
Academic Minors

A student at SUNYIT has the opportunity to enrich his or her education by obtaining an academic minor in an area of study different from the area of the academic major. SUNYIT offers minors in accounting; anthropology; computer and information science; communication and information design; computer information systems; criminal justice; finance; gerontology; health services management; mathematics; physics; psychology; quality engineering and system technology; science, technology & society; and sociology, to complement major programs of study in business, the technologies, and health-related fields and liberal arts disciplines. These minors enable a student to pursue in-depth education in a second discipline that supports and enhances the primary field of study.

Accounting Minor

The accounting program offers a minor for students in majors other than accounting. The accounting minor fits into the curricula of SUNYIT by providing students with the opportunity to acquire knowledge in an important professional discipline that can complement their major. The minor adds value to a degree because all organizations maintain accounting systems and require that their employees understand the financial implications of tactical and strategic decisions. In an increasingly competitive job market, accounting knowledge can play a consequential role in satisfying the needs of employers.

Program Description

Minimum Total Credit Hours: 18*

* A student must earn at least a C in every accounting course applied to the minor and at least 10 credits must be taken at SUNYIT.

NOTE: "Petition For An Academic Minor" forms are available at the School of Business office. Any changes to the following course requirements must be approved through an Academic Petition Form.

Course Requirements

ACC 201	Financial Accounting Principles
ACC 385	Intermediate Accounting I
ACC 310	Income Tax I
ACC 205	Managerial Accounting Problems OR
ACC 370	Cost Accounting

At Least 1 Elective From List:

ACC 311	Income Tax II
ACC 320	Fund Accounting
ACC 321	Financial Planning and Controls for Not-for-Profit Organizations
ACC 386	Intermediate Accounting II
ACC 430	Accounting Controls, Not-For-Profit Organizations
ACC 450	Auditing
ACC 471	Advanced Management Accounting
ACC 475	Advanced Accounting Problems
ACC 491	Independent Study

Prerequisite Education

No prerequisites are required for a minor in accounting.

Anthropology Minor

The anthropology program offers a minor in anthropology. The minor is of value to students who wish to integrate interests in a wide range of humanist concerns with the cross-cultural perspective and analytic framework provided by anthropology.

Total credit hours required for minor: 17

A student desiring a minor in anthropology must register with the program and take a minimum of 17 credits of anthropology courses, at least 8 of which must be taken at SUNYIT. The first course should be ANT 301 or an introductory anthropology course. To promote coherence, additional courses must be selected in consultation with an anthropology advisor.

ANT 301 - General Anthropology or Equivalent

Additional Courses:

- ANT 320 - Social Policy
- ANT 321 - Distinction: Race, Class and Gender
- ANT 371 - People and Systems: Cultural Perspectives on Information Practice
- ANT 382 - Cultures, Health and Healing
- ANT 391 - Selected Topics in Anthropology
- ANT 460 - Ethnography
- ANT 491 - Independent Study (Variable 1-4)

Computer & Information Science Minor

The minor in Computer & Information Science is a valuable choice for students in all technical disciplines as well as for students in management, social sciences, and mathematics. The importance of computer and information science is increasing in all organizations and businesses. Use of ever-changing hardware and software systems continue to permeate research laboratories and offices throughout the world. In a competitive job market, an understanding of the computer and information science field can play a significant role in satisfying conditions for employment.

Total credit hours required for minor: 20.

Required courses (12 Credits)

- MAT 115 - Finite Mathematics for Computer Science
- CS 240 - Data Structures & Algorithms
- CS 249 - Object-Oriented Programming

Elective courses (at least 8 Credits)

- CS 220 - Computer Organization
- CS 330 - Operating Systems and Networking
- CS 350 - Information and Knowledge Management
- CS 370 - Software Engineering

No more than eight credits may be applied to both the Computer & Information Science and Computer & Information Systems minors. At least 12 credits must be taken in residence at SUNY IT. A maximum of two courses taken at other institutions may be applied to the minor. Computer Information Systems majors may not use Computer Science courses to fulfill both the upper division elective requirement for the major and the elective course requirement for the minor.

Computer Information Systems Minor

The minor in Computer & Information Systems is a valuable choice for students in all technical disciplines as well as for students in management, social sciences, and mathematics. Computer systems are essential to the successful operation of all organizations and businesses. Advances in hardware and software continue to permeate research laboratories and offices throughout the world. In an increasingly competitive job market, a general understanding of computer information systems can play a significant role in satisfying conditions for employment.

