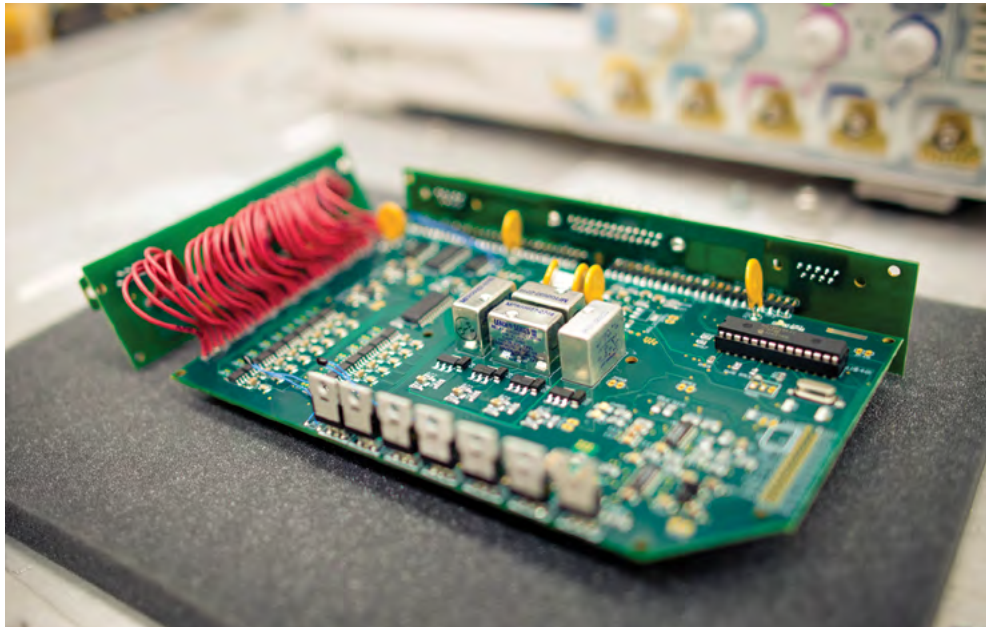
Michigan Technological University

MICHIGAN TECHNOLOGICAL UNIVERSITY'S

FY2022 Five-Year Capital Outlay Plan



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MISSION STATEMENT

Mission

The mission of Michigan Technological University is to create solutions for society's challenges by delivering action-based undergraduate and graduate education, discovering new knowledge through research, and launching new technologies through innovation.

VISION

Michigan Tech is a globally recognized technological university that educates students, advances knowledge, and innovates to improve the quality of life—and to promote mutual respect and equity—for all people within the state, the nation, and the global community.

93.5%

93.5% five-year average job placement rate for undergraduates

TOP 20

Top 20 in the nation for colleges that pay off the most (CNBC)

280K

280,000 square feet of research labs on campus

MTU Flex: Michigan Tech's Response to COVID-19

Michigan Tech's students, faculty, and staff returned to campus for face-to-face learning and events for the 2020-21 academic year. COVID-19 taught us that as an institution, we can respond with flexibility in the face of a crisis. We've taken what we've learned and created an ongoing proactive response we call the MTU Flex initiative (mtu.edu/flex).

MTU Flex is built on Michigan Tech's institutional agility:

- We pivot between face-to-face and remote instruction when necessary.
- We implemented a comprehensive, strategic health screening process to detect, monitor, and trace COVID-19 on campus.
- In April we stood up the MTU COVID-19 Testing Lab to expedite testing on campus and in the region.
- Behavior on campus is guided by our Health and Safety Levels, which are based on the COVID-19 public health situation on campus and in the community, the academic calendar, and the strength of the local health care system.

Michigan Tech emphasizes hands-on, first-person learning. This situation has called on us to expand what that looks like. Our focus continues to be what's best for the health, well-being, and education of our students. That won't change.

Michigan Tech's Ongoing Institutional Initiatives:

- Health and Quality of Life
- Data Revolution and Sensing
- Policy, Ethics, and Culture
- Education for the 21st Century
- Diversity and Inclusion
- Autonomous and Intelligent Systems
- Natural Resources, Water, and Energy
- Sustainability and Resilience
- Advanced Materials and Manufacturing

Health and Quality of Life

The H-STEM Complex—Phase I

"As the Upper Peninsula's major research university, Michigan Tech's faculty and staff identified quality of life and health outcomes as a major component of our five-year growth plan. The H-STEM Complex can accelerate our efforts to create technological solutions to enhance health and quality of life, not only for our local communities, but for the entire state."

–Richard Koubek
Michigan Tech President

During the past two decades, Michigan Tech's faculty and students have become increasingly involved in developing technological innovations that improve the human condition. The University's Five-Year Capital Outlay Plan will support ongoing efforts and contribute to future growth in the state's capacity to design, develop, and deliver human-centered innovations.

In late 2018, the Michigan Legislature granted planning authorization for the University's H-STEM Engineering and Health Technologies Complex (H-STEM Complex). The H-STEM Complex will support Michigan Tech's integrated educational programs in health-related and human-centered technological innovations.

The H-STEM Complex will comprise newly constructed shared and flexible lab spaces, co-located with renovated classrooms and learning spaces in Michigan Tech's Chemical Sciences and Engineering Building. The schematic design and programming statement is complete and has been submitted for review by the Michigan Department of Technology, Management and Budget (DTMB).

Health and Quality of Life

Vibrant Community

We learn more every day about the impact that stress, eating habits, and routine functions like sitting and sleeping have on our long-term health. Wellness is multifaceted and often a community endeavor. As a University, we're examining the ways in which humans can build vibrant communities of well-being while simultaneously creating technology to improve the human condition.

> **"There's a big role communities can play in the health of their residents.** Chronic diseases don't occur in isolation, but rather are closely affiliated with an individual's culture, behavior, and environment."
>
> **–Guy Hembroff**
> Director of the Health Informatics Graduate Program

A strong community increases an individual's quality of life, and healthy people foster a nourishing community. Research shows that students do best—both in their studies and later in their careers—when they feel a sense of belonging on their college campuses. Faculty and staff thrive in their positions when they feel supported and have a sense of purpose.

Integrating well-being into our curriculum teaches healthy habits and creates a feeling of connection in students. Initiatives that provide mentoring and professional development for faculty and staff keep them excited about their careers and intellectual endeavors.

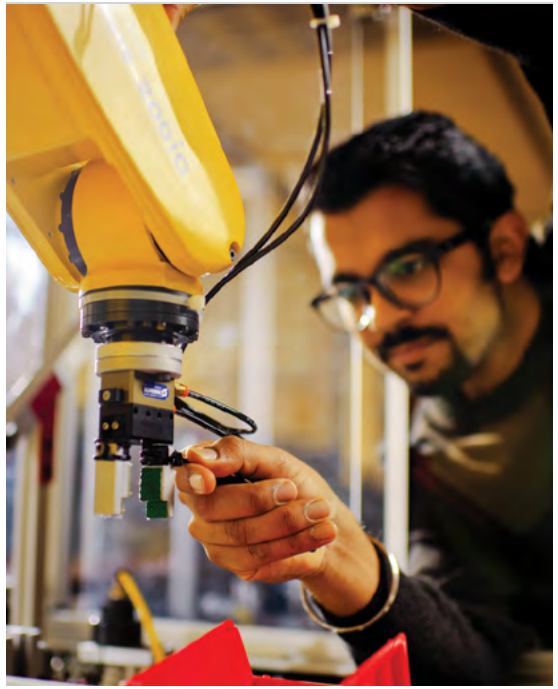
Many of those endeavors involve research to improve the human condition. National Institutes of Health (NIH) funding for health research on campus has tripled in just the last five years. Researchers are exploring diverse solutions for some of the greatest challenges to health and well-being, including diabetes, Alzheimer's disease, lack of sleep, and anxiety. And unlike many other universities, our health research labs involve students—undergraduate and graduate—in meaningful ways.

For students, exploring how to do research builds belonging as well as marketable skills. For faculty and staff, research that matters in people's daily lives is filled with purpose. **For everyone, the goal is shared enthusiasm, rigor, and well-being.**

Data Revolution and Sensing

The College of Computing

> **"Technology is Michigan Tech's middle name.** Technology, and its breadth of applications, are the connective tissue between engineering, science, and humanities. Technology enables cross-pollination and, in turn, many of the innovations that shape our society today."
>
> **– Adrienne Minerick,** Dean of the College of Computing



Computing and computer science are no longer subfields of engineering, math, or science; they're suffused in nearly every academic discipline. Technology has reshaped fields like archaeology, communications, and the arts, as well as forestry and other natural resource domains.

No matter a student's major, **computational skills are a job-market requirement**. It's estimated that more than 80 percent of middle-skill jobs—those that require more education or training than a high school diploma—require digital skills, and digital literacy is a minimum standard in nearly every middle-skill sector. The job market for computer and information systems managers is projected to grow 12 percent between 2016 and 2026, which is faster than the average for any other occupation.

In recognition of cyber technology's role in our lives, **Michigan Tech launched a new College of Computing** on July 1, 2019. The first and only college of its kind in the state of Michigan, the College of Computing intends to meet the technological, economic, and social needs of the 21st century—and answer industry demand for talent in AI, software engineering, data science, and cybersecurity.

With a mission to prepare students for lifelong prosperity and employability through relevant, contemporary academic programs in computing and cyber technologies—and to support and drive cutting-edge, market-centered research in computing fields—the College of Computing is transforming the University into an academic institution that reflects the technological, economic, and social realities of the 21st century.

Policy, Ethics, and Culture

The Institute for Policy, Ethics, and Culture

Algorithmic culture. Medicine and biotechnology. Autonomous and intelligent systems. Surveillance and privacy. The technological changes and disruptive forces of the 21st century are urgent, complex, and vast. To explore the policy implications, ethical considerations, and cultural significance of life in a connected world, Michigan Tech launched a new Institute for Policy, Ethics, and Culture (IPEC) in fall 2019.

"An essential, unique feature of IPEC is its flexibility–its ability to both proactively identify emerging issues and to respond to them quickly with an interdisciplinary focus."

–Jennifer Daryl Slack
IPEC Director and Distinguished Professor of Communication and Cultural Studies

"Technology is a new culture, it's not just a backdrop. People tend to take extreme stances–they celebrate technology or they criticize it. But the best path forward is a participatory stance, one where people–not algorithms–make choices about when to use technology, when to unplug, and what data is or isn't shared."

–Soonkwan Hong
Associate Professor of Marketing

"Technological advances are necessary, but not sufficient to address global challenges related to human well-being, ecosystem health, and a changing climate. IPEC will foster innovative and forward-thinking policies, grounded in science and cultural insight. A primary goal of IPEC is to guide the ethical development and deployment of technology toward the 'future we want.'"

–Sarah Green
Professor of Chemistry

Education for the 21st Century

> "As I've navigated higher education myself as a student, teacher, researcher, and administrator, I've grown to appreciate the value of an education that challenges students to struggle with the messy problems of engaging with the bridge between themselves and the real world, bringing in aspects of the humanities, arts, and social sciences, in ways that develop not only competence in a given field, but autonomy and relatedness."

–Lorelle Meadows
Dean of the Pavlis Honors College

We live in a time where change is constant, rapid, and often disruptive. **Technologies have evolved** to take on our more mundane tasks; artificial intelligence and automation continue to enter the mainstream, displacing humans in fields for which students are currently preparing while simultaneously creating jobs few are trained for.

To prepare the student of today to address the needs of society at a level that machines cannot, Lorelle Meadows, dean of Michigan Tech's Pavlis Honors College, says it's imperative to consider the whole student—not only their development as highly skillful and knowledgeable participants in their chosen fields, but also their growth as individuals with the competencies to manage uncertainty and change.

With this in mind, the Pavlis Honors College identified **nine key abilities** that every student in the College is encouraged to cultivate through critical reflection, design thinking, and interdisciplinary collaboration:

- Value diverse perspectives
- Engage in mentorship
- Communicate empathetically
- Welcome challenge
- Learn deeply
- Embrace ambiguity
- Balance confidence and humility
- Know yourself
- Act with purpose

Pavlis students intertwine their major with a series of experiences they design themselves and that build on their skills, interests, and values. Honors college staff leverage Michigan Tech's great network of faculty, staff, and alumni to build partnerships and create opportunities for students.

Meadows is leading a working group to implement the nine honors abilities across the Michigan Tech campus and curricula. The goal: Make sure every Michigan Tech graduate is an agile worker—self-aware, resilient, and confident. A global citizen. A lifelong learner.

Diversity and Inclusion

We hope to change the face of STEM.

A STEM degree has its advantages. A recent study by the Pew Research Center indicated that workers in STEM fields enjoy a pay advantage over workers in non-STEM fields, and that STEM training in college is associated with higher earnings.

That same report, however, showed that in computer-related jobs—the highest-paying and fastest-growing STEM sector—the number of women was decreasing. The Pew report also revealed that Blacks and Hispanics are underrepresented across all sectors of the STEM workforce, except for health care practitioners and technicians (where they still accounted for only 11 percent of the workforce).

Unfortunately, the Pew report was not shocking; the lack of diversity in STEM fields is well known and well documented. Michigan Tech—widely referred to as a STEM school—faces the same challenge. In 2020, our incoming undergraduate class was the most diverse in University history, yet women account for less than 30 percent of our student body, and underrepresented minorities account for roughly 10 percent of undergraduate enrollment.

We know we have work to do. Our objective as an institution is to create and maintain learning, working, and living environments where students, faculty, and staff from diverse backgrounds feel they can thrive. **To reach this goal, we are:**

1. Committing as an institution to the sustained support of diversity, equity, and inclusion
2. Implementing a cross-campus education initiative for all members of the Michigan Tech community
3. Increasing the diversity of faculty, staff, and the student body through targeted and well-supported recruitment strategies
4. Collaborating and supporting retention programs and initiatives designed to educate and support a diverse campus community

In working toward these goals, **we hope to change the face of STEM.**

Autonomous and Intelligent Systems

Beyond the traffic signs, outside the yellow lines, autonomy at the ends of the Earth—Michigan Tech excels in unstructured environments.

Perhaps no products of the 21st century are more relevant to Michigan and the Great Lakes region than autonomous vehicles and vessels.

The Ford Motor Company recently pledged to have a fully functional self-driving car on the road by 2021, and at a 2017 Investor Day presentation, General Motors made it clear it was going "all in" on autonomous vehicles. And autonomy isn't limited to land alone. Out on the water at Michigan Tech's Marine Autonomy Research Site (MARS), industry, governments, and foundations are investing in autonomous vessel research to improve maritime travel and transport. **MARS is the first freshwater testbed of its kind in the world.**

Innovations in autonomy for vehicles and vessels are a harbinger of disruption across a wide range of industries, including many if not most of the industries in Michigan. They're also a source of concern for the average citizen—people are rightly concerned about the ethical and social impacts of automation and the construction of intelligent systems.

For Michigan Tech researchers, **engineering and perfecting these systems** in dirty and dangerous environments—like the Upper Peninsula's extreme weather conditions and off-road settings—is the right way to explore and demonstrate to the public the capabilities of automated and intelligent systems in a safe context.

As a key research area that spans civil engineering, mechanical engineering, electrical engineering, computer science, cognitive science, and many more, mobility needs more than traditional paths to move the field forward. Whether underwater or on the road, **Michigan Tech takes autonomy to the ends of the Earth.**

Natural Resources, Water, and Energy

> **"New sensors, new platforms seem to come online several times a year—**so how do we take advantage of that rapid innovation and hardware and make them available on a practical basis? Somebody has to do the testing to make sure the tech collects what's needed, and that's part of the niche we fill."
>
> **– Colin Brooks,** Research Scientist, Michigan Tech Research Institute

Finite resources and a changing climate demand that humans reconfigure their relationship with the environment. Through innovative technocentric education, transdisciplinary research, and improvements to our local environments, we can study and solve grand challenges in natural resources, water, and energy.

At most colleges and universities, the academic model is organized into disciplines. Each discipline provides its own perspectives, and each perspective has its own strengths and limitations. When these different perspectives are woven together, **our understanding of large challenges is much more complete.**

One of the most effective ways to bring vastly different disciplines together is to assemble a team to solve a pressing problem. The challenge provides the motivation for each expert to learn the languages of the other fields, to work to truly understand the approach and to collaborate on strategies. In the same vein, complex, local-to-global problems of managing natural resources, including energy and water, are best solved through the interaction of diverse and broad disciplines.

For example, a transdisciplinary team at Michigan Tech is investigating the feasibility of converting abandoned mines into valuable energy storage. Michigan Tech researchers and students in engineering, industrial archaeology, and energy policy have partnered with local communities to transform what many see as liabilities into pumped hydro energy storage facilities. In Michigan's Upper Peninsula, which is home to countless abandoned mines and some of the nation's highest electricity rates, the project could profoundly impact the livelihood of many rural communities.

At Michigan Tech, our innovative teams work across boundaries, scales, and disciplines to investigate and solve multifaceted issues in natural resources, water, and energy.

Sustainability and Resilience

When we look to the future, our focus tends to rest on technological advancements like automation and AI. But Andrew Storer, dean of Michigan Tech's College of Forest Resources and Environmental Science (CFRES), says an equally important aspect of the current industrial era is the sustainable use of renewable natural resources and acknowledging the role of technology and AI in conserving the natural world.

> "Automation and AI will change how we manage natural systems in the future. Our graduates will have the knowledge to feed into these new technologies for sound stewardship and conservation activities."
>
> **–Andrew Storer**
> Dean, College of Forest Resources and Environmental Science

At Michigan Tech, a university with large engineering programs, CFRES researchers are able to participate in multidisciplinary projects that use the newest technologies and also consider the impacts of those technologies on the natural environment. Much of the work in CFRES relies on data-rich technologies like remote sensing and geographic information systems that collect big data to assess natural systems, and to detect change in them.

What sets Michigan Tech apart from other institutions, Storer asserts, is the draw of our remote location with the forests and water-rich environment of Upper Michigan, the history and identity as Ojibwa homelands, and the diverse relationships connecting humans and the natural world. This provides a unique and elevated opportunity to challenge students with learning goals that incorporate social responsibility, sustainable development and environmental policy, and the latest available technologies.

Advanced Materials and Manufacturing

Reduce. Reuse. Remake. Recover. Renew.

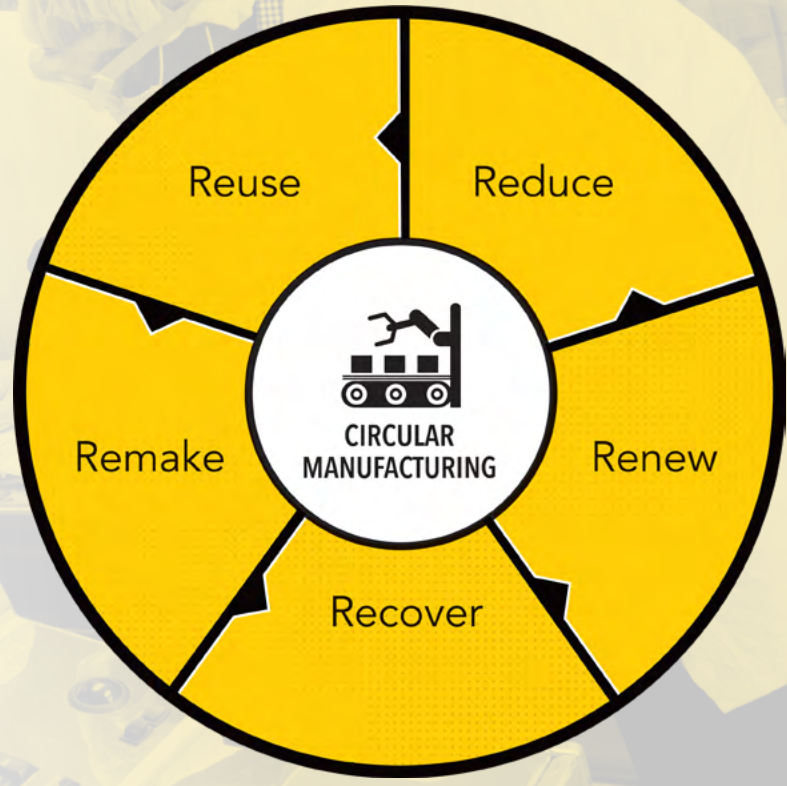
These strategies—the five Rs—are central to a circular economy, one in which the life of any good or material bought, sold, used, and discarded is extended as far as possible to curb extraction, pollution, and waste.

Circular manufacturing is the philosophy and practice of extending the useful life of materials and products through design for disassembly and reuse. It's a vital tool in addressing environmental crises like biodiversity loss, resource scarcity, and pollution.

Currently, only 9 percent of the global economy is circular, but an estimated 30 percent of large corporations have a circular strategy, and over 75 percent plan to adopt targets that will make their products, processes, or business models more circular in the next few years. And manufacturers around the world are building a business case for a circular strategy.

In carrying out our charge to promote the welfare of Michigan's industries, **Michigan Tech stands among global leaders** in experimental and digital design of advanced materials, like the composites materials at the heart of our work for the NASA Space Technologies Research Institute. We are renowned for our capabilities in microfabrication and the manufacture of metal alloys, concrete, composite materials, and wood products.

As the world moves toward a global economy, there is much room for innovation in materials and manufacturing technologies that support a circular strategy, including the use of data-driven and machine-learning approaches. And **Michigan Tech is ready to lead the charge.**



ENROLLMENT

Growing Michigan's H-STEM Workforce

This year's enrollment of underrepresented domestic minority students represents more than 10 percent of the undergraduate student body at **637 students.**

The average high school **GPA** of the 2020 entering class is **3.8.**

There are **2,010** women enrolled at Michigan Tech this fall, representing **28.9** percent of the student body.

6,867

The number of students enrolled at Michigan Tech during Fall 2020.

2,010

The number of women enrolled at Michigan Tech.

No.1

Ranking among public universities nationwide for students who said they made the right choice.

**Wall Street Journal/Times*

Growing Michigan's H-STEM Workforce

Michigan Tech Works to Make Education Accessible

Over the last few years, the University has seen a significant increase in the number of local students who applied to Michigan Tech and expressed interest in health-related areas. However, many did not enroll.

For the majority of these applicants, it came down to a financial choice.

The Portage Health Foundation Making a Difference Scholarship, established in 2016, helps Michigan Tech recruit local talent to health science and engineering degree programs and professions.

The top four awardees receive $8,000 annually. Eight awardees receive $1,000 annually. The awards are renewable for up to four years of study. In three years, 51 awardees have enrolled at Michigan Tech and are pursuing health-related career pathways.

$300K

Michigan Tech and the Portage Health Foundation jointly invest over $300,000 annually in scholarships for students served by H-STEM programs.

STAFFING


MICHIGAN TECH HEALTH FACULTY

Michigan Tech Faculty Talent

Ensuring the State of Michigan Continues as a National Leader in STEM Education

The lack of facility space for our biomedical engineering degree programs is emphasized by the overall shortage of facilities for health-related engineering and science research on campus. Because of the interdisciplinary nature of applying STEM solutions to health and human-centered engineering, this problem is a critical issue for biomedical engineering programs and for retaining research talent and increasing enrollment across campus.

Faculty who leave the university often relocate out of state to benchmark universities with superior facilities (e.g., Massachusetts Institute of Technology, Virginia Tech, Purdue University, Penn State, Rensselaer Polytechnic). By retaining talent in the human-centered engineering and science disciplines at Michigan Tech, the state can continue to be a national leader in STEM education and technological innovation in the fields of human health.

Michigan Tech's new Health Research Institute serves faculty from across the University. These faculty are currently conducting research funded by over $12 million in external support. This research is improving the human condition and contributing to the development of new technologies that will support economic development in Michigan. The H-STEM Complex will ensure that Michigan is at the forefront of interdisciplinary research in the biomedical engineering field.

A visiting team verified what we knew to be true: Lack of space in our biomedical engineering facility is causing overcrowding. This makes course and lab scheduling difficult for all health science and engineering students who are engaged in a variety of degree programs across campus. It also scatters across campus equipment needed by interdisciplinary researchers.

Michigan Tech Faculty Talent

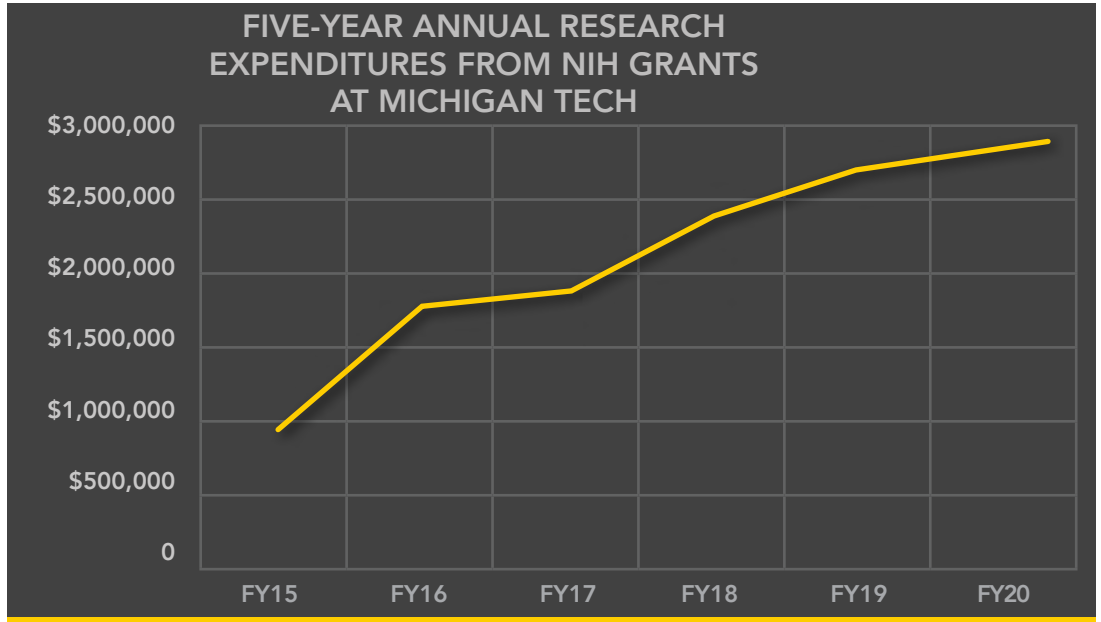
Faculty Provide Steady Economic Growth from Health-related Funding

At Michigan Tech, emerging health care leaders respond to health care problems. Developing material for better wound care, innovating a magnetoelastic sensor for use in an artificial knee, or improving surgeons' ability to destroy cancerous tumors with imaging technology—all three are examples of research happening at Michigan Tech.

Health research strategies emerge from close collaboration with the medical, clinical, and wellness communities who help identify the most pressing problems, and help ensure that what is invented in the lab translates into real-world, high-priority applications.

As an invested partner in our local community, Michigan Tech is critically aware of how health research funding not only produces humanitarian benefits, but also generates significant domestic economic activity.

Nationally, public support for health research stems from an awareness of how health research is critical to US economic competitiveness and sustained growth of local economies.



$2.10 goes back into the local economy from every $1 of health-related research expenditures, promoting local and regional economic development.

Partnerships and Collaborations Across Michigan

Leveraging Resources and Talent

$71.8M

Michigan Tech's total research awards for FY2020 were **$71.8 million,** an increase over FY2019 of $8 million or **12.5 percent.**

Michigan Tech faculty who will be using the H-STEM Complex have a strong history of building educational programs and partnerships across the state of Michigan.

In 2016, Michigan Tech and the SmartZone helped establish a Leadership Roundtable for Health Solutions. This brings together leaders from 40 private- and public-sector health, education, and life science organizations to improve the quality of life in Michigan's Upper Peninsula through new technologies, improved practices, and innovative approaches to health care delivery networks. Members are committed to collaborating by investing leadership time, organizational talent, and resources.

Partnerships and Collaborations Across Michigan

Michigan Tech and Portage Health Foundation Address Local, Regional, and State Needs

$6.7M

$6.7 million invested in health-related research and education

A pivotal partnership was established in 2015 between Michigan Tech and the Portage Health Foundation. This partnership has resulted in a $6.7 million investment into Michigan Tech's health-related research and educational offerings.

By collaborating with the local Portage Health Foundation, Michigan Tech is responding to local and regional needs for new health-related technologies and expertise. To date, funds have supported research, three endowed professorships (Endowed Professor of Preventative and Community Health, Endowed Professor of Population Health, and Endowed Professor of Technological Innovations), research internships for undergraduates, and scholarships for undergraduate and graduate students.

This year, the Portage Health Foundation continues to support the University's health-focused efforts by helping to fund the purchase of new equipment for the University's COVID-19 testing lab. With this equipment, Michigan Tech will double its current testing capability by the end of November 2020.

Portage Health Foundation's Endowed Professors

Because we are unable to describe the work of all the faculty and student researchers who will benefit from the H-STEM Complex, we focus instead on the work of the Portage Health Foundation's Endowed Professors.

Mathematics professor Dr. Qiuying Sha studies statistical genetics. She is bringing big data to rural medicine in Michigan.

Dr. Sha is the Portage Health Foundation Endowed Professor of Population Health. In her role, she wants to make sure people aren't treated as numbers in a system—instead, number crunching should support people's health.

Specifically, Sha is developing statistical models for personalized medicine—a practice in which lots of genetic data, family information, and medical history informs recommendations for each individual's medical treatment. Her work can also be applied to genetic screenings that help catch early signs of diseases and assist with preventative care.

Meet **DR. QIUYING SHA,** Portage Health Foundation Endowed Professor of Population Health

Portage Health Foundation's Endowed Professors

Dr. William Cooke is an exercise physiologist and looks specifically at how nerves coordinate blood flow through the heart and brain. He's studied soldiers and astronauts and investigated questions ranging from how to detect an internal hemorrhage on the battlefield to assessing how low-orbit microgravity affects blood pressure control. He now wants to study the everyday folks of the Keweenaw to help them face the region's most prevalent health concerns.

"The Upper Peninsula isn't unique in their health problems, these are nearly global challenges," Cooke says, explaining that diabetes, obesity, and substance abuse, especially alcohol abuse and tobacco dependency, will be the main targets of his research. "Our laboratory techniques are applicable to real-world, everyday issues."

Meet **DR. WILLIAM COOKE,** Portage Health Foundation Endowed Professor of Preventative and Community Health

Investing to Build Capacity

Economic and social conditions have a major impact on health outcomes—especially in vulnerable and remote communities like Michigan's Upper Peninsula. To build capacity in health-related research and better understand the challenges facing rural regions, Michigan Tech appointed epidemiologist Kelly Kamm as an assistant professor in the Department of Kinesiology and Integrative Physiology.

Kamm's research explores the factors that influence health in vulnerable populations like young children and the elderly. She then develops and tests interventions to improve healthy behaviors, with the goal of creating scalable, cost-effective programs and strategies to improve nutrition and quality of life in communities with limited resources.

Recently, Michigan Tech partnered with UP health departments and other agencies to release the first-of-its-kind Community Health Needs Assessment (CHNA). Kamm analyzed data from an extensive Regional Adult Health Survey and contributed to writing the CHNA, a 350-page report that covers all 15 UP counties and provides a wealth of data on the health status of UP residents.

"The CHNA is an example of how we at Tech can partner in our community to provide expertise to local and regional programs or initiatives," Kamm says. "Nearly 5,000 people responded to the Adult Health Survey, and it is important for everyone to have the opportunity to see how that data is summarized and placed in the context of improving health in our region."

Kamm's expertise has been vital to informing Michigan Tech's response to COVID-19. She is integrally involved in tailoring ongoing testing efforts to the latest results from MTU's COVID-19 testing lab and other monitoring efforts. She has also helped recruit, train, and manage a team of student volunteers to assist the Western Upper Peninsula Health Department conduct contact tracing in the campus community.

Meet **DR. KELLY KAMM,** Assistant Professor, Kinesiology and Integrative Physiology

Portage Health Foundation Research Funding

Investing in Michigan Tech Faculty

Internal research funding is a critical stepping stone to being competitive for external research funds. In 1986, Michigan Tech made a strategic move to establish a peer-reviewed Research Excellence Fund (REF) grant program. With the financial support of the Portage Health Foundation, Michigan Tech has doubled the REF funds available ($220,000 per year) to human health researchers and faculty over the next five years. These funds are available through the following Michigan Tech Research Excellence Funds:

REF Commercialization Milestone Grants provide resources to support the initial steps toward commercialization of technologies. These grants are intended to fund activities like testing and validation of the market need, development of technology prototypes, or preliminary validation of performance in real-world sectors.

REF Infrastructure Enhancement Grants provide departments, schools, colleges, and centers/institutes with resources to develop the infrastructure necessary to support sponsored research and graduate student education. Funded projects typically focus on acquisition of equipment, enhancement of laboratory facilities, or enhancement of administrative support structure to expand the research capability of the unit.

Shared Facility Grants provide the University critical resources to efficiently support University-wide interdisciplinary and guest/partner research by providing funds that make available and maintain communal research space and state-of-the-art equipment. Michigan Tech's shared facilities are an invaluable asset.

INSTRUCTIONAL PROGRAMMING

STEM Education Critical to Industry

Michigan Tech Delivers Talent, Innovation, and Technological Advancements

Historically, Michigan has been a high-income but low-education state, where the job market was largely dependent on durable goods manufacturing. Today, resources such as talent, innovation, and technological advancement are key factors in the economic development, vitality, and competitiveness of the state of Michigan. The Business Leaders for Michigan's publication, Business Leaders' Insights: Michigan's Talent Forecast April 2016 report states that the

> "goal of helping Michigan become a **'Top Ten'** state will be impacted by Michigan's ability to supply talent with the right education, training, and skills to fill high-paying, high-demand jobs."

This perspective is shared by others. For example, in December 2015, the Michigan Postsecondary Credential Attainment Workgroup, a coalition of business, education, and political leaders in our state, published an action plan to increase the qualifications of Michigan's workforce.

The work of that group laid the groundwork for Governor Gretchen Whitmer's call for 60 percent of Michigan residents to earn a postsecondary certificate or degree by the year 2030: "*Sixty by 30.*"

STEM Education Critical to Industry

Preparing Talent that Matters for Michigan's Economy

As predicted by the 2007 Rising Above the Gathering Storm report (published by the National Academy of Science, National Academy of Engineering, and Institute of Medicine), the link between education and economic well-being has gone from being a suspicious notion, to being a well-documented fact.

By 2008, the storm had not just gathered, it had hit with full force. Michigan, with its low training and education attainment rates, was ill-prepared to deal with storm-force economic winds. The shortage of trained and educated workers dragged down the economy and launched a war for talent among companies that continues today. Whereas at one time businesses chased low wages across state borders and around the world, they were increasingly forced to chase talented employees—which were, as predicted, in short supply—particularly in Michigan. This was in large part due to the fact that Michigan residents were not sufficiently prepared to be part of the high-tech workforce.

The 2020 COVID-19 global pandemic highlighted the relative employability of skilled versus unskilled workers in Michigan. As the disruption hit Michigan, the unemployment rate in the state rose from 4.3 percent to 24 percent between March and April. Even as recently as August 2020, unemployment in Michigan remained at 8.7 percent, approximately twice the pre-COVID rate according to the US Bureau of Labor Statistics. Economic challenges and unemployment are disproportionally impacting unskilled workers in Michigan.

The Gathering Storm report and our state's leaders are both clear that 60 percent of Michigan's population needs to be employable in order to keep existing businesses in, and attract new businesses to, our state.

STEM Education Critical to Industry

H-STEM Complex Will Serve New Programs and Existing Programs

Michigan Tech's reputation and track record are built on 135 years of vision, hard work, and commitment to the local community, the state, and the nation. To maintain our high-achieving status among STEM-dominant research institutions, Michigan Tech constantly pursues strategic initiatives designed to respond to changing state/national/global needs while staying true to who we are as a University. Strategic efforts are developed through collaborative University-wide conversations, such as Tech Forward, that frequently include external partners and other stakeholders. Germane to our Five-Year Capital Outlay Plan are several programmatic, hiring, and partnership initiatives that are critical to reaching Michigan Tech's Portrait 2045 goals.

Changes to the existing instructional programming, whether by adding new programs or eliminating underutilized programs, is driven by student demand and industry needs. The growing interest among students in majors such as biomedical engineering or kinesiology and integrative physiology, coupled with increased interest in transdisciplinary fields (particularly at the graduate level) is the basis for Michigan Tech's Five-Year Capital Outlay Plan. The priority project, Phase 1 of the H-STEM Complex, will address the needs associated with growth in student interest in health and technology (and other affiliated) degree programs.

70% of Michigan Tech students are in degree programs that will be served by the H-STEM Complex.

The Brookings Institution ranked **Michigan Tech No. 1 in Michigan,** and **No. 4 in the US in "value-added" factors** such as the kinds of majors offered—particularly in STEM (science, technology, engineering, and math), graduation rates, student loan repayment rates, and the difference between predicted earnings and graduates' actual earnings at mid-career and over a lifetime.

Meet **DR. CARYN HELDT,** Director of the Health Research Institute, James and Lorna Mack Chair in Bioengineering

STEM Education Critical to Industry

Delivering Hands-on, Real-world Learning Opportunities

From Humans of Michigan Tech Stories:

"During my junior year of high school I went on a mission trip to Haiti. I went there thinking I was going to become a pastor—I thought I was going to study theology. Once I got down there, I realized there was a need for doctors in third-world countries. The only doctor within four hours had people lined up to his clinic. The summer before my junior year I was awarded a Summer Undergraduate Research Fellowship to study liver fibrosis and try to identify it with mechanical testing. Spearheading my own research project was huge. Doing research without the steps laid out. That fall I applied for a Portage Health Foundation scholarship. They partnered with the Pavlis Honors College to offer a health scholars research award.

And I got it.

My research was funded for the year, which meant I didn't need to get a part-time job, but even more than that, I got connected to research tools on campus, and transitioned from research in biomed to materials. Professor Pearce and I worked to identify malnutrition in children. We published a paper about a device called a middle-upper arm circumference band. We prototyped it. Tested it. Proved it worked. And for 2.3 cents, it can be 3D printed anywhere in the world and hopefully change lives.

Pretty cool."

ROSS MICHAELS learned the rigors of research at Michigan Tech. It was the fact that he didn't just learn about organic chemistry, but learned how to change lives and how to save them that won him a full ride to medical school.

STEM Education Critical to Industry

Michigan Tech's Undergraduate Research Programs

The characteristics of our students led to the creation of an honors college that is different from those at other universities. Michigan Tech's Pavlis Honors College is designed to welcome all highly motivated students, regardless of their GPA. Students participate in distinctive programs that provide the opportunity to develop new skills. One of our more recent programs is the Undergraduate Research Internship Program (URIP). This is a competitive, paid academic-year internship. Interested students from any school or college identify a mentor and work in collaboration with their mentor to propose a research or scholarship project. Interns are provided professional development opportunities and are required to present their findings at an Undergraduate Research Symposium.

DR. XIAOQING TANG works with her undergraduate and graduate students to study micro RNA in pancreatic cells. Their findings could influence how we treat diabetes.

STEM Education Critical to Industry

Delivering Hands-on, Real-world Learning Opportunities

JILL POLISKY, an undergraduate researcher, worked with a doctor from Nicaragua to build 3D printing technology. Here she holds a "helping hand prosthetic" made with a 3D printer.

Undergraduates do 126,000 hours/year of paid work with faculty.

Students from across campus are working to protect the health and safety of people in the western Upper Peninsula of Michigan by serving as COVID-19 contact tracers under the supervision of epidemiologist **KELLY KAMM,** an assistant professor of kinesiology and integrative physiology.

BIANCA JONES spent eight weeks in Denmark with **DR. CARYN HELDT** studying point-of-care devices that improve detection of diseases like malaria and tuberculosis.

STEM Education Critical to Industry

H-STEM Complex Will Recruit, Retain, and Grow Michigan's Talent

Growth in health-related research capability is important for undergraduate and graduate education at Michigan Tech. It also contributes to the financial well-being of the University as a whole. The Graduate School at Michigan Tech is recognized worldwide as a leading public research university, and students come to study at the University because of its facilities and faculty.

Growth in enrollment and development of new programs for students will result from the H-STEM Complex project. New programs bridging traditional disciplinary boundaries will likely lead to new technologies of interest to industry in Michigan.

Michigan Tech has a long history of developing innovative STEM programs. For example, the College of Computing was established in 2019 to promote the integration of core computer science and application-oriented computational research spanning multiple traditional disciplines. Researchers are making substantial intellectual contributions to their own disciplines, and collaborating with others through their work with large data sets and novel computational methods.

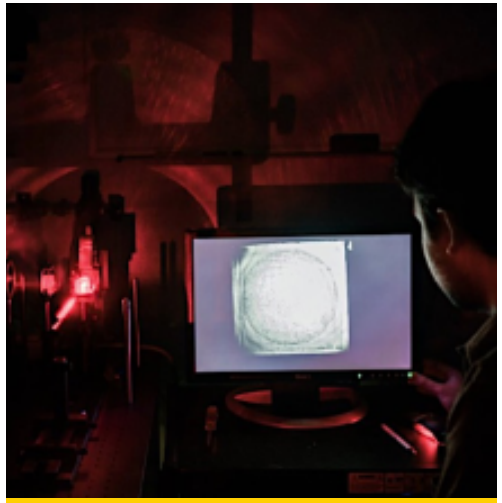
While it is impossible to know exactly what the future will bring, by enabling cross-disciplinary collaboration, Michigan Tech's H-STEM Complex will help prepare Michigan for the future.

EVANDRO FICANHA, 2016 PhD graduate from mechanical engineering-engineering mechanics, tested a prototype for a lighter, more streamlined robotic ankle that "sees" where it's going through an artificial vision system. Thus, the ankle can adapt precisely, whether the user is climbing stairs or striding over a pothole.

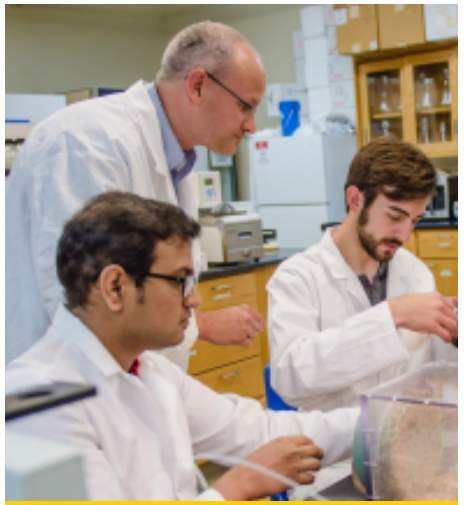
Two of our most recently added departments—Biomedical Engineering and Kinesiology and Integrative Physiology—are the product of cross-disciplinary collaboration. These areas of study, once considered transdisciplinary, are now recognized as their own disciplines. Degree programs in these fields are now common.

Faculty Research Integrated Into Learning

H-STEM Complex Will Recruit, Retain, and Grow Michigan's Talent



ANINDYA MAJUMDAR, a doctoral student in biomedical engineering, uses scattered coherent light to better understand the inner workings of cells.



DR. THOMAS WERNER shows a bottle of fruit flies to a new group of graduate students. His research team analyzes fruit fly genetics to reveal pesticide resistance and gain insights into cancer.

DR. ASHUTOSH TIWARI and his doctoral student **NETHANIAH DORH** work on misfolded proteins. They collaborated with synthetic chemists and physicists to better understand a molecular probe to test protein stickiness, a precursor to some neurodegenerative diseases.

DR. MELANIE TALAGA, a 2016 PhD graduate from chemistry, worked with **DