



College of Information Technology and Engineering

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MISSION OF THE COLLEGE

The mission of CITE is to meet regional needs for undergraduate, graduate and professional education, research, and service, in the fields of engineering, technology, and industrial sciences. CITE is committed to serve the lifelong educational needs of students, new graduates, working professionals, and employees.

CITE builds on combined traditions of student-focused education, entrepreneurship, and funded research and service emphasis. CITE provides education when and where needed, incorporating technology-enhanced methods, by full-time, dedicated faculty complemented by expert adjunct faculty from industry and government. CITE has offices on both the Huntington and South Charleston campuses.

In addition to the undergraduate programs described in this catalog, CITE offers graduate programs and professional education in engineering, technology management, information systems environmental science, and safety. The *Graduate Catalog* contains further information.

DEGREE PROGRAMS

The College of Information Technology and Engineering offers the following programs:

1. Pre-Engineering program
2. Bachelor of Science in Safety Technology with concentrations in Mine Safety or Occupational Safety
3. Master of Science in Engineering with emphases in Chemical Engineering, Engineering Management, or Environmental Engineering
4. Master of Science in Environmental Science
5. Master of Science in Information Systems
6. Master of Science in Safety with emphases in Ergonomics, Industrial Hygiene, Occupational Safety and Health, Mine Safety, Safety Management, or Transportation Safety
7. Master of Science in Technology Management with emphases in Environmental Management, Information Technology, Manufacturing Systems, or Transportation Systems and Technologies

ADMISSION REQUIREMENTS

CITE admission requirements for students at the freshman level are:

- B.S. in Safety Technology - General MU admission standards of 19 composite ACT, and high school GPA of 2.0
- Pre-Engineering program - Math ACT of 21, 19 composite ACT, and high school GPA of 2.0

ACADEMIC POLICIES

Advising

The college requires all freshmen to see their advisors before they register each semester.

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Credit Evaluation

During the junior year, and no later than the completion of 80 semester hours, an appointment is to be made with your academic advisor for a credit evaluation. This evaluation will show what course requirements have been completed, and what requirements remain. The evaluation will also help ensure that satisfactory progress is being made toward graduation.

Academic Probation and Suspension

Any student with a 1 to 19 quality point deficiency is notified immediately and placed on academic probation. The student must meet with his/her advisor and formulate a plan to remove the deficiency. The advisor will limit the number of hours a student may register for in a semester depending on the severity of the deficiency. A student is subject to dismissal from the college if he/she continues on probation for three consecutive semesters, excluding summer terms.

A student who at any point accumulates a deficiency of 20 or more quality points is placed on academic suspension for one semester.

PRE-ENGINEERING

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Marshall University offers a pre-engineering program that consists of the first two years of a professional engineering curriculum, including basic mathematics, science, and core engineering courses common to most undergraduate engineering programs. In order to complete the final two years of a specific engineering degree such as chemical, civil, electrical/computer, or mechanical engineering, students must transfer to another institution (usually West Virginia University or West Virginia University Institute of Technology).

To qualify for admission a minimum Math ACT score of 21 is required. However, students meeting the university's general admission requirements may be admitted on a probationary status as a CITE undecided major. Students admitted on a probationary status must complete MTH 229, Calculus I with a grade of *C* or better by the end of their second semester in the program, or be subject to dismissal from the program. In order to transfer into the engineering program, students must meet the Math ACT requirement, or have completed MTH 229 with a grade of *C* or better. If transfer students do not meet the above requirements they may be admitted on a probationary status with the same restrictions as listed above for program admission.

With the possible exception of chemical and computer engineering, where specialized coursework is sometimes offered in the second year, students transferring to professional engineering programs after two years should be able to complete their B.S. requirements in the normal amount of time. The plan of study outlined below provides the general sequence of courses taken by each engineering discipline. Since each student may have different qualifications and background, and since requirements may vary slightly for different professional schools, each student should meet with the pre-engineering advisor to plan an individual course of study.