Total credit hours required for minor: 20.

Required courses (12 Credits)

- MAT 115 - Finite Mathematics for Computer Science
- CS 108 - Computing Fundamentals
- CS 240 - Data Structures & Algorithms

Elective courses (at least 8 Credits)

- IS 310 - Hardware and Network Infrastructure
- IS 320 - Systems Analysis and Design
- IS 325 - Database Management Systems

No more than eight credits may be applied to both the Computer & Information Systems and Computer & Information Science minors. At least 12 credits must be taken in residence at SUNY IT. A maximum of two courses taken at other institutions may be applied to the minor.

Criminal Justice Minor

A minor in Criminal Justice is highly desirable for students wishing to add a criminal justice focus to a more traditional discipline within Arts & Sciences (such as Psychology, Sociology, or Communication), as well as to students within one of SUNYIT's professional programs (such as Nursing, Computer and Information Sciences, or Business) who are looking to augment their skills with a foundation in today's market and society.

A. General Requirements

A student desiring a minor in Criminal Justice must register with the program and take a minimum of 17 credits of Criminal Justice courses, at least 8 of which must be taken at the Institute of Technology.

B. Specific Requirements

CJ 101 (Introduction to Criminal Justice)
 CJ 310 (Explaining Crime)
 CJ 332 (Research Methods in Criminal Justice)
 Plus 3 electives (at least one of which must be at the 400-level).

It is highly recommended that these courses be selected in coordination with a program advisor to ensure the best fit with the student's interests and major program of study.

Students who have taken an equivalent research methods course may petition to replace CJ 332 with an additional elective.

Finance Minor

The minor in finance is designed to integrate previous business coursework with financial decision-making as a specific function within an organization or to an individual. The minor integrates concepts from economics, accounting and a number of other areas. Many students approaching the field of finance might wonder what opportunities exist. For those who develop the necessary skills and viewpoints, jobs include corporate financial officer, banker, stockbroker, financial analyst, portfolio manager, investment banker, financial consultant, or personal financial planner. The minor in finance is designed to help prepare the student for entry into these fields or add value to their major by giving each student a deeper exposure to the finance function.

Program Description

Minimum Total Credit Hours: 18

A student desiring a minor in finance must register for the program within the School of Business. The first course taken shall be FIN 302, Financial Management Principles (prerequisite ACC 201 or equivalent, Financial Accounting). Course sequencing should be done in consultation with an academic advisor.

Minor Course Requirements:

ACC 201	Financial Accounting	(3-4)
FIN 302	Financial Management Principles	(3-4)
FIN 332	Fundamentals of Investments	(4)
FIN 411	Financial Management Problems	(4)
		Total 14-16

Elective Courses (one):

FIN 341	Financial Institutions	(4)
FIN 343	Personal Finance	(4)
ECO 330	Economics of Aging	(4)
ECO 450	Money & Banking	(4)
ECO 420	Public Finance	(4)
		Total 4

At least 12 credits must be taken at SUNYIT. Any course substitutions must gain prior approval through an academic petition.

Health Information Management Minor (18 credit hours*)

The minor in health information management is a valuable choice for students in nursing, health services management, computer and information science, computer and information systems, psychology, sociology, or any technical field. According to the American Health Information Management Association, health information management plays a critical role in maintaining, collecting, and analyzing data that doctors, nurses and other healthcare providers rely on to deliver quality healthcare. Health information management involves managing patient health information and medical records, administering computer information systems and coding the diagnoses and procedures for healthcare services provided to patients.

Required Courses from Entry-Level Sequence (6 credits)

	Credits
HIM 100 Introduction to the Health Information Management Field	3
HIM 111 Medical Terminology	3

Elective Courses from Entry-Level Sequence (3 credits)

HIM 212 Pathophysiology for Health Information Management	3
HIM 220 Data Analysis for Health Information Management	3

Electives from Advanced Courses (9 credit hours must be chosen from the courses in the list)

HIM 305 Inpatient Coding and Classification	3
HIM 306 Outpatient Coding and Classification	3
HIM 400 Nonhospital Health Information Management Systems**	2
HIM 401 Systems for the Evaluation and Improvement of Health Care	3
HIM 435 Healthcare Management/Medical Information Systems	3
HIM 440 Electronic Health Records	3
HIM 490 Selected Topics in Health Information Management	1-4
HIM 494 Specialty Rotation**	1

*At least eight credit hours must be taken at SUNYIT. At least eight credit hours must not be required courses in the student's major. The student must maintain a minimum cumulative grade point average of 2.0 (average of "C") in the minor.

