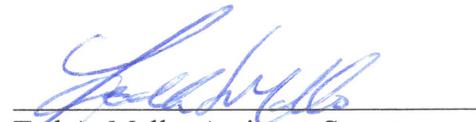


THE UNIVERSITY OF AKRON

RESOLUTION 6-10-16

Proposed Update of Ohio Revised Code 3345.81
Strategic Completion Plan

BE IT RESOLVED, That the recommendations presented by the Academic Issues & Student Success Committee on June 15, 2016, updating The University of Akron Completion Plan, be approved.



Ted A. Mallo, Assistant Secretary
Board of Trustees

June 15, 2016

THE UNIVERSITY OF AKRON

University Retention and Completion Plan

UNIVERSITY MISSION

The University of Akron, a publicly assisted metropolitan institution, strives to develop enlightened members of society. Offering comprehensive programs of instruction from associate through doctoral levels, the University pursues a vigorous agenda of research in the arts, sciences, and professions; and provides service to the community. The University pursues excellence in undergraduate education and distinction in selected areas of graduate instruction, inquiry and creative activity.

STUDENT BODY PROFILE

The University offers many programs from associate degrees to baccalaureate degrees of varying competitiveness, to world-ranked graduate programs. For students seeking bachelor's degrees, college preparedness has been increasing as the University has put in place Pathways for Student Academic Success, a multi-year strategy beginning in fall 2012, to guide students to the academic path best suited to their needs.

Total UA enrollment for fall 2015 was 25,177: 21,158 undergraduates, 4,019 graduate and professional.

- Full-time students made up 74 percent of the student body; part-time students, 26 percent.
- Ethnically underrepresented students (African American, American Indian, Asian American, Hispanic American, Native Hawaiian, and two or more races) made up 19 percent of the student body.
- Adults (25 years and older) made up 14 percent of the undergraduate population.
- First-generation students represented approximately 24 percent of undergraduates (26 percent of first-time freshmen).
- Sixty-three percent of new, bachelor's degree-seeking freshmen entered UA with a "college-ready" profile (ACT 21 or higher; HS GPA 3.0 or higher).
- Thirty-six percent of our undergraduate students were Pell eligible (41 percent of first-time freshmen).

The faculty and staff at The University of Akron value student development and academic success above all other goals. As a metropolitan university, UA is experiencing many of the challenges that higher education faces today, particularly for public institutions that are inclusive in nature.

The retention and completion strategies selected for this document have been chosen based upon the following principles:

1. Accepts a broad range of student-preparedness levels
2. Strives for inclusive excellence to support a very diverse population of students
3. Strengthening admissions criteria at a gradual pace in response to low completion rates of severely underprepared students
4. Increased focus on retention and completion with particular attention to the student's first year, where most attrition occurs
5. Development and Implementation of specific strategies selected based upon best practices and literature review of student development and persistence.

BARRIERS TO PERSISTENCE AND COMPLETION

1. Part-time Enrollment

Over 6,680 of our students attend part time, and many juggle work and family responsibilities. In Ohio, part-time students seeking a bachelor's degree have eight-year graduation rates less than 15 percent. This measurement does not include the challenges in timely degree completion and accurate tracking for students who earn credits from several institutions.

2. Academic Preparedness

About 20 percent of all first-time freshmen require at least one remedial course. In fall 2015, 37 percent of entering bachelor's degree-seeking, full-time freshmen on the main campus were below the college-ready level (ACT 21 or higher; HS GPA 3.0 or higher). Our general education mathematics requirement, which includes the mastery of at least college algebra, presents a significant challenge for our students. Between 2012 and 2015, on average, nearly 15 percent of our entering freshmen were required to take a remedial course in math. In addition, over 18 percent are required to repeat at least one mathematics course during their academic career.

3. First Generation and Pell Eligibility

The University's large percentage of first-generation and Pell-eligible students faces particular challenges in both the transition to and persistence through college. Approximately 24 percent of our students are first-generation college attendees, and at least 36 percent are Pell eligible.

The retention and completion goals of this plan offer a clear vision for improving student academic success and eliminating the aforementioned barriers to completion at the University,

with great attention to this group of students. Throughout this plan, several engagement strategies will be outlined to increase first-year retention, persistence to degree and career placement that are designed to meet the specific needs of this sector.

PROGRESS TOWARD INITIAL RETENTION AND COMPLETION GOALS

Our retention and completion goals for 2014-2016 were met with moderate success and will continue to be fundamental goals.

1. The first-year retention rate goal of 72 percent was exceeded by 2 points. As of fall 2015, the first-year retention rate is 74 percent (first-time, full-time Akron Campus bachelor's-degree seeking students).
2. Although the six-year graduation rate goal was 42 percent, the current six-year graduation rate is 41 percent, slightly above the range for the previous ten years (first-time, full-time Akron Campus bachelor's degree seeking).
3. The job/graduate school placement rate goal of 75 percent was exceeded by 3 points. As of fall 2015, the job/graduate school placement rate is 78 percent (bachelor's degree recipients).
4. To date, the development of a strategy to reduce student cohort achievement gaps, particularly in first-year retention, remains a priority.

RETENTION AND COMPLETION GOALS FOR 2016-2018

Our retention and completion goals for 2016-2018 are both aggressive and realistic:

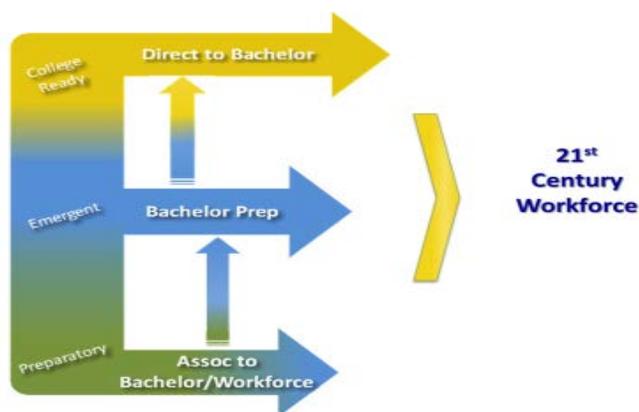
1. Develop and implement a scholarship appeal process;
2. Develop a strategy to close student-preparation gaps, particularly through outreach to the high schools;
3. Decrease time and number of credit hours to degree completion;
4. Revision of General Education curriculum;
5. Enhance experiential learning and transcript documentation of experiential learning as a key element of increased career placement of graduates; and
6. Extend learning communities throughout the academic career.

RETENTION AND COMPLETION STRATEGIES

1. Pathways to Student Academic Success

Guiding students to the academic pathway that will contribute most to their success is paramount to providing a strong Akron experience. The need for the Pathways strategy was evident in the data collected at the University, as it was found that the most underprepared students (ACT<17 and HS GPA<2.5) had less than a 10 percent chance of obtaining a

bachelor's degree in six years. The Pathways strategy addresses the varied student preparedness levels by offering different entryways with tailored academic support.



The Inclusive Pathways approach addresses college preparedness on the basis of several academic indicators, and identifies students according to their preparedness levels: College-ready, Emergent and Preparatory.

College-ready students

- ACT scores of 21 or greater
- Demonstration of high achievement throughout high school and ready to pursue academically challenging coursework that leads directly to degree completion

Emergent students

- ACT scores ranging from 17 to 20
- High school GPA demonstrates the ability and desire to achieve through personal effort, benefitting from admittance as pre-majors and the receipt of intentional, intensive, and if necessary, intrusive support for major readiness.

Preparatory students

- ACT scores of 16 and below
- Academic performance requires significant additional development and specialized support. Because of additional needs, it is noted that these students often bear higher costs because of the additional coursework required.

Our fall 2015 first-time, full-time (FTFT), bachelor's degree-seeking students had an average ACT of 23.4 and a 3.0 high school grade point average. With a strategic focus on the pathways strategy, the University remains focused on increasing first-year retention and six-year graduate rates.

2. Intentional Academic Advising

Advising offices are organized to focus on students' level of preparation and their corresponding needs. The benefits of this advising structure, designed for pre-majors in the Division of Student Success, include: 1) advising is tailored to students' academic preparedness; 2) the advising model ensures increased student contact and more meaningful contact; 3) students are connected to majors and potential careers during the first year; and 4) advising centers and college advisors work together to streamline student's pathway to an appropriate major.

3. First-Year Student Success Seminar

The University offers a student success course, The Akron Experience: University 101, that combines topics related to first-year experiences with career-planning elements to engage students early. The Akron Experience: University 101 is required of all new baccalaureate degree-seeking freshmen admitted on the emergent and preparatory pathways. College-ready students are strongly encouraged to participate in this course.

4. Expanded Learning Communities

Students participating in learning communities engage in structured learning experiences that foster connections with their peers, establish relationships with their faculty members and academic advisors, and enable them to form positive connections to the campus community. Utilizing the information gathered from these experiences enables us to identify what aspects of the learning communities influence retention. The UA data indicate that the *living learning* community structure shows much promise in increasing first-year retention rates, with current success at 72 percent.

Moving forward, faculty teaching in learning communities will work in collaboration to increase integration across the curricula and provide experiences that promote both the academic and social integration of first-year students. In addition, a more comprehensive assessment of the program will include qualitative data from participating faculty with assessment of first-semester persistence, as well as first-year retention, GPAs and overall student satisfaction for all student participants.

5. Early Alert Initiatives

Research has demonstrated that the earlier students have contact with full-time faculty, the more likely they are to remain in school and succeed. The combination of full-time faculty contact with professional advisor and staff guidance and intervention, will improve retention and persistence. Although faculty and staff contact take many forms, measureable feedback

in relation to student progress includes the use of early-term progress reports, primarily for the 100- and 200-level courses, where faculty enter satisfactory or unsatisfactory indicators during the second to fifth week of the term.

6. Alternative Forms of Credit

Decreasing the time to degree completion is a top priority, and several initiatives are currently in place. College Credit Plus, Advanced Placement, Career-Technical Credit Transfer, Akron Early College High School, College Level Examination Program (CLEP), credit by exam, International Baccalaureate and military training and experience can be used to allow a student to complete a bachelor's degree in just three years. In 2014-2016, over 4,000 students were awarded more than 47,000 semester credit hours.

7. Decrease Number of Credit Hours to Degree Completion

The University of Akron is working diligently to streamline graduation requirements so that most bachelor's degree programs can be completed in as few as 120 semester credit hours and associate degree programs can be completed within 60 semester credit hours, without compromising accreditation requirements.

	Semester Credit Hours Required for Degree Completion	Number of Programs	Percentage of Programs
Bachelor's Degree Programs	127-152	159	67.66
	121-126	9	3.83
	120	67	28.51
Associate Degree Programs	66-72	22	33.85
	61-65	24	36.92
	60	19	29.23

8. Peer Mentoring Program

The Peer Mentoring Program, coordinated through the Office of Multicultural Development, has increased its number of mentored students to nearly 800. Peer Mentors are successful sophomores, juniors and seniors who have demonstrated the ability to relate well with first-year students from varied ethnic, social and cultural backgrounds. They serve as role models who lead and support incoming first-year students by setting a positive academic example; encouraging mentees to make good decisions as well as utilize campus resources that include tutoring, counseling, meeting with their academic advisors and faculty members; and getting involved with campus activities.

9. Learning Assistants Program

The learning assistants program is designed to help students succeed in the traditionally difficult courses that tend to be the “gateway” courses to successfully completing the degree program. Compared with students who do not have learning assistants, students with learning assistants earn three to four more credits per semester, are less likely to drop courses and have a greater chance in successful course completion.

10. Retention and Completion Grants

The retention and completion grant program targets a group of academically eligible students at risk for attrition. Specifically targeted are students who (a) are at risk for being dropped for non-payment prior to the beginning of each semester; (b) have completed at least 15 credits in good academic standing; (c) are Pell eligible; and (d) have unpaid balances that typically total less than \$2,000. Our research suggests the top-two reasons students stop out of college are financial and personal issues. Additionally, as is the case at institutions across the nation, a majority of UA students who are dropped from classes for non-payment are in good academic standing and simply cannot return due to finances.