First Year

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
MTH 229, Calculus I	5	MTH 230, Calculus II	4
ENG 101, English Composition	3	ENG 102, English Composition	3
CHM 211, Chemistry I	3	ENGR 111, CS For Engineers I	3
CHM 217, Chem. Lab. I	2	CHM 212, Chemistry II	3
ENGR 107, Introduction to Engineering	2	CHM 218, Chem. Lab. II	2
UNI 101, Orientation	1	ENGR 101, Engineering Graphics	3
	16		18

Second Year

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
MTH 231, Calculus III	4	MTH 335, Differential Equations	4
ENGR 213, Statics	3	ENGR 214, Dynamics	3
PHY 211, Physics I	4	PHY 213, Physics II	4
PHY 202 or 212, Physics Lab	1	PHY 204 or 214, Physics Lab	1
ENGR 201, Circuits I	4	ENGR 221 Engineering Economy ¹	
GLY 200 Geology ¹		or ENGR 219 Thermodynamics ²	
or ENGR 221, Engineering Economy	3	ENGR 216 Mech. of Materials ³	
	19	or ENGR 202, Circuits II ⁴	4
			19

¹For Civil Engineering

²For Elec./Comp. & Mechanical Engineering

³For Civil & Mechanical Engineering

⁴For Elec./Comp. & Chem. Engineering

Engineering Minor

A student may be awarded a minor in engineering by completing any five of the following courses with a grade of *C* or better in each course: ENGR 201, ENGR 202, ENGR 213, ENGR 214, ENGR 216, ENGR 219, and ENGR 221.

TRANSFER TO BACCALAUREATE PROGRAMS IN ENGINEERING

Administrative Bulletin No. 23 of the Board of Trustees establishes policies for transfer of students from pre-engineering programs to baccalaureate programs at West Virginia University and West Virginia University Institute of Technology.

POLICIES AND PRACTICES FOR THE TRANSFER PROCESS

- A. Any student (1) who is a resident of West Virginia, (2) who meets the admission standards for a receiving institution at the time they are admitted by the sending institution, (3) who maintains a GPA of 2.0 or higher during the equivalent of four terms (64 credit hours) at a sending institution will be assured admission into a baccalaureate program in engineering at the receiving institution, provided the student has satisfactorily completed all prerequisite courses. Qualified students who have completed fewer than 64 credit hours at a sending institution will be considered for admission to a baccalaureate engineering program at a receiving institution in the same manner as the receiving institution's regular returning students. Students should consult the college handbook of the desired receiving institution for admission requirements.

Students who have completed a pre-engineering program should have completed the following core of courses:

Calculus 12 hrs.

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Chemistry	8 hrs.
Physics	8 hrs.
English	6 hrs.
Statics	3 hrs.
Computer Programming	2 hrs.
Graphics	2 hrs.

- B. Any student (1) who is **not a resident** of West Virginia, (2) who meets the non-resident admission standards for a receiving institution at the time they are admitted by the sending institution, and (3) who maintains a GPA of 2.0 or higher during the institution will be assured admission into a baccalaureate program in engineering at a receiving institution, provided the student has satisfactorily completed all prerequisite courses. Qualified students who have completed fewer than 64 credit hours at a sending institution will be considered for admission to a baccalaureate engineering program at a receiving institution on a case-by-case basis.
- C. Any student who does not qualify under A or B above, but who nonetheless is admitted to a pre-engineering program at a sending institution, must be informed that there is no assurance that he or she will be admitted to a baccalaureate program in engineering at a receiving Institution. These students will be admitted to the College of Engineering and to a curriculum if they have completed at least 8 hours of calculus, 8 hours of applicable physics or chemistry, and 4 hours of graphics and computer programming and one semester of freshman composition with an overall 2.5 GPA and a 2.5 GPA in math and science courses. Students who do not meet the minimum transfer requirements, but who demonstrate special aptitude for engineering studies, may request admission to a baccalaureate program in engineering at a receiving institution by written petition to the appropriate administrator at the receiving institution. Although these guidelines are designed to accommodate students who wish to transfer into a baccalaureate engineering program from an approved two-year pre-engineering program, differences in the range and scope of offerings at each institution cannot assure that a student will be able to complete the baccalaureate degree in all fields of engineering within a four-year period.

Any student who is admitted by transfer from a pre-engineering program at a sending institution will be treated by the receiving institution like the receiving institution's regular returning student. Access to student housing and other privileges at the receiving institution will be controlled by the usual offices, in accordance with the institution's standard practices.

All pre-engineering students at a sending institution will have an opportunity annually to consult with academic advisors from the receiving institutions to ensure adequate articulation of engineering program requirements.

The number of slots available in certain high demand programs at West Virginia University may be limited. In these cases, West Virginia University may invite qualified applicants to select another field.

SAFETY TECHNOLOGY

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The safety profession is an occupational field concerned with the preservation of both human and material resources through the application of various principles drawn

from such disciplines as engineering, education, psychology, physiology, enforcement, hygiene, health, physics and management. "Safety Science" is a term for everything that goes into the prevention of accidents, illnesses, fires, explosions and other events which damage people, property and the environment.

The Bachelor of Science degree in Safety Technology offers students the option of preparing for entry-level positions in industry, governmental agencies and related service industries. The need for Safety Professionals has expanded due to Federal and State legislation governing safety and health in the workplace and an increase in public awareness of safety and health factors.

The program is accredited by and follows the recommendations of the Related Accreditation Commission/Accreditation Board for Engineering & Technology (RAC/ABET) for the preparation of Safety Professionals.

Refer to the CITE Admission Requirements section for details. Each student in the program will be expected to maintain a 2.0 GPA overall prior to and after admission into the program. An internship (capstone experience) is required the last semester of the senior year under the Marshall Plan and the program requirements.

A. Program General Requirements Total 33 to 37 Hrs.

I. Orientation: UNI 101, New Student Seminar 1 Hr.

II. Fine Arts/Humanities: 3 Hrs.

Student should choose ONE course from the following:

Art; or Theatre; or Music; or Religion; or Philosophy 302, 303, or 304

III. Communications Studies 15 Hrs.

English 101 3 hrs.

English 102 or English 201 (H) 3 hrs.

ENG 354 or ENG 302 3 hrs.

CMM 103 3 hrs.

And choose either:

CMM 202 or CMM 207 or CMM 319 3 hrs.

IV. Mathematics: 5 to 9 Hrs.

Note: The mathematics a student must take will depend upon several factors such as students ACT score and mathematics proficiency. A student may need to take additional math courses to be brought up to an acceptable level. It is very important to talk to your advisor.

19 or 20 Math ACT

1. Math 127 (5 hrs.) and Math 122 (3); 8 hours total

OR

2. Math 123 (3 hrs.) and Math 130 (3 hrs.) and Math 122 (3 hrs.); 9 Hrs. total

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** Students considering working on an M.S. degree in Safety, with emphasis in Industrial Hygiene or Ergonomics, will be required to take Math 140, Applied Calculus, as a prerequisite for program admission.

21 or higher on Math ACT

2. Math 132 (5 hrs)

OR

4. Math 130 (3 hrs) and Math 122 (3 hrs); 6 Hrs total

Math 140** or Math 229 should also be considered if student is thinking of going on to graduate school in the future. This is a prerequisite for some graduate courses.

V. Social Sciences: 9 Hrs

Multicultural 3 hrs

Sociology 200

International 6 hrs

Select any course from the approved list. The program recommends GEO 100 or 203.

Note: The Marshall Plan requires the student to take a Writing Intensive Course (WIC). It is suggested that the student take such a course when they take an International course, or another WIC should be chosen, such as integrated science.

Because the B.S. degree is an accredited program by RAC/ABET, students must be able to demonstrate "proficiency" in the areas of mathematics & statistics; chemistry, physics, and sciences; communication studies; psychology and physiology; and major field of study, i.e. safety. To demonstrate proficiency in the areas, a grade no less than a C is required. Students are reminded that a 2.00 GPA overall and in area of specialization is required.