**Corequisites. Courses must be taken at the same time.

Health Services Management Minor

The health services management program offers a minor for students in other disciplines. The minor is intended to provide the student with substantial background to this complex and increasingly significant field. Depending on the student's major, the minor in health services management may be of benefit in seeking work or enabling them to address health care issues in their current or future employment.

Courses	Credit Hour Requirements	SUNYIT Reference
Economics of Health Care	3	HSM 405
Health Care Delivery in the US	3	HSM 201
Intro to Quantitative Methods in HSM	3	HSM 300
Health Care and the Law	3	HSM 309
Management for the Health Professions	3	HSM 311
Introduction to Epidemiology	3	HSM 401
Financial Mgmt for HCO	3	HSM 435
Total Credits Required	21	

Human Resources Management Minor

The human resources management function includes a variety of activities critical to the success of any organization. Key among them is deciding what staffing needs you have and whether to use independent contractors or hire employees to fill those needs, recruiting and training the best employees, ensuring they are high performers, dealing with performance issues, and ensuring your personnel and management practices conform to ethical standards. The human resources management minor offers the student the opportunity to expand his/her background in these essential decision areas.

Program Description:

1. Minimum credit hours: 17
2. At least 12 credit hours must be taken at SUNYIT.
3. Any course substitutions must gain prior approval from the School of Business via an academic petition.
4. A student desiring a human resources management minor must apply through the School of Business.

Course Requirements

MGT 318 Human Resources Management
 MGT 320 Appraisal, Motivation and Compensation
 MGT 415 Industrial and Labor Relations
 MGT 425 Human Resource Selection and Staffing
 BUS 420 Employee Benefits

Marketing Minor

Selecting a marketing minor will prepare a student for a career in a business or non-profit organization. The primary challenge to a marketing professional is to create and retain profitable customers through activities such as market research, competitive analysis, determination of market potential, market segmentation, and target marketing. This information is used to develop the marketing strategy mix, marketing plans, marketing audits, and other strategic policies. The evolution of the global economy invigorated through the use of modern technology demands an ever-increasing attention to the marketing function as an integral part of the total business environment. Revenue enhancement, social and ethical responsibility, cost controls, and stockholder wealth maximization are all driven by the strategies developed within the marketing function.

Program Description

1. Minimum credit hours: 17
2. At least 12 credits must be taken at SUNYIT.
3. Any course substitutions must gain prior approval from the School of Business via an academic petition.
4. A student desiring a marketing minor must apply through the School of Business.

Course Requirements or Equivalents:

MKT 301 Marketing Principles
 MKT 312 Marketing Management Problems
 MKT 321 Advertising
 MKT 465 Consumer Behavior

Plus one of the following:

MKT 345 Retail Management
 MKT 410 Market Based Management
 MKT 470 Marketing Research

Mathematics Minor

The minor in mathematics is valuable for students who wish to pursue studies in mathematics, computer science, physics or engineering or who wish to be more competitive in the job market.

Total credit hours required for minor: 20

A.	Required Courses	Credits
	MAT 151 - Calculus I (Differential Calculus) *	4
	MAT 152 - Calculus II (Integral Calculus) *	4
B.	One Course from the following:	4
	MAT 225 - Applied Statistical Analysis	
	MAT 230 - Differential Equations	
	MAT 340 - Linear Algebra	
C.	Two Courses from the following:	8
	MAT 253 - Calculus III (Multivariate Calculus)	
	MAT 335 - Mathematical Modeling	
	† MAT 345 - Introduction to Graph Theory	
	MAT 370 - Applied Probability	
	† MAT 380 - Abstract Mathematics: An Introduction	
	† MAT 381 - Modern Algebra	
	MAT 401 - Series and Boundary Value Problems	
	MAT 413 - Discrete Mathematics for Computer Science	
	† MAT 420 - Complex Variables and Their Application	
	† MAT 423 - Vector and Tensor Calculus	
	† MAT 425 - Real Analysis	
	† MAT 430 - Number Theory and Its Applications	
	† MAT 440 - Linear Algebra II	
	† MAT 450 - Partial Differential Equations	

Specific selections of courses must be worked out with the mathematics faculty. The equivalent of up to three of the above courses that contribute to the minor can be used as transfer credit.

* MAT 121 may be substituted

* MAT 122 may be substituted

† Student should register for this course only after a consultation with a mathematics faculty teaching the course.