11. Finish in Time

Finish in Time is a campaign intended to move the culture of the University to on-time completion. It is both a communications and a marketing strategy. The target audiences include students, parents and the campus community. The benefits are clear. Students who complete on time accrue less debt and reach their career or graduate school goals sooner. The percentage of first-time, full-time, Akron campus baccalaureate degree-seeking students taking 15 or more credits in their first semester has increased from 58.9 to 74 between 2012 and 2015.

12. Career Placement of Graduates

It is our responsibility to ensure our graduates are well prepared for the job market. That is, students must understand themselves and know what career areas fit their personalities, interests and skills. Important to this discovery process is the opportunity to have relevant career-related work experiences, like internships and co-ops, which are highly desirable to employers. In survey and interview data from 2014-2015, employers recruiting at The University of Akron reported the number-one student attribute they look for is career-relevant experience. Currently, 81 percent of University of Akron students report participating in a career-relevant learning experience prior to graduation. These include internships, co-ops, practicums, assistantships, student teaching, field experiences, clinical experiences and education-abroad experiences.

Based on a combination of UA survey data that students are asked to complete first immediately prior to graduation (first destination survey, over 95 percent response rate) the conservative job/graduate school placement rate is 78 percent. UA is committed to improving the placement rate to 80 percent by 2018.

13. Retention Analytics

The University has contracted with a retention analytics system: the Student Success Collaborative (SSC) from the Education Advisory Board (EAB). In our research and RFP process, we found key attributes of this system that could have a positive impact on student retention and completion.

EAB developed this product as a tool to focus advisor efforts to best impact student success. By measuring success in gateway courses, the system uses predictive analytics to identify challenges and solutions for student academic success. The system predicts graduation rates based upon students' performance and can suggest other majors in which students may perform well.

14. Akron Attainment Award

In order to make education at The University of Akron more attainable for students, the Akron Attainment Award was introduced for the fall 2016 freshman class. Students who have a funding gap between the cost of tuition and fees for the academic year and the financial aid sources that they have been awarded will be considered for this opportunity. Students and parents must first apply for all of the financial aid sources available to them including grants, Federal Student Loans, Federal Parent Loans, and private educational loans. For those families that cannot secure enough funding to meet the cost of tuition and fees, the Akron Attainment Award may be awarded to cover their remaining balance.

Retention and Completion Metrics

Metrics have been developed and separated into two general categories: general retention and completion metrics that will be reported for various bachelor's degree-seeking student cohorts and initiative-specific metrics. The student cohort groups will include remedial, at-risk pre-majors (ACT 17 or below and high school GPA of 2.5 or below), bottleneck nursing and engineering pre-majors, college-ready pre-majors (ACT 21 and a 3.0 high school GPA), first generation, Pell eligible, African American, Hispanic, adults 25+ years, learning communities and international.

General Retention and Completion Metrics:

- First-semester retention
- First-year retention
- Percentage of full-time students completing 15+ credit hours per semester
- Percentage of full-time students completing 30+ credit hours in the first year
- Percentage of pre-majors matriculated into majors at 30 and 48 credit hours

WORKFORCE DEVELOPMENT PRIORITIES

The University of Akron has over 30 programs that align with the nine JobsOhio key industries. An important ingredient to the success of the programs includes opportunities for students to engage in internships and co-op experiences. About half of the 30 programs have a required internship or co-op component. We will focus on increasing these opportunities for students, as our data indicate the positive impact on career placement. One example includes the successful hiring rate of co-op students; 50 percent of our students are hired by their co-op employer. Below is a just a small sampling of degrees offered at The University of Akron that align with each industry.

Advanced Manufacturing

Manufacturing Engineering Technology

This application-oriented program provides the solid technical foundation necessary to work in computer-based manufacturing.

- Degree prepares students to work and communicate with engineers, scientists and production personnel.
- Core curriculum covers such topics as:
 - work measurement
 - manufacturing computer applications
 - quality control
 - robotics
 - manufacturing work cells
 - lean manufacturing

Aerospace and Aviation

Aerospace Systems Engineering

This program, among the first of its kind, is designed to train engineers to become future project managers and program managers for the aerospace industry with either integrator or supplier companies. The rigorous curriculum offers a unique blend of courses in mathematics and science, business and systems, and mechanical and aerospace engineering.

Mechanical Engineering

The undergraduate mechanical engineering program is designed to provide the student with comprehensive knowledge of the fundamental principles of all aspects relating to fluid-thermal and mechanical sciences and the application of these principles to pertinent problems. A large number of corporations and industries throughout the country participate in the department's five-year cooperative education program. This program gives students on-the-job experience in an industry directly related to their studies.

The undergraduate curriculum can be divided into four main areas: general studies requirements (29 semester credits), mathematics and science requirements (30 credits), engineering requirements (66 credits), and electives (12 credits). In addition to the regular program, students also may choose a program with special emphasis in polymer science and polymer engineering or motion and control. In this option, all mechanical engineering electives are replaced by appropriate electives in polymer science and polymer engineering or motion and control. Students also may use technical and free electives for this option.

Applied Mathematics

Core courses provide in-depth understanding of one or more areas in the mathematical sciences.

- Degree program can be tailored to an area of specialization, such as:
 - engineering
 - physics
 - chemistry
 - computer science
 - social science
 - economics
 - business
- Coursework prepares students for graduate school or fields such as engineering, physics, computer technology, business, law, medicine and the social sciences.
- Bachelor of Science/Master of Science in Mathematics program — this accelerated option enables a student to earn a bachelor's degree and a master's degree in five years.

Agribusiness and Food Processing

Didactic Program in Dietetics

This didactic program provides the core knowledge for the Registered Dietitian as required by the Accreditation Council for Education in Nutrition and Dietetics in order to earn a verification statement. After acquiring a verification statement and graduating from the didactic program,

students are prepared to apply for and must complete a dietetic internship before they are eligible to take the National Dietetic Registration Examination.

Supply Chain/Operations Management

Supply chain management is the coordination and integration of the activities that procure materials and services, transform them into intermediate and final products, and deliver them to the customer. It involves the management of:

- the flow of materials and products
- the flow of money
- the flow of information
- relationships among the organizations comprising the supply chain

The overall goal of supply chain/operations management is to impact the organization's bottom line in a positive way while delivering the best services to customers at the lowest possible cost. An undergraduate degree in supply chain management will prepare students to pursue exciting careers as supply chain professionals. The degree will also prepare students for further graduate study or a certification.

Automotive

Corrosion Engineering

UA has launched the nation's first baccalaureate program in corrosion engineering. The program incorporates a multidisciplinary curriculum to train students to understand the origins of corrosion and manage its effects. Corrosion engineering requires a broad knowledge and cuts across many disciplines. Students receive instruction in:

- chemical engineering
- mechanical engineering
- civil engineering
- electrical engineering
- physics
- modeling

Along with a multidisciplinary approach that emphasizes strong science and engineering principles, the program integrates a strong management component to help our students develop the skills that are necessary for executing "real world" projects.

Computer Science

Computer science deals with the storage, transformation and transfer of information. It is often considered to be a branch of engineering because of its applicability. Every course requires students to write computer programs and use a variety of computer languages, hardware and operating systems to prepare for work in industrial, commercial, government or university settings.

Biohealth

Biomedical Engineering

Biomedical engineers study and perform research on the engineering aspects of biological systems to create new devices and procedures to improve health and quality of life. Our program allows undergraduate students to specialize in biomechanics, biomaterials and tissue engineering, or instrumentation, signals and imaging.

Biology

Biology is the fastest-growing field of science today—its impact is carried to many fronts—medicine and health care; the environment and climate changes; and global population and food sources. Core courses provide the fundamentals of modern biology (e.g., principles of biology, evolution, ecology, cell and molecular biology, genetics).

- A student can earn a bachelor of science degree with a major in biology or natural sciences, and within these programs will be able to choose such courses as:
 - ecology and evolution
 - molecular biology
 - population biology
 - field ecology
 - advanced genetics
 - biology of behavior
 - comparative biomechanics
 - microbiology
 - animal physiology
 - aquatic biology

Coursework will prepare students for professional schools, such as medical, dental, veterinary and pharmacy. In collaboration with the LeBron James Family Foundation College of Education, our department also prepares students to teach high school biology.

