.