College of Science & Technology

Founded 1998

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Introduction

Science and technology were responsible for a profound transformation of the world in the 20th century and will drive the economy of the 21st century. The objectives of the undergraduate programs of the College of Science and Technology are to prepare students for careers in these important areas and to graduate informed, responsible citizens.

The college approaches science and technology as a body of knowledge that has an advancing frontier and a complex interface with society. The traditional mandate for a university is to provide undergraduate students with a comprehensive education and the opportunity to focus closely on a particular area of study. The College of Science and Technology embraces this mandate and extends additional opportunities to our students. Science and Technology students are encouraged to participate in faculty research projects and thus experience the advancement of this body of knowledge.

Bachelor of Science programs offer a greater concentration in major coursework, while Bachelor of Arts programs offer a greater variety of coursework. All programs offer undergraduates the opportunity to work with distinguished faculty and a richly-diverse and stimulating student body as they prepare for active roles in society.

Mission Statement

The mission of the College of Science and Technology is to seek academic excellence by providing outstanding instruction in the sciences, and to foster scientific research of the highest quality. In pursuing its mission the College is committed to meeting the needs of a diverse student body, and is truly dedicated to the founding principles of Temple University in providing a superior education to the prepared student. The educational mission of the College is pursued through offering a current curriculum that incorporates the fundamental principles as well as the latest discoveries in the major scientific disciplines.

Interdisciplinary degree programs and independent research projects allow the student to explore scientific boundaries. The College offers a general education curriculum that provides the opportunity for non-science majors to be better informed of the complex scientific and ethical issues facing society. The College also strives to improve science and mathematics education in the Philadelphia schools. All of these aspects of the educational mission of the College are achieved through the dedicated efforts of the faculty, who are leading scholars in their field.

The research mission of the College is pursued through a sustained effort to recruit the best and brightest new faculty, to aggressively develop promising research initiatives, and to create a modern science campus with facilities fully supportive of cutting-edge research. The College also strives to support the scholarly pursuits and professional activities of its faculty, who in turn advance their respective disciplines. In doing so, the College provides an outstanding environment for graduate and undergraduate research, with the Departments and Centers as focal points for interdisciplinary research initiatives and graduate degree programs. In pursuing its research mission the College of Science and Technology will be a vital participant in establishing Temple University as a recognized center of excellence in scientific research and development.

Admissions


Financial Aid/ Scholarships


Special Programs

Study Abroad

See Education Abroad (http://bulletin.temple.edu/archives/2014-2015/undergraduate/about-temple-university/academic-opportunities/#education-abroad) in the Opportunities section of this Bulletin and Temple University’s Study Abroad web site at www.temple.edu/studyabroad for more information about study abroad options.
University Honors Program

Students in the College of Science and Technology may apply to the University Honors Program. Honors students are eligible to enroll in CST honors courses, provided that they have satisfied the prerequisites and co-requisites. Honors courses are designated with a nine as the second digit in the four-digit number, e.g. MATH 1941 is Honors Calculus I. See Academic Opportunities: University Honors Program (http://bulletin.temple.edu/archives/2014-2015/undergraduate/about-temple-university/academic-opportunities/#honors) for more information.

Undergraduate Research Program

Students in the College of Science and Technology may participate in real-world research experience with world-class scientists. Completing hands-on independent research is critical to the next step in a student's educational or professional career.

Science Scholars Program

The Science Scholars Program offers accomplished and motivated students additional research opportunities and mentorships.

TUteach Certification for Secondary Education

Eight Bachelor of Science programs enable students to prepare for secondary education certification while mastering the content of their field. The programs are: Biology with Teaching, Chemistry with Teaching, Earth and Space Science with Teaching, General Science with Teaching, Mathematics with Teaching, Mathematics and Computer Science with Teaching, Mathematics and Technology with Teaching, and Physics with Teaching. The programs require that students complete the collegial Bachelor of Science requirements and a total of 124 credits. See the TUteach Programs (http://bulletin.temple.edu/archives/2014-2015/undergraduate/science-technology/tu-teach-programs) for more details.

Accelerated Five-Year Bachelor's/Master's Programs with Teacher Certification

The Biology, Chemistry, Earth & Environmental Science, Mathematics, and Physics Departments enable talented students to complete both a Bachelor's degree in one of the above departments and a Master's degree in Education in a total of five years. After completing the Bachelor's degree in one of the aforementioned disciplines, students spend an additional year as a graduate student in the College of Education. Students must apply for the five-year Master's program during their sophomore year. If accepted, they will take both undergraduate major courses as well as Master's in Education courses beginning in their junior year. They complete their undergraduate major in their fourth year and their Master's in their fifth year. Students who complete this program earn a Master of Education degree and are certified to teach in Pennsylvania schools. See the College of Education (http://bulletin.temple.edu/archives/2014-2015/undergraduate/education) for more details.