Statistics

Statistics is the discipline that deals with the collection, analysis, interpretation and presentation of data. It can be applied to a wide array of academic areas, from biology, chemistry and anthropology to geography, political science and sociology. Because it is used as a basis for logical, informed decisions, statistics has wide application in the public and private, profit and nonprofit sectors of society.

Because virtually every profession depends on verifiable, reliable and instructive statistics—mathematicians, scientists, educators, engineers and more—those with degrees in statistics can rely on good prospects for employment. The University of Akron's statistics program prepares

students for graduate studies or a successful career in private industry as well as federal, state or local government.

Our graduates are prepared for advanced studies in statistics and related disciplines and for the diverse uses of statistics in business, industry, government, scientific research and society.

Energy

Geology

Geology is the study of Earth's materials, structures and processes and how they have changed through time. This knowledge may be applied to exploration for natural resources, including metals, petroleum and water; understanding natural hazards such as earthquakes, volcanoes and landslides; addressing problems associated with environmental contamination; and investigating Earth's history to understand the evolution of life and global climate change. Geologists are employed by natural resource companies, environmental consulting firms, government agencies, nonprofit organizations and universities.

Core courses provide the fundamentals in:

- physical and historical geology
- mineralogy and petrography
- structural geology and plate tectonics
- sedimentology, paleontology and stratigraphy

A degree program can be tailored to a major field of interest by taking additional courses in the supporting sciences, mathematics and engineering fields.

Civil Engineering

Civil engineers plan and design large-scale projects like bridges and power plants, study and solve societal and environmental challenges like providing safe drinking water, and design and maintain transportation systems.

Our undergraduate program allows students to tailor their education toward specialties like structural, water resources and hydraulic, geotechnical, environmental and transportation.

The graduate program is designed to be flexible enough to meet the needs of students with varied backgrounds and prepare them for a career in industry, government or academia.

Construction Engineering Technology

A degree in construction engineering technology prepares students for managerial positions in inspection, cost estimating, supervision and more.

- Core curriculum focuses on:
 - mathematics

- physics
- technical drawing
- communications
- construction concepts and principles

Financial Services

Financial Services

The Financial Services major teaches students how to apply financial principles to the firms, services, and products that serve the individual and business consumers. Such services include banking, securities brokerage, investment advisers, and insurance.

Financial Services focuses on how to apply the principles of finance to the firms, services and products that serve the individual and business consumers. Such services include banking, securities brokerage, investment advisors, real estate, insurance and personal financial planning.

Students choosing to specialize in real estate or personal financial planning have the opportunity to sit for and be licensed as an Ohio real estate agent or to sit for the Certified Financial Planner Certification Examination to earn the CFP® designation.

Examples of financial services career opportunities include:

- security brokers
- portfolio managers
- bank loan, credit, and operations managers
- insurance firm managers
- commercial and residential real estate portfolio managers
- financial planners for individuals

Accounting

Accountants provide an array of financial services to businesses, nonprofit corporations, governments, industry and even private citizens. The curriculum is based on broad theoretical principles and applied practices. Study includes:

- core business fundamentals such as finance, marketing, management principles, operations management, quantitative business analysis, business law and strategy
- financial reporting
- cost management
- accounting transaction cycles and business processes
- business risk, internal controls and auditing
- information systems risk, security, controls and assurance
- taxation

The School of Accountancy's undergraduate accounting degree prepares students to pursue such certifications as certified public accountant (after completing the state-mandated 150

semester hours of college credits), certified management accountant, certified internal auditor, and certified information systems auditor. We offer an accelerated Bachelor of Science/Master of Science in Accounting degree as a seamless path toward obtaining the 150 semester credit hours needed to sit for the certified public accountant examination.

Economics

Economics is the study of how society, businesses, organizations and individuals produce, exchange, buy and sell goods and services. A Bachelor of Arts in Economics earned at The University of Akron prepares students for careers in the field through the following.

- Core courses in theory, quantitative and computer methods
- Development of analytical and problem solving skills
- A program tailored with electives geared toward a particular career track in:
 - business
 - banking and international economics
 - public policy
 - graduate school

Information Services and Software

Information Systems Management

Information Systems professionals perform the technology-related activities of companies. They perform a variety of duties, from constructing detailed business plans to overseeing network and Internet operations. Working with upper management, they define the technical goals of the company and plan how to accomplish those goals. In addition, they maintain corporate websites; analyze the information needs of organizations; and supervise systems analysts, programmers, technical support and other employees. An undergraduate degree in information systems will prepares students to pursue an exciting career as an information systems professional. The degree also prepares students for further graduate study or technology-specific certifications.

Computer Engineering

In addition to traditional large computer applications, devices containing some form of embedded computing system are becoming pervasive in our society. Computer engineers design and develop hardware and software for all of these systems, ranging from software applications to communication networks to components in computing systems to small embedded sensors. Branches of computer engineering include:

- operating systems
- embedded systems design
- digital circuits

- algorithms
- software design
- computer architecture

Important applications include:

- wired and wireless networks
- simulation
- automation
- digital control
- sensing
- robotics
- “apps,” data management

Our comprehensive curriculum prepares students to identify, formulate and execute solutions to real-world problems. Students learn how to use modern engineering tools in well-equipped laboratories, with activities that reinforce the concepts learned in the classroom. The curriculum emphasizes design and teamwork, and culminates in a capstone senior design project that integrates the material learned in earlier courses. Our well-established co-op program enables students to strengthen the connections between theory and practice in a professional setting, and provides valuable industrial experience.

Electrical Engineering

Every aspect of modern life is influenced by electrical engineers. They design and develop systems ranging from massive power grids and global communications networks to tiny integrated circuits inside computers and personal electronics. Branches of electrical engineering include:

- communications
- controls
- electromagnetics
- electronics
- power systems

Important applications include:

- power generation and distribution
- sustainable energy systems
- manufacturing automation
- aerospace systems
- robotics
- sensors and instrumentation
- imaging systems

Our comprehensive curriculum prepares students to identify, formulate and execute solutions to real-world problems. Students learn how to use modern engineering tools in well-equipped laboratories, with activities that reinforce the concepts learned in the classroom. The curriculum emphasizes design and teamwork, and culminates in a capstone senior design project that integrates the material learned in earlier courses. Our well-established co-op program enables

students to strengthen the connections between theory and practice in a professional setting, and provides valuable industrial experience.

Polymers

Chemistry

The Department of Chemistry offers five undergraduate degrees as well as a minor in chemistry. The Bachelor of Science degrees in Chemistry and Chemistry with Polymer Option offer greater concentration in chemistry and are accredited by the American Chemical Society. The 3+2 Bachelor of Science in Polymer Chemistry is designed to provide a B.S. in three years, leading to admission into the M.S. program in the College of Polymer Science and Polymer Engineering. The Bachelor of Science in Biochemistry bridges the chemistry and biology disciplines and adheres to the standards established by the American Society of Biochemistry and Molecular Biology. The B.A. degree allows students sufficient time to minor in another subject. Useful minors include biology, business or a foreign language.

Chemical Engineering

Chemical engineering requires a broad knowledge of science to solve problems involving the production or use of chemicals, improving the environment and making energy conversion more efficient.

- Core curriculum includes mathematics, science and chemical engineering fundamentals.
- Focus on practical aspects of engineering, including:
 - How to design and cost manufacturing plants;
 - Analyze and interpret experimental and production data; and
 - How chemical processing affects people and the environment.

Physics

Physics concerns the core workings of the universe and is the foundation for chemistry, the earth sciences, biological sciences and social sciences.

- Core courses provide an understanding of physical principles and their applications.
- The program can be enhanced in two research areas — chemical physics and polymer physics.

With a Bachelor of Science degree in Physics, students will be ready to pursue graduate studies or a successful career in the workplace. Options for graduate studies include physics, biophysics, medical physics, materials science, chemical physics, chemistry, applied mathematics, polymer science/engineering, and many other engineering fields.