

DEPARTMENT of COMPUTING

College of Business & Technology

EAST TENNESSEE STATE UNIVERSITY

Advisement Booklet 2021 – 2022

Department of Computing Undergraduate Advisement

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**Contact information is subject to change. For the most up to date information and a full listing of faculty and staff, please visit <u>https://www.etsu.edu/cbat/computing/faculty_and_staff/</u>.

Degree Works

DEGREE NOW, NOT LATER

- **Degree Works** is an academic advising and degree audit tool that helps advisors and students track their degree progress in real-time!
- **Fully integrated with GoldLink**, Degree Works gives students an up-to-date, play-by-play of courses taken and courses needed to help them plan and complete their degree(s) on time!
- Benefits and Features of Degree Works
 - Provides real-time degree audit, history and information and allows for improved course and degree planning
 - Provides planning scenarios if you change majors, concentrations or plans
 - Improves Advisor communication for courses and requirements
 - GPA calculator See how final grades may affect the overall GPA
 - Still Need Courses- Hyperlinks to information about the course, section and scheduling information
- "What If..." scenarios, allow students to experiment with changing majors or degree plans.
- Using the **Plans** tab, a student or advisor can create an academic plan either from scratch or using a template for the course of study. Student Education Plan in Degree Works provides 4 different views:
 - Calendar view compact view of the 4-year plan
 - Audit view side by side view of your audit & 4-year plan
 - Edit view changes to the plan are made in this view
 - **Note view** Allows you to print notes attached to a class
- Find your Advisor in Degree Works using the "Advisor Contact List." This is a hyperlink to all advisors' information.
- Use the Progress bars to keep up with your degree progress. The requirements bar includes course requirements, non-course requirements along with graduation requirements. The credit bar tracks the percentage of credits completed towards the 124 degree credit requirement.
- Degree Works performs best when using browsers other than Microsoft Edge and IE 9
- You will not be cleared for graduation until completion of everything in your Degree Works.

International Student Seminar – CBAT 4107/5107

The College of Business and Technology (CBAT) offers this course to help orient, develop, and educate international students to aid their assimilation and acculturation, enhance their academic performance, improve their professional skills, and enhance their integration into the university community. The course provides international students with the knowledge and skills to engage successfully in their coursework, the College, the university community, the American Culture, and their chosen professions. The goals of the course are to: improve international students' knowledge and skills to enhance their academic success, clarify expectations for academic tasks and professional behavior, address challenges unique to international students, and build a strong international student community within the College. Course topics include: academic expectations and ensuring academic integrity, how American academic and professional expectations differ from the students' home culture, written and oral communications skills, teamwork skills, cultural intelligence, and cross-cultural competency and skills development.

All students pursuing a degree from the College of Business and Technology on an international student visa (J-1 or F-1) are required to enroll in CBAT4107/5107 for their first semester ETSU and each subsequent semester until they have successfully completed 4 credit hours of International Student Seminar (CBAT 4107/CBAT 5107) as part of their undergraduate or graduate program.

If you have questions about the International Student Seminar, please contact Dr. Karen Ann Tarnoff at 423-429-5299, <u>tarnoffk@etsu.edu</u> or <u>CBATInternationl@etsu.edu</u>.

Bachelor of Science in Computing with concentrations in

- Cybersecurity and Modern Networks (CSMN)
- Computer Science (CS)
- Information Systems (IS)
- Information Technology (IT)

The four concentrations share a common core of courses that provides a strong background in programming, design, computer organization, database management, networking, security, and software engineering. All concentrations require a course in probability and statistics and in discrete mathematics. Concentrations emphasize practical skills needed to succeed in careers in computing, including practical skills for careers in computing, including technical skills, written and oral communication, project management, and teamwork. Graduates work in a wide variety of industries throughout the region, nation, and world at highly competitive salaries. Many graduates also complete advance degrees, including the department's graduate program.

CYBERSECURITY AND MODERN NETWORKS (CSMN) – The CSMN concentration supplements the core curriculum with courses in secure software development and systems deployment; cloud, wireless, and mobile computing; and sensor-based (Internet of Things) computing. This concentration is designed for students who wish to pursue careers in computer security and in networking-enabled application development. This concentration is also recommended for those who plan to do graduate work in cybersecurity.

Admission to the Cybersecurity and Modern Networking concentration is by Departmental approval only. Students interested in the CSMN program are advised to enter the Computer Science concentration their freshman year. Students may apply for entrance to the CSMN concentration after having completed the foundational courses (more information on page 4).

COMPUTER SCIENCE (CS) - The CS concentration supplements the core curriculum with courses in data structures, algorithms, computer architecture, and operating systems. Students apply their knowledge to the development of systems-level software programming, including real-time graphics simulations, distributed systems, and operating systems. This concentration is also recommended for those who plan to do graduate work in computer science.

INFORMATION SYSTEMS (IS) - The IS concentration supplements the core curriculum with courses in Enterprise Resource Planning (ERP) and enterprise system implementation and programming. Students select an emphasis in accountancy or management, and explore the application of information systems in business process definition and execution. This concentration is designed for students who wish to apply their knowledge in enterprise information systems, business-oriented computing or within their emphasis area. This concentration is recommended for those who plan to do graduate work in information systems or business administration.

INFORMATION TECHNOLOGY (IT) - The IT concentration supplements the core curriculum with courses in web development, database and system administration, and human computer interaction. This concentration is designed for students who wish to apply their knowledge in these fields and for those who plan to do graduate work in information technology.

The undergraduate Computer Science, Information Systems, and Information Technology programs at ETSU are accredited by the Computing Accreditation Commission (CAC) of ABET, http://www.abet.org, an accrediting body recognized by the Council for Higher Education Accreditation (CHEA).

The Cybersecurity and Modern Networks concentration will be eligible for initial ABET review after the program has graduates.

Cybersecurity and Modern Networks (CSMN) Admission Policy

Admission to the Cybersecurity and Modern Networking concentration is by Departmental approval only.

Students interested in the CSMN program are advised to enter the Computer Science concentration their first year. Students may apply for entrance to the CSMN concentration after having completed the following foundational classes:

- CSCI 1250 Introduction to Computer Science I
- □ CSCI 1260 Introduction to Computer Science II
- □ CSCI 1900 Math for Computer Science
- □ CSCI 2150 Computer Organization
- CSCI 2210 Data Structures
- □ CSCI 3400 Networking Fundamentals
- MATH 1910 Calculus I
- MATH 2050 Foundations of Probability and Statistics Calculus Based

As a part of the application process, students must commit to the cohort's requirements regarding class scheduling and present a statement of academic/career goals. A faculty committee will evaluate applicants based on their academic work to date, particularly in the foundation course set, and an assessment of their potential to achieve success in the program.

One cohort will be admitted each fall. To maintain good standing in the cohort, students must take and successfully complete all upper level program courses in one attempt. Students failing to do so will face extended time to graduate. In this situation, students may wish to transfer to another Computing concentration.

Any student not admitted to CSMN can work with their Advisor to complete the CS Concentration instead. This would still allow the student to graduate within 4 years.

Graduation Requirements

In order to complete the degree, a computing major must:

- Complete all courses with an overall GPA of 2.5 or better
- Complete all computing courses with a GPA of 2.5 or better
- Complete <u>CSCI 1250</u> and <u>CSCI 1260</u> with a grade of "B-" or better
- Complete all other major requirements with a grade of "C-" or better (this includes computing core, concentration courses, and all other courses from other departments that satisfy major requirements)

Complete 124 credit hours Including:

- ETSU General Education Requirements
- o Major Requirements
- Any Additional Electives
- Complete the California Critical Thinking Skills Test (CCTST)
- Complete the Major Field Test

Students must complete every required course with the required final grade in at most three attempts. For the purpose of determining progress towards degree completion, a student's grade of record in a given course shall be the grade that that was earned in that student's latest attempt at that course -- rather than any grades earned before this latest attempt. An attempt is defined as registering for and remaining enrolled in a course after the second week of the semester. Students should refer to the Academic Calendar at https://www.etsu.edu/etsu/academicdates.aspx for specific dates.

Computing majors and minors will be required to change their program of study if these requirements cannot be met.

No Minor is required

2021 – 2022 Gen. Ed. Requirements for Computing Majors (41-42 credit hours)

Writing: 6 credit (Grade C or better for both)

- ENGL 1010 Critical Reading & Exp. Writing (3)
- □ ENGL 1020 Critical Thinking & Argument (3)

Oral Communication: 3 credits

- COMM 2025 Fundamentals of Comm. (3)
- □ COMM 2045 Public Speaking (3)
- □ COMM 2055 Argumentation & Debate (3)

Literature: 3 credits (select one)

- □ ENGL 2030 Literary Heritage (3)
- □ ENGL 2110 American Literature to 1865 (3)
- ENGL 2120 American Literature since 1865 (3)
- ENGL 2210 British Literature to 1785 (3)
- ENGL 2220 British Literature since 1785 (3)
- □ ENGL 2330 World Literature (3)
- □ ENGL 2430 European Literature (3)

Fine Arts: 3 credits (select one)

- □ ARTA 1030 Art Appreciation (3 credits)
- □ ARTH 2010 Art History Survey I (3)
- ARTH 2010 Art History Survey II (3)
- BLUE 2150 American Roots Music (3)
- DANC 1500 Introduction to Dance (3)
- HUMT 2310 Arts & Ideas I (3)
- HUMT 2320 Arts & Ideas II (3)
- □ MUSC 1030 Introduction to Music (3)
- □ MUSC 1035 History of Jazz (3)
- □ THEA 1030 Introduction to Theater (3)

Humanities: 3 credits (select one)

- ENGL 3150 Lit., Ethics, and Values (3)
- □ ENGL 3280 Mythology (3)
- ENTC 3020 Technology and Society (3)
- □ HIST 1110 World History to 1500 (3)
- □ HIST 1120 World History since 1500 (3)
- □ PHIL 1030 Introduction to Philosophy (3)
- □ PHIL 2020 Introduction to Ethics (3)
- □ PHIL 2040 Philosophy as Conversation (3)
- □ PHIL 2640 Science in the Modern World (3)
- RELI 2210 Intro. to the Study of Religion (3)

History: 6 credits

- □ HIST 2010 US to 1877 (3)
- □ HIST 2020 U.S. Since 1877 (3)

Mathematics: 3-4 credits

- MATH 1530 Prob. and Stats.- Non-Calculus (3)
 *IT and IS Students
- MATH 1910 Calculus I (4)
 *CS and CSMN Students

Social/Behavioral Sciences: 6 credits (select two)

- ANTH 1240 Intro. to Cultural Anthropology (3)
- ECON 2220 Principles of Microeconomics (3)
- ECON 1050 Economics & Society (3) <u>OR</u>
 ECON 2210 Principles of Macroeconomics (3)
 *IS Concentration Choose ECON 2210
- GEOG 1012 Intro. to Cultural Geography (3)
- □ HDAL 2310 Developmental Psychology (3)
- □ HDAL 2340 Understanding Cultural Div. (3)
- □ MCOM 1030 Media Literacy (3)
- □ PSCI 1110 Intro. to Political Science (3)
- □ PSCI 1120 Intro. to American Government (3)
- □ PSYC 1310 Introduction to Psychology (3)
- □ SOCI 1020 Introduction to Sociology (3)
- □ SOCI 2020 Social Problems (3)
- □ SRVL 1020 Intro. to Service Learning (3)
- □ WMST 2010 Intro. to Women's Studies (3)

Natural Sciences: 8 credits of Natural Science excluding those for non-science majors:

- □ ASTR 1010 Astronomy I (4)
- □ ASTR 1020 Astronomy II (4)
- □ ASTR 1035 Life in the Universe (4)
- BIOL 1110 Biology for Science Majors I (4)
 BIOL 1111 Biology for Science Majors I Lab (0)
- BIOL 1120 Biology for Science Majors II (4)
 BIOL 1121 Biology for Science Majors II Lab (0)
- CHEM 1110 General Chemistry I (4)
 CHEM 1111 General Chemistry I Lab (0)
- CHEM 1120 General Chemistry II (4)
 CHEM 1121 General Chemistry I Lab (0)
- □ GEOS 1040 Geosciences: Earth & Society (3) GEOS 1041 Geosciences: Earth & Society Lab (1)
- □ GEOS 1050 Geosciences: Earth Thru Time (3) GEOS 1051 Geosciences: Earth Thru Time Lab (1)
- HSCI 2010 Anatomy and Physiology I (4)
 HSCI 2011 Anatomy and Physiology I Lab (0)
- HSCI 2020 Anatomy and Physiology II (4)
 HSCI 2021 Anatomy and Physiology II Lab (0)
- PHYS 2010 Gen. Physics I-Noncalculus (3)
 PHYS 2011 Gen. Physics I Lab-Noncalculus (1)
- PHYS 2020 Gen. Physics II-Noncalculus (3)
 PHYS 2021 Gen. Physics II Lab-Noncalculus (1)
- □ PHYS 2110 Technical Physics I-Calculus (5)
- □ PHYS 2120 Technical Physics II-Calculus (5)

**These are the only sciences accepted for Computing Majors.

Catalog Year 2021-2022 Cybersecurity and Modern Networks (CSMN) **Suggested Course Sequence**



· Not all prerequisites are represented in this chart

Course prerequisites are on page 8 in booklet

· Shaded courses are part of the Computing Core

· Semesters may vary depending on availability & student progress

Catalog Year 2021-2022 **Computer Science (CS) Suggested Course Sequence**



· Not all prerequisites are represented in this chart

Course prerequisites are on page 8 in booklet

· Semesters may vary depending on availability & student progress

Catalog Year 2021-2022 Information Systems (IS) Suggested Course Sequence



Catalog Year 2021-2022 Information Technology (IT) Suggested Course Sequence



Course prerequisites are on page 8 in booklet

Catalog Year 2021-2022 Course List with Prerequisites (All PreReq Courses Require a C- or better unless otherwise notated)

Catalog Year 2021-2022 Course List with Prerequisites (All PreReq Courses Require a C- or better unless otherwise notated)

Additional Opportunities

Double Concentrating:

Students are able to declare two concentrations. The Computing Core will remain the same, but the student will be required to meet the concentration specific courses for each of their chosen concentrations. Any courses that overlap in the concentrations will count for both. Additionally, the extra courses related to each specific concentration can be used as the major electives for the other concentration being pursued. If wanting to double concentrate with CSMN, the student must be admitted into the CSMN concentration (see page 4).

Choosing to pursue two concentrations will typically postpone graduation by one or more semesters.

Your diploma will read **Bachelor of Science in Computing**, but your transcript will list both concentrations.

Accelerated Bachelors to Masters Degree Program:

Purpose: The accelerated bachelors to masters degree program provides high performing ETSU undergraduate students an opportunity to complete both the bachelor and master degrees at an accelerated pace. Participating students can apply as many as 12 credit hours of graduate-level coursework toward both of their degrees.

Benefit: Participating students will benefit by accelerated completion of two degrees, reducing time and cost. Programs will benefit by recruiting motivated students who desire such an opportunity. Particularly motivated students with a number of dual-enrollment or advanced placement courses could additionally reduce the time and cost of earning both degrees.

Eligibility: ETSU students may apply to the program once they have completed 75 credits in their undergraduate programs, including credits earned from dual enrollment or advanced placement. They must apply and be accepted to the accelerated program (including acceptance into the graduate program) prior to earning the undergraduate degree. Transfer students must have completed at least one year (2 semesters) at ETSU prior to requesting admission to the accelerated program.

Minimum GPA: Students must have a minimum ETSU undergraduate GPA of 3.25 to request admission to the program. Individual programs may impose higher GPA requirements.

Admissions: Admission to the accelerated program is contingent on meeting requirements of the respective programs and the School of Graduate Studies (SGS). Permission to pursue developing a proposal for the accelerated program will not guarantee admission to the graduate program.

Additional Requirements:

- 1. Students must receive a grade of B or better in the courses to be applied toward both the bachelor and master degrees.
- 2. No more than twelve (12) credits of graduate work may be counted towards the requirements of both degrees.
- 3. If a student's cumulative undergraduate and graduate GPA falls below the required program minimum, then he/she will need program and graduate school approval to continue in the accelerated program. Program approval of continuation must be written and copied to the student's undergraduate and graduate files.
- 4. A student who withdraws or is administratively withdrawn from the accelerated program may not subsequently count courses for both degrees; the student may count eligible courses toward one degree only.

Additional Opportunities

Internships:

An internship is a great opportunity to gain valuable, real-world experience in your field of study. This experience can differentiate you from your competition when applying for full-time employment. In some cases, internships can even turn into full-time employment. The summer before your senior year is an ideal time for an internship. You should utilize the College of Business and Technology Career Services office to make an internship part of your academic experience. Internships can also be used as one of your Approved CSCI Electives in your program.

Department of Computing Mentorship Program:

The Department of Computing offers the opportunity for students to be mentored by a person that works in the computing field. Mentorship can begin during the student's freshman year and can continue until the student graduates. Mentorship can help students successfully navigate college, and can also assist students in understanding, and preparing for, different career alternatives.

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