Early Admission to Professional Programs

Students in the College of Science and Technology who have been admitted to one of the following programs: Temple University School of Medicine, Temple University Kornberg School of Dentistry, Temple University School of Podiatry, Temple University School of Pharmacy, or the Doctorate of Physical Therapy, at the end of their third year and have completed 90 semester hours, including all course requirements for the major, College and University, may transfer their first year in professional study toward the completion of the credit requirements for the degree of Bachelor of Arts. Biology and Chemistry majors may also transfer approved courses in their first year of professional study toward the elective courses in their major.

Students in the College of Science and Technology who have been admitted to other health-related professional schools at the end of their third year with a cumulative GPA of at least 3.5 and who have completed 90 semester hours, including all course requirements of the major, College and University, may petition the dean for the transfer of their first year of professional study toward the completion of the credit requirements for the degree of Bachelor of Arts. University residency requirements must also be met.

Awards and Achievements

Awards

Juniors and seniors are often honored for outstanding performance in a variety of academic areas and for exceptional service to the College and the University. Information about these awards is available in departmental offices or in the Office of Student Services, 1810 Liacouras Walk, Room 203.

Distinction in Major

Many programs allow exceptional students to receive a Distinction in Major. Please see the Bulletin pages for the specific requirements for any particular major.

Phi Beta Kappa

Student Associations

Majors’ Associations

Many of the departments within the College of Science and Technology support student interest organizations known as Majors’ Associations or Societies. Each department organization provides an opportunity for students to interact with faculty and other students who share similar interests. It is through these venues that students may influence course offerings, faculty recruitment, and departmental policy.

- Biochemistry Society
- Biology Society
  https://temple.collegiatelink.net/organization/Biology_Society
  http://tubiosociety.weebly.com
- Chemical Society
  https://temple.collegiatelink.net/organization/TUChemicalSociety
  http://tucs.weebly.com
- Philadelphia Organic Chemists Club
  http://www.pocclub.org
- Association for Computing Machinery (CS and IS&T)
  https://temple.collegiatelink.net/organization/ACM
  http://acm.temple.edu/#/about
- Association for Computing Machinery for Women (CS and IS&T):
  https://temple.collegiatelink.net/organization/ACMW
- Geology Society
  https://ees.cst.temple.edu/geology_club/
- Society for Undergraduate Mathematics
- Math Club
  https://temple.collegiatelink.net/organization/Temple_Math_Club
  https://math.temple.edu/mathclub/
- Society of Physics Students
  https://temple.collegiatelink.net/organization/The_Society_of_Physics_Students
- Research Society

Pre-Professional Health Associations

Temple University has many pre-professional health organizations that may interest students in the College of Science and Technology. These organizations allow students to interact with others with similar professional interests and gain more knowledge about admissions requirements and examinations.

- American Medical Student Association
  https://temple.collegiatelink.net/organization/American_Medical_Student_Association
- Alpha Epsilon Delta (AED) Health Pre-Professional Honor Society
  http://templeaed.weebly.com/index.html
- SNMA: Student National Medical Association
  www.snma.org (http://www.snma.org)
- MEDLIFE (Medicine, Education, and Development to Low-Income Families Everywhere)
  www.tumedlife.weebly.com (http://www.tumedlife.weebly.com)
- Pre-Pharmacy Association
  https://temple.collegiatelink.net/organization/Pre_Pharmacy_Association
  http://templeppa.weebly.com
- Pre-Dental Health Society
  https://temple.collegiatelink.net/organization/PreDental_Health_Society
  http://tupdhs.weebly.com/
- Pre-Physician Assistant Organization
  http://templeprepao.weebly.com
- Temple’s Pre-Physical Therapy Association
  www.TPPTA.weebly.com (http://www.TPPTA.weebly.com)
- Pre-Occupational Therapy Association (TPOT)
  https://www.facebook.com/pages/Temploes-Pre-Occupational-Therapy-Student-Association/218601304970259?ref=bookmarks
- Emergency Medical Services
  www.templeems.org (http://www.templeems.org)
Student Contact
For information about the College of Science & Technology, please contact the Office of Student Services, 215-204-2890.

Contact information for academic programs can be found under the listing for each individual program.

Academic Policies & Regulations
Please see the Undergraduate Academic Policies (http://bulletin.temple.edu/archives/2014-2015/undergraduate/academic-policies) in this Bulletin. Students are responsible for complying with all university-wide academic policies that apply to their individual academic status. Additional and unique policies, or exceptions for the College of Science and Technology (CST), appear below.

Academic Holds
Pre-Pharmacy
Pre-Pharmacy students who have completed 30 or more credits without declaring a major shall be placed on "academic hold" and directed to see a CST advisor before the priority registration period of the subsequent semester.

Program Warning
Any CST student who does not make satisfactory progress in the CST major or track may be placed on "academic hold" and directed to see a departmental or CST advisor before the priority registration period of the subsequent semester.

Undeclared
Students who have not declared a major who have completed 60 or more credits shall be placed on "academic hold" and directed to see a CST advisor before the priority registration period of the subsequent semester.

Adding or Changing Majors or Minors
See Change of Program below.