B. Basic Studies for Safety Technology Program 50 Hrs.

CHM 211, Principles of Chemistry I 3

CHM 217, Principles of Chemistry Lab I 2

CHM 212, Principles of Chemistry II 3

CHM 218, Principles of Chemistry Lab II 2

CHM 204, General Chemistry II 3

PHY 201, General Physics I 3

PHY 202, General Physics Lab I 1

PHY 203, General Physics II 3

PHY 204, General Physics Lab II 1

Biology 104 or Biology 120 4

Any other College of Science Course with advisor approval 4

Management: 3

Student should choose ONE course from the following:

MGT 100, Introduction to Business 3

MGT 320, Principles of Management 3

MGT 419, Business and Society 3

MGT 424, Personnel Management 3

MGT 425, Industrial Relations 3

Statistics Courses 3

Student should choose ONE course from the following:

- MTH 225, Introductory Statistics 3
- PSY 223, El. Behavioral Statistics 3
- MGT 218, Business Statistics 3

Psychology Courses 6

- PSY 201, General Psychology 3
- PSY 420, Introduction to Industrial Organizational Psychology 3

Anatomy/Physiology PE 201 Scientific Foundations 3

Engineering-Related Courses 6

Student should choose ONE course from the following:

- ENGR 101, Engineering Graphics 3
- or
- ENGR 106, CAD for Engineers and Scientists 3

Student should choose ONE course from the following:

- ENGR 221, Engineering Economy 3
- IST 211, Modern Production 3
- IST 350, Manufacturing 3
- IST 450, Manufacturing Processes 3
- ENGR 213, Statics (Prerequisite: MTH 229) 3
- ENGR 201, Circuits I (Prerequisite: MTH 229) 4

Courses in this area MAY NOT be completed under the Credit/No Credit option.

Professional Safety Core	33
SFT 235, Introduction to Safety Education	3
SFT 340, Industrial Fire Prevention	3
SFT 372, Safety & Industrial Technology	3
SFT 373, Principles of Ergonomics	3
SFT 373L, Principles of Ergonomics Lab	1
SFT 454, Industrial Environmental Protection	3
SFT 454L, Industrial Environmental Protection Lab	2
SFT 475, Systems Safety	3
SFT 489, Process Safety Management	3
SFT 498, Environmental Safety and Health Legislation	3
SFT 499, Organization, Administration and Supervision of Safety Programs	3
SFT 490 (Capstone), Internship	3

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C. Options: Student must choose ONE of the following options 12

Occupational Safety Option
(select 12 hours)

Mining Safety Option
(select 12 hours)

SFT 375, Construction Safety I	3	MSF 410 Survey of Mining	3
SFT 378, Safety Evaluation	3	MSF 411 Mine Safety Program Analysis	3
SFT 465, Accident Investigation	3	MSF 412 Mine Safety & Health Legislation	3
SFT 497, Occ. Safety & Health Program	3	MSF 413 Mine Safety & Health Management	3
SFT 480-483, Special Topics	3	MSF 480-483 Special Topics	1-4
SFT 485-488, Independent Study	1-4	MSF 485-488 Independent Study	1-4
SFT 491-494, Workshop	1-4	MSF 491-494 Workshop	1-4

D. Other Courses as approved by your advisor

A minimum of 128 hours is required for graduation

TOTAL HOURS: 128 to 132

Safety Minor

Students wishing to obtain a minor in the field of Safety must take the following courses for a total of 19 hours:

SFT 235, Introduction to Safety Education	3 hrs.	
SFT 372, Safety and Industrial Technology (prerequisite: SED 235)	3 hrs.	
SFT 373, Principles of Ergonomics	3 hrs.	
SFT 373L, Principles of Ergonomics Lab		1 hrs.
SFT 465 Accident Investigation/Reconstruction (prerequisite: SED 372)	3 hrs.	
SFT 497 Occupational Safety and Health Program	3 hrs.	
SFT 499 Occupational Safety Program Management	3 hrs.	