Physics Minor

The minor in physics would be useful for students who wish to pursue studies in physics or engineering, or who wish to be more competitive in the job market.

Total credit hours required for minor: 20

A.	Required courses:	Credits
	PHY 201 - Calculus Based Physics I	4
	PHY 202 - Calculus Based Physics II	4
B.	Three courses from the following options:	12
	1. PHY 203 - Calculus Based Physics III	
	2. PHY 325 - Geometrical Optics	
	3. PHY 326 - Physical Optics	
	4. PHY 401 - Electromagnetism	
	5. PHY 420 - Intermediate Mechanics	
	6. PHY 415 - Introductory Quantum Mechanics	
	7. PHY 490 - Special Topics in Physics	
	8. PHY 491 - Independent Study	
	9. A physics course approved by the Science Department	

A "C" grade or higher is required for each course of the minor.

The equivalent of up to three courses that contribute to the minor can be applied as transfer credit

Communication and Information Design Minor

The communication and information design program offers a minor in communication and information design. The minor is valuable to students pursuing studies in various disciplines, such as mathematics, engineering, computer science, business, or psychology, who wish to enhance their communication skills and make themselves more marketable.

Total credit hours required for minor: 20.

Students wishing to earn a minor in CID must complete:

- A. Required courses (8 credits)
COM 306 or COM 350 or COM 400
COM 320
- B. Electives (12 credits)
With guidance and prior approval from a faculty advisor, students pick three courses with a COM prefix.

Psychology Minor

The psychology program offers a minor for students in other disciplines. An understanding of psychology underlies all human activities. Consequently courses dealing, for instance, with human motivation, individual differences, childhood and aging, prejudice, stress, cognition, human/machine interaction, and learning would add depth to any major. A psychology minor might be especially useful to students planning careers in business, human services, criminology, and health sciences.

The course requirements for the minor are a minimum of 18 credits, eight of which have to be completed at SUNYIT. An introductory course in psychology does not count toward the 18 credits. Students are required to take History and Systems of Psychology (PSY 305), two intermediate courses and two advanced courses.

Intermediate Courses

Learning & Motivation - PSY 262
Abnormal Psychology - PSY 222
Psychology of Personality - PSY 331
Adult Development & Aging - PSY 218
Perception - PSY 360
Death, Dying & Bereavement - PSY 273
Psychology of Gender - PSY 325
Educational Psychology - PSY 365
Engineering Psychology
& Human Performance - PSY 390
Health Psychology - PSY 377
Social Psychology - PSY 242
Industrial & Organizational Psych. - PSY 352
Child & Adolescent Development - PSY 216

Advanced Courses

Group Dynamics - PSY 445
Psychological Testing - PSY 470
Cognitive Psychology - PSY 425
Principles of Counseling - PSY 477
Applied Social Psychology - PSY 444
Aggression & Nonviolence - PSY 415
Neuropsychology - PSY 460
Advanced Health Psychology - PSY 555

Quality Engineering and System Technology Minor

For American Industry to remain competitive in a global economy, increasing attention needs to be given to issues of quality control. The purpose of the minor is to round out the student's background by providing exposure to the latest techniques in manufacturing and quality assurance technology. When combined with majors such as mechanical or electrical engineering technology, telecommunications, computer science or business, the minor in quality engineering and system technology should enhance the student's prospect for employment.

Total credit hours required for minor: 20

- A. Required Courses (8 credits)
- ITC 373 - Statistical Quality Control
 - MAT/STA 325 - Applied Statistical Analysis
- B. Advanced Courses (at least 12 credits, with a minimum of 4 credits in ITC 400-level courses)
- MAT 370 - Applied Probability
 - ITC 390 - ISO9000 and Total Quality Assurance
 - ITC 391 - ISO1400 Auditing and Implementation
 - ITC 392 - ISO9000 & QS9000: Implementing and Auditing
 - ITC 411 - Manufacturing Cost Estimation
 - ITC 475 - Economic Analysis in Technology
 - ITC 483 - Quality Improvement
 - ITC 485 - Concurrent Engineering and Design for Manufacturing
 - ITC 486 - Reliability for Design and Production

Specific selections of courses must be worked out with the Industrial Engineering Technology faculty. At least 12 credits must be taken in residence at SUNYIT. A maximum of two courses taken at other institutions may be applied to the minor.

Science, Technology, and Society Minor

Rapid developments in science and technology have stimulated a variety of concerns about the impacts of science and technology, as well as interest in the dissemination of science and technology. As a result, developments in science and technology have created a need for people who possess the skills to serve as liaisons among the different communities affected by these concerns. Such individuals would possess an understanding of the relationships among science, technology, and society that would enable them to serve as liaisons between 1) different communities of professionals (e.g., technologists and politicians); and 2) experts and various groups among the lay public. Students who possess such skills can be competitive for jobs in government agencies, businesses, private consulting companies, and labor unions. The STS minor should be of interest to majors in computer science, business, nursing, and the engineering technologies, and might also be of interest to majors in arts and sciences.

Total credit hours required for minor: 17

- A. General Requirements
- the STS minor requires completion of at least 17 credit hours in the STS program, at least 8 of which must be taken at SUNYIT.
 - a strong background in general science or technology courses and additional more specialized coursework. A basic understand-

ing of science and technology is essential to enable students to understand basic explanations of science and technology incorporated into many of the texts used in the STS courses.

For many of the students who minor in STS, their major will encompass scientific or technological competence.

Students who are not majoring in a natural science or a technological discipline will be required to take at least 6 **additional credit hours** in a natural science or technological discipline beyond the general education requirement. They can count these two courses as electives to satisfy the requirements of the STS minor, provided they also take at least 1 course from the list of electives (e.g., to satisfy SUNYIT's general education requirements or as part of their program of study in their major).

- B. Specific Requirements
- Required courses:
- STS 300 - Introduction to Science, Technology, and Society
 - STS 350 - Science and Technology Transfer and Assessment
 - STS 360 - Science, Technology, and Politics
 - STS 490 may be substituted for STS 350 or STS 360
 - Electives - Choose two more courses in consultation with an STS faculty member.
- Among the offerings are:
- ANT 371 - People and Systems
 - BUS 451 - Issues in Business and Society
 - SOC 360 - Sociology of Work
 - PHI 350 - Technology and Ethics
 - HIS 306, 307 - History of Science
 - NUR 344 - Ethical Issues in Nursing
 - CSC 310 - Computers and Society
 - POS 435 - American Politics and Communication Technology
 - TEL 325 - Telecommunications and Social Issues
 - TEL 490 - Telecommunications Policy/Issues
 - ENV 300 - Ecology
- and other courses approved by the STS advisor

Sociology Minor

A minor in sociology is of value to students who wish to integrate interests in business, nursing, the technologies and computer science, or other arts and sciences disciplines with the broad conceptual and analytical framework provided by sociology.

A. General Requirements

A student desiring a minor in sociology must register with the program and take a minimum of 17 credits of sociology courses, at least 8 of which must be taken at the Institute of Technology.

B. Specific Requirements

1. SOC 100, 110, or an introductory sociology course.
2. a minimum of two courses at the 200-level or above (at least one of these must be at the 400-level).

C. Additional courses, to promote coherence, must be selected in consultation with a sociology advisor.

Telecommunications Minor

The pervasive influence of data and communications networks on our everyday lives makes the minor in Telecommunications a smart choice for all Engineering and Engineering Technology students. Even those in fields such as Business and Nursing will benefit from a better understanding of today's networks and how they affect our industries, workplaces, and lives.

The Telecommunications minor provides a broad understanding of information and communications networks and the rapid evolution currently underway. The core courses cover the technology, systems, and applications of both voice and data networks. The wide range of electives enables a customized program to be developed that serves the need of various academic majors. For example, students in engineering technology majors are encouraged to take TEL 310 and TEL 400 as electives. And students majoring in Business may benefit from taking TEL 330 and TEL 381 as electives.

A minimum of 8 credits making up the requirements for the minor must be taken at SUNYIT. Total credit hours required for minor: 19

Required Courses (11 Credits):

- TEL 100 Introduction to Telecommunications
- TEL 205 Basic Data Communications
- TEL 201 Basic Voice Communications

Elective Courses (at least 8 Credits):

- TEL 310 Telecommunications Transmission Technology
- TEL 316 Data Network Design
- TEL 330 International Telecommunications
- TEL 340 Network Standards & Protocols
- TEL 381 Introduction to Information Assurance
- TEL 382 Information Assurance Policies and Disaster Recovery
- TEL 383 Network Firewalls
- TEL 384 Network Intrusion Detection
- TEL 400 Wireless Telecommunications
- TEL 416 Digital and Internet Telephony
- TEL 430 Local Area Networks
- TEL 493 Special Topics in Telecommunications