Backtracking
Students may not apply toward the degree program credit earned for a lower-level course, if the student has progressed two levels beyond the material being taught. For example, a student who has successfully completed PHYS 1062 Elementary Classical Physics II, may not subsequently take PHYS 0847 How Things Work: The Physics of Everyday Life for degree credit. This rule applies to Math and Science courses, language courses, and other sequenced courses. Advanced students should consult with an advisor in the CST’s Office of Student Services before taking a lower-level course.

Change of Program (COP)
CST Students
In order to add or change majors or minors within the College of Science and Technology, a CST student must meet with an advisor in the CST’s Office of Student Services. The advisor will evaluate the student’s record in accordance with the following policy:

1. CST students in their first semester at Temple University who wish to add or change majors or minors within the CST will be automatically approved, provided they are taking, have satisfied or placed higher than a GenEd level or higher Mathematics course.
2. Continuing CST students who wish to add or change declared majors or minors within the CST must have a cumulative grade point average (GPA) of 2.00 or higher. Continuing CST students who wish to change their major to undeclared will be automatically approved, provided that the total of completed and registered credits is fewer than 60 credits.
3. CST students can complete a second major in the CST by fulfilling all requirements for the primary and second majors, including at least four distinct courses in the primary major and four distinct courses in the second major. Distinct courses are those that do not overlap to fulfill requirements in the other major.
Non-CST Students

To transfer into the College of Science and Technology (CST), a non-CST student must attend a Change of Program (COP) information session (http://cst.temple.edu/students/changing-your-major-or-minor). Prior to attending, the student’s record must be in accordance with the following policy:

1. Students in their first semester at Temple University who wish to transfer into CST will be automatically approved, provided that they are taking or have satisfied at least a GenEd level or higher Mathematics course.
2. Continuing students who wish to transfer into CST must have a cumulative grade point average (GPA) of 2.00 or higher and must have completed at least a GenEd level or higher Mathematics course and a GenEd level Science course (or additional GenEd level Mathematics) course, both with a grade of C (2.00) or better.

Once these parameters are met, the student then attends the Change of Program (COP) information session. In the COP, students receive information on the majors/minors offered in CST as well as resources available to students. Following the COP, students eligible to transfer into CST schedule an appointment to meet with an Academic Advisor. The advisor will go over program requirements and answer any additional questions.

Co-Requisites and Prerequisites

Students may be de-enrolled from courses for which they do not meet prerequisites and co-requisites. (Please see the Prerequisites and Co-requisites (http://bulletin.temple.edu/archives/2014-2015/undergraduate/academic-policies/prerequisites-corequisites) policy for more information.) Students are responsible for reviewing and abiding by all course prerequisites and co-requisites in the Course Catalog (http://www.temple.edu/apply/common/catcheck.asp). The requirements are designed to assure that students are appropriately prepared to be successful in their courses. Prerequisites provide an efficient manner for students to register for the next course in a sequence for which they are prepared. Students who appropriately satisfy prerequisites are permitted to register for a first and second attempt. Completion of a prerequisite does not permit a student to enroll in the third attempt of a repeated course. Students may attempt a course for the third time only if they have received permission from the College, which is not guaranteed and may require additional coursework (See Repeat Policy below).

Course Eligibility

The College of Science and Technology offers four types of undergraduate courses:

1. Preparatory courses numbered 0700-0799: open to all students, including non-degree seeking students who have completed appropriate course prerequisites and have completed or are in the process of completing required co-requisite courses. If required, students must complete these courses before enrolling in any higher level courses in the same department.
2. General Education courses numbered 0800-0999: open to all students, including non-degree seeking students who have completed appropriate course prerequisites and have completed or are in the process of completing required co-requisite courses. These courses satisfy University General Education requirements as indicated in the course description.
3. Lower-Level courses numbered 1000-1999: open to all students, including non-degree seeking students who have completed appropriate course prerequisites and have completed or are in the process of completing required co-requisite courses. These are general foundation level courses in the various disciplines.
4. Upper-Level courses numbered 2000-4999: open to all students, including non-degree seeking students who have completed appropriate course prerequisites and have completed or are in the process of completing required co-requisite courses. These courses build on the foundation courses (and on other upper-level courses) to provide a focused exploration of field-specific content.
5. Graduate-Level courses numbered 5000-9999: undergraduate students are generally prohibited from taking Graduate-Level courses. In rare circumstances, special permission may be granted by the department for undergraduate students to take graduate courses. A higher graduate tuition will apply.

Courses Inapplicable to Graduation

Semester hours earned in MATH 0701 or MATH 0702, lower-level military science (ROTC), and RCC-enhanced courses are not credited toward the minimum semester hours required for graduation.

Students will not be awarded duplicate credit for courses that are repeated in transfer or at Temple.

Students will not receive credit towards graduation for lower-level courses, which are two or more courses below either an already-completed course or their placement level. For example, if a student successfully completes MATH 1041 (Calculus I), then they are not permitted to subsequently take MATH 1021 (College Algebra) for new credits.

A maximum of 8 semester hours of credit will be allowed by CST for life experience and CLEP examinations. A maximum of 4 courses or up to 12 semester hours will be allowed for upper-level Military Science (Army ROTC), Naval Science (Navy ROTC) or Aerospace Studies (Air Force ROTC) courses. A maximum of 12 total semester hours will be allowed for a combination of CLEP, Life Experience, and upper-level Military Science.
Courses Over Five Years Old
In admitting transfer or returning students, the College of Science and Technology will, when possible, allow credit for courses taken five or more years prior to the date of admission or re-enrollment. The College of Science and Technology may choose not to accept courses regardless of age for credit in the major. Foundation courses, courses of a technical nature or courses in a particularly dynamic field may not be accepted for credit.

Courses over five years old will be reviewed by the College to determine whether they will be accepted toward the degree. Final determination of the acceptability of such courses is the responsibility of the Office of Student Services and generally occurs after the student has matriculated or been rematriculated.

Dean’s List
Each fall and spring semester, those undergraduates who have met the credit hour and academic criteria for their school or college are placed on the Dean’s List. See the Dean’s List (http://bulletin.temple.edu/archives/2014-2015/undergraduate/academic-policies/deans-list) policy for specific GPA and credit-hour requirements.

Fly in 4
Fly in 4 is a partnership between incoming freshmen and the university. It limits the number of hours per week that students have to work for pay and guarantees that students can graduate in four years, potentially saving them thousands of dollars in debt. For more information on this program, see Undergraduate Admissions (http://admissions.temple.edu/cost-and-aid/fly-in-4).

Grading
Major, Minor, and GenEd courses must be completed with a letter grade of C- or higher unless otherwise specified. Certain courses require a C or better in order to advance to the next level.

Graduation Procedures
All College of Science and Technology students are required to complete a graduation review with an advisor in the Office of Student Services prior to or at the start of their senior year. Students should schedule a review once they have completed 90 semester hours. The graduation review involves a detailing of the courses and credits completed and those that remain to be completed for graduation. Once a professional advisor completes the review, the Office of Student Services forwards the review to the student’s department for the faculty advisor’s approval.

Students are expected to be active participants in the review and have equal responsibility for assuring the accuracy and completeness of the review. Early in the semester in which students will complete their degree requirements, they must apply online via Self-Service Banner (SSB). For application deadlines, see the University's Undergraduate Graduation Procedures (http://bulletin.temple.edu/archives/2014-2015/undergraduate/academic-policies/graduation-procedures).

Intra-University Transfer (IUT)
See Change of Program.

Life Experience Credits
Students are required to write what proficiencies are developed by their life experience and designate courses similar to their background. The experience will be reviewed by the appropriate faculty. Students need a 2.5 minimum cumulative GPA in order to apply. A maximum of 12 semester hours is allowed for the combined category of life experience, upper-level military science (ROTC) courses, and CLEP/DSST examinations.

Non-Traditional Credits
A maximum of 12 semester hours of credit will be allowed by CST for life experience, upper-level military science (ROTC) courses, and CLEP/DSST examinations.

Overload Requests
Students in the College of Science and Technology must petition through the Office of Student Services for approval of an overload when they request to take more than 17 credits in either the fall or spring semesters or more than 8 credits in either summer session. The following items are considered when reviewing an overload petition:

- Minimum 2.75 GPA overall and in the last semester of graded coursework.
- The number of credits completed in previous semesters.
- The number of science and math courses taken previously in each semester.
- The amount of credits requested.
- The type of courses requested. The office focuses particularly on the number of science and math courses in the student’s proposed roster.
Each petition will be reviewed individually based on the number of credits requested.

**Permission to Take Courses at Another Institution**

Students in the College of Science and Technology who wish to take courses at another institution must petition the Office of Student Services for approval prior to enrolling in such a course. Petition forms are available at the Office of Student Services, 1810 Liacouras Walk, Room 203. The student is responsible for obtaining a course description from the other institution and attaching it to the petition form. The student takes the petition to the corresponding Temple department for faculty review and then submits the petition to the Office of Student Services for final approval.

Courses taken without prior approval will not be transferrable toward the Temple degree. In addition, students must have completed the prerequisites and have completed or be completing any listed co-requisites of both the Temple equivalent course and course at the host institution.

Please see the University policy on Permission to Complete a Course at Another Institution after Matriculation (http://bulletin.temple.edu/archives/2014-2015/undergraduate/academic-policies/permission-complete-course-institution-matriculation) for more information.

**Placement Tests**

The results of placement tests determine if students are required to enroll in preparatory composition and mathematics courses. All incoming freshmen must take English and mathematics placement tests. Prior to taking the Placement tests, students are encouraged to review their English and mathematics work, and are particularly encouraged to use My Math Test (http://www.temple.edu/msrc/tutoring/MMT.asp) as a refresher.

All CST transfer students are required to complete the math placement test, regardless of transfer credits. For students who have already completed their program’s mathematics requirement or the prerequisite requirement through transfer credits, the test will be used as a diagnostic tool. The test results will be informational only and will not restrict or dictate course selection nor negate the transferability of credits. The results of the placement exam should be discussed with an academic advisor at the time of the initial registration. Your advisor may suggest certain “bridge courses” that will assist you in preparing for more advanced coursework. Bridge courses build on content from courses for which you have received transfer credit, allow you to keep your credits, and support your preparation for the next course in your sequence.

If students are unsuccessful in courses beyond their placement results, they may be asked to repeat the prerequisite course at Temple regardless of transfer credits.

Transfer students who have not completed ENG 1002 or ENG 0802 are also required to take the English placement test. Students assigned to ENG 0701 or ENG 0711 must register each semester for that course until the requirement is completed. Only upon successful completion of ENG 0701 or ENG 0711 can such students enroll in ENG 0802 or ENG 0812.

**Plagiarism and Academic Cheating**

Plagiarism and academic cheating are prohibited by the College of Science and Technology. The development of independent thought and a respect for the thoughts of others is essential to intellectual growth. The prohibition of plagiarism and cheating is intended to foster this independence and respect. See the policy on Plagiarism (http://bulletin.temple.edu/archives/2014-2015/undergraduate/academic-policies/plagiarism-academic-cheating) in this Bulletin.

The penalty for plagiarism or cheating as a first offense is normally an F in the course in which the offense is committed. In such cases, the instructor writes a report to the dean and the Office of Student Conduct and Community Standards. The Office of Student Conduct and Community Standards generally adjudicates all cases and student appeals.

**Pre-Pharmacy Track Students**

Pre-Pharmacy track students must declare a primary major upon completion of 30 credits. Students who have completed 30 credits without declaring a primary major will have an academic hold placed on their record that will prevent them from registering. Students must meet with an advisor to declare a major in order to have the hold removed. All Pre-Pharmacy students should identify a “parallel” program of study in addition to indicating their intent to pursue Pharmacy School admission.

**Prerequisites and Co-Requisites**

Students may be de-enrolled from courses for which they do not meet prerequisites and co-requisites. (Please see the Prerequisites and Co-requisites (http://bulletin.temple.edu/archives/2014-2015/undergraduate/academic-policies/prerequisites-corequisites) policy for more information.) Students are responsible for reviewing and abiding by all course prerequisites and co-requisites in the Course Catalog (http://www.temple.edu/apply/common/catcheck.asp). The requirements are designed to assure that students are appropriately prepared to be successful in their courses. Prerequisites provide an efficient manner for students to register for the next course in a sequence for which they are prepared. Students who appropriately satisfy prerequisites are permitted to register for a first and second attempt. Completion of a prerequisite does not permit a student to enroll in the third attempt of a repeated course. Students may attempt a course for the third time only if they have received permission from the College, which is not guaranteed and may require additional coursework (See Repeat Policy below).
Program Performance

Students should maintain a 2.00 cumulative GPA in their major or track and make satisfactory progress towards their CST degrees. The Critical Path initiative has prompted the College to identify milestones in each major meant to guide students towards degree completion. Outreach efforts will be sent to students who have fallen off track based on their need to repeat courses or who have fallen below a 2.0 GPA within the College. Guidance will be offered to assist these students with making progress towards their degree and repairing their GPA.

Re-enrollment to the College of Science and Technology

College of Science and Technology students who have not enrolled for two consecutive semesters must apply for re-enrollment. Any existing holds must be cleared prior to re-enrollment and official transcripts provided for any college-level courses completed after leaving Temple University. Students who have been away for less than two semesters are subject to university policies and restrictions governing taking courses at another institution and must receive permission prior to enrollment in such courses. In addition, courses over five years old will be reviewed by the College to determine whether they will be accepted toward the degree. Final determination of the acceptability of such courses is the responsibility of the Office of Student Services and generally occurs after the student has been rematriculated.

The deadline for application to readmit for the fall semester is August 1; the deadline to readmit for the spring semester is December 1, and the deadline for summer semester I and II is April 1. Also see the policy on Academic Standing (http://policies.temple.edu/getdoc.asp?policy_no=02.10.11).

If the student's original curriculum is no longer available, students are required to follow the most current curriculum or choose another current curriculum, upon return. This applies to any student who has not registered for a single fall or spring semester. This can have significant impacts on degree progress and students are encouraged to discuss any planned absences with an advisor.

Full-time degree-seeking students have the option of pursuing a Leave of Absence for a period of no more than 2 semesters. Please refer to the Leave of Absence Policy (http://policies.temple.edu/getdoc.asp?policy_no=02.10.16) for more information.

Repeating a Course

Students may attempt a course two times without restriction. Students in the College of Science & Technology are encouraged to meet with an advisor prior to attempting a course for the second time. A third attempt of any course is not guaranteed and requires permission of the student's home college. Petitions for a third attempt may require additional coursework, remediation, and/or academic/personal planning. Please refer to the University policy on Repeating a Course (http://bulletin.temple.edu/archives/2014-2015/undergraduate/academic-policies/repeating-course) for further information.

Undeclared Majors

After completing 30 credits, undeclared majors in the College of Science and Technology will be notified that they need to select a major. Students who have completed 60 credits without declaring a major will have a hold placed on their record that will prevent them from registering. Students must meet with an advisor to declare a major in order to have the hold removed.

Warning, Probation and Dismissal

All University policies on warning, probation and dismissal are enforced with this addition: CST students who are put on Academic Warning or Probation should see an academic advisor to review their proposed schedule of courses. See the University's policy on Academic Standing (http://policies.temple.edu/getdoc.asp?policy_no=02.10.11) for more details.

General College Graduation Requirements

Requirements for the Bachelor of Science (B.S.) and the Bachelor of Arts (B.A.) Degrees

The College of Science and Technology offers two undergraduate degrees: a Bachelor of Arts (B.A.) and a Bachelor of Science (B.S.). The B.A. degree gives students a broad-based education, including the study of a foreign language. The B.S. degree is for those students who wish for more specialized training in their chosen disciplines.

Credit Hour Requirements

The College of Science and Technology requires that students complete a total of 123 credits for most programs. The TUteach programs (Biology with Teaching, Chemistry with Teaching, Earth & Space Science with Teaching, General Science with Teaching, Mathematics with Teaching, Mathematics and Computer Science with Teaching, Mathematics and Technology with Teaching, and Physics with Teaching) require students to complete a total of 124 credits. Of those totals, 90 credits must be in the College of Science and Technology or the College of Liberal Arts (CLA). A course shall count as a College of Science and Technology or College of Liberal Arts course if it is offered by a department or program in either of the respective colleges, or if it is in the department of Art History, or if it is taken to satisfy a major or minor requirement in the College of Science and Technology. Of those 90 credits, 45 must be in upper-level courses. Upper-level courses consist of course numbers at the 2000 level or above. Students receiving a Bachelor of Arts (as opposed to Bachelor of Science) degree must take at least two courses numbered 2000 or above in the College of Liberal Arts.
Courses Inapplicable to Graduation

Semester hours earned in MATH 0701, lower-level military science (ROTC), and RCC-enhanced courses are not credited toward the minimum semester hours required for graduation.

Students will not be awarded duplicate credit for courses that are repeated in transfer or at Temple.

Students will not receive credit towards graduation for lower-level courses, which are two or more courses below either an already-completed course or their placement level. For example, if a student successfully completes Math 1041 (Calculus I), then they are not permitted to subsequently take MATH 1021 College Algebra for new credits.

A maximum of 8 semester hours of credit will be allowed by CST for life experience and CLEP examinations. A maximum of 4 courses or up to 12 semester hours will be allowed for upper-level Military Science (Army ROTC), Naval Science (Navy ROTC) or Aerospace Studies (Air Force ROTC) courses. A maximum of 12 total semester hours will be allowed for a combination of CLEP, Life Experience and upper-level Military Science (Army ROTC), Naval Science (Navy ROTC) or Aerospace Studies (Air Force ROTC) courses.

Grade Point Average (GPA) Requirement

The College of Science & Technology requires that students have a GPA of at least 2.00 overall and at least 2.00 in the courses applicable to their major and/or minor GPA.

Residency Requirements

Students who transfer into the College of Science and Technology must complete at least 45 of their last 60 semester hours of coursework at Temple. These credits must be applicable to their degree.

For Bachelor of Arts programs, 7 of the courses required for the major must be completed at Temple. For the Bachelor of Science programs that are within a single discipline, 9 of the courses required for the major must be completed at Temple. For the Bachelor of Science programs that are interdisciplinary, 10 of the courses required for the major must be completed at Temple.

In addition, half of the courses required in the department of the major must be taken at Temple. Please refer to degree programs for the specific number of major courses required.

Bachelor of Science Requirements

General Education

All students are required to complete the General Education (GenEd) requirements. The General Education curriculum consists of 25-26 s.h.

Major

Students must also complete the requirements of a departmental major. The minimum acceptable grade in a course taken to fulfill major requirements is a C- unless otherwise specified. Bachelor of Science majors are offered in the following programs:

- Applied Mathematics
- Biochemistry
- Biology
- Biology with Teaching
- Biophysics
- Chemistry
- Chemistry with Teaching
- Computer Science
- Earth and Space Science with Teaching
- Environmental Science
- General Science with Teaching
- Geology
- Information Science and Technology
- Mathematics
- Mathematics and Computer Science
- Mathematics and Physics
- Mathematics with Teaching
- Mathematics and Computer Science with Teaching
- Mathematics and Technology with Teaching
Minor or Concentration

Students may also choose to complete the requirements for a minor and/or concentration. The minimum acceptable grade in a course taken to fulfill minor or concentration requirements is a C- unless otherwise specified. A concentration is available in the program of Biology. At least three of the courses credited towards the minor must be courses that were not credited towards the major. If the primary major is not within CST, the student should follow the policies of the home college regarding distinct courses. At least half of the courses taken by a student to fulfill the minor must be taken at Temple. Minors are available in the following programs:

- Biology
- Computer Science
- Digital Media Technologies (CIS/MSP)
- Geology
- Information Science and Technology
- Mathematics
- Physics

Second Major

Students may complete a second major by fulfilling all requirements for the primary and second majors, including at least four distinct courses in the primary major and four distinct courses in the second major. If the primary major is not within CST, the student should follow the policies of the home college regarding distinct courses. General Education requirements must be satisfied in accordance with the requirements of the primary major. In instances of a double major, only one degree will be conferred.

Bachelor of Arts Requirements

General Education

All students are required to complete the General Education (GenEd requirements. The General Education curriculum consists of 25-26 s.h.

Language Requirement

In addition to the University General Education requirement, Bachelor of Arts candidates must complete a second language requirement. B.A. degree candidates are required to successfully complete the second semester (typically courses numbered 1002) of a second language or demonstrate proficiency in a second language. Languages include: American Sign Language, Arabic, Chinese, French, German, Greek, Hebrew, Hindi, Italian, Japanese, Korean, Latin, Portuguese, Russian, Spanish, and Vietnamese.

Upper-level Distribution Requirements

Bachelor of Arts students must complete upper-level distribution requirements by taking two upper-level courses in one or more departments of the College of Liberal Arts or the department of Art History. Upper-level courses consist of course numbers at the 2000 level or above.

Students who have second majors, one of which is in the College of Liberal Arts or Art History, automatically satisfy the distribution requirement.

Major

Bachelor of Arts candidates must complete the requirements of a major. It is important to note that students enter the College of Science and Technology as Bachelor of Science majors. If students wish to change their degree choice to Bachelor of Arts, they must complete a declaration of major form in the Office of Student Services with an advisor. The minimum acceptable grade in a course taken to fulfill major requirements is a C- unless otherwise specified. B.A. majors are offered in the following programs:

- Biology
- Chemistry
- Computer Science
- Geology
- Information Science and Technology
- Mathematics
- Mathematical Economics (MATH/ECON)
- Natural Sciences
- Physics
Minor or Concentration

Students may also choose to complete the requirements for a minor and/or concentration. The minimum acceptable grade in a course taken to fulfill minor or concentration requirements is a C- unless otherwise specified. A concentration is available in the program of Biology. At least three of the courses credited towards the minor must be courses that were not credited towards the major. At least half of the courses taken by a student to fulfill the minor must be taken at Temple. Minors are available in the following programs:

- Biology
- Computer Science
- Geology
- Digital Media Technologies (CIS/MSP)
- Information Science and Technology
- Mathematics
- Physics

Second Major

Students may complete a second major by fulfilling all requirements for the primary and second majors, including at least four distinct courses in the primary major and four distinct courses in the second major. General Education requirements must be satisfied in accordance with the requirements of the primary major. In instances of a double major, only one degree will be conferred.

Individual Program Requirements

Certain courses fulfill multiple requirements. In careful consultation with your advisor, you will be able to optimize curriculum choices.

The total number of hours required for the degree may vary based on initial placement exams, transfer evaluations, individual curriculum choices, and academic programs.

Listed under each degree program are the courses students must successfully complete to earn that particular B.A. or B.S. degree. These required courses are in addition to the General Education curriculum requirements.

Academic Advising

The Office of Student Services
1810 Liacouras Walk
Suite 203
215-204-2890
http://cst.temple.edu/
cstadv@temple.edu

The Office of Student Services in the College of Science and Technology guides students from New Student Orientation through graduation to assist them in ensuring that they complete all degree requirements and work to their fullest potential. Professional advisors help students plan courses, explore majors, research career opportunities, and understand Temple's resources. Faculty advisors in each major use their field experience and knowledge of departmental curriculum to help students choose courses consistent with their specific career objectives.

Specialized Services

- **New Student Orientation:** Group advising and registration appointments for all newly-admitted first-semester freshmen and transfer students.
- **Advising and Registration Services:** Students may want to meet with professional advisors at different times during their academic career to discuss their academic progress, develop educational and career goals, discover academic success strategies and check on their remaining graduation requirements. The express advising and advising-by-appointment schedule is available at http://cst.temple.edu/students/advising-and-student-services/academic-advisors. Registration with an advisor is required for students with a cumulative, last semester attended or major/track GPA below 2.0 and for any students registering for more than 17 credits. Newly-admitted or readmitted students are also required to meet with an advisor for registration.
- **Petition Processing:** The Director and Assistant Director of Student Services review petitions on a rolling basis. Typical petition requests include those for a third registration for the same course, for an overload of credits, to complete a course at another institution after matriculation, for a leave of absence, for a withdrawal with an approved excuse, and for Exceptions to Policy.
- **Progress Report:** At 60 credits, students may schedule a progress report with their academic advisor to lay out a semester plan for completing the remaining requirements before graduation.
• **Graduation Review:** At 90 credits, students are required to schedule an official graduation review with their academic advisor. The advisor will explain the remaining course and credit requirements needed to graduate. Students are expected to be active participants in the review and have equal responsibility for assuring the accuracy and completeness of the review.

**Departmental Advising**

After their New Student Orientation advising and registration session, students’ major departments will have access to their academic credentials for subsequent advising by faculty advisors. Faculty advising is very important in developing ties between a student's academic program and his or her professional goals. Faculty advisors may assist students in finding research opportunities and professional internships and will help students choose courses that will best prepare them for their field of interest within a particular discipline. A list of Faculty Advisors (http://cst.temple.edu/students/advising-and-student-services/faculty-advisors) may be found on the CST web site.

**Academic Advising and Student Responsibility**

All academic advisors are trained to read and evaluate information carefully to give students the best possible advice. However, primary responsibility for curriculum completion rests with the student. Every student must be aware of the requirements of his or her degree and should collaborate with an advisor regularly to ensure timely completion of his or her program.

**Student Advisors/Ombudspersons**

Each department in the College of Science and Technology has a Student Advisor/Ombudsperson (SA/O) who is a qualified undergraduate student in that department. The SA/O is thoroughly familiar with requirements and curricula of the department and can competently advise fellow students on the courses and faculty members of the department. He or she also has information about career options for the department's graduates. The SA/O also coordinates the student grievance procedure. A list of Student Advisors/Ombudspersons (http://cst.temple.edu/advising-and-student-services/student-ambassadors) is available on the CST web site. Each SA/O has an office in his or her department, and the SA/O program coordinator is located in the Office of Student Services.

**Student Grievance Procedure**

The SA/O is familiar with the College of Science and Technology Grievance Procedure and is the first person to consult in case of an academic grievance. The SA/O will serve as a student-faculty liaison and attempt to resolve the grievance through mediation. The College of Science and Technology grievance procedure (http://cst.temple.edu/students/advising-and-student-services/student-grievance-procedure) is available on the CST web site. A list of Student Advisors/Ombudspersons (http://cst.temple.edu/advising-and-student-services/student-ambassadors) is available on the CST web site.

**Continuing Student Registration**

Continuing student registration is the period during the fall and spring semesters when currently-enrolled students should register. Degree Audit Reports (DARS) provide a compact summary of a student’s progress toward a degree, including a list of requirements yet to be completed. Eligible students obtain their DARS documents via TUportal.

Prior to processing their registrations, freshmen are strongly recommended to meet with advisors to review their DARS documents and discuss course selections for the upcoming semester. New transfer students and continuing students in good academic standing are encouraged to meet with their departmental advisors before processing their schedules via Self-Service Banner. Students ineligible to use Self-Service Banner are required to meet with an advisor.

**Pre-Professional Advising**

Knowledge gained in the College of Science and Technology curricula provides the foundation needed in preparing for Professional Health School entrance exams. Many of the courses required by professional programs such as dentistry, medicine, pharmacy, and veterinary medicine are incorporated into College of Science and Technology curricula. This approach allows our students to fulfill degree requirements, while at the same time meeting admissions criteria for professional and graduate programs.

CST offers three ways in which students can pursue health professional programs.

- Students may complete a bachelor’s degree and apply to the health professional program.
- Students may apply to the 3+4 and 3+3 accelerated programs linked to particular Temple health professional programs by which they may complete both their bachelor and professional degree.
- Students may apply to the 3+4 pre-pharmacy program by which students would only complete a Doctor of Pharmacy (PharmD).

Students interested in professional health programs should contact the Office of Pre-Professional Health Studies for detailed advising. The office is located in 1810 Liacouras Walk, Suite 100 and further information can be found at www.temple.edu/healthadvising. Applicants to professional health programs who are either pursuing a degree+professional program or the 3+professional program must complete a "Letter of Intent" with the Office of Pre-Professional Health Advising, preferably during their first semester but no later than the spring of their freshman year. Applicants to a Pharmacy program on a 3+4 track apply directly to the Pharmacy program. The curriculum and advising of these students is specifically tailored to fulfill the
prerequisites set forth by the Temple University School of Pharmacy. **Pre-pharmacy students must declare a major upon completion of 30 credits.** All students should identify a "parallel" program of study in addition to indicating their intent to pursue a professional health program.

**Faculty**

Please go to the College of Science & Technology web site at cst.temple.edu and click on the individual department at the bottom of the page for a list of faculty in each department. See also https://directory.temple.edu/.

_Abraham Abebe_, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., University of North Carolina at Greensboro.

_Ergin H. Ahmed_, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., Temple University.

_Niwaer Al_, Assistant Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Nebraska-Lincoln.

_Robert M. Aiken_, Professor Emeritus, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Northwestern University.

_Ola Ajaj_, Assistant Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Florida Atlantic University.

_Shohreh Amini_, Professor, Department of Biology, College of Science and Technology; Ph.D., University of Pennsylvania.

_Edwin J. Anderson_, Professor Emeritus, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., Brown University.

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_Jorune Balciuniene_, Assistant Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., Uppsala University.

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Longin Jan Latecki, Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Hamburg.

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Julie Marin, Assistant Professor (Research), Department of Biology, College of Science and Technology; Ph.D., Muséum National d'Histoire Naturelle.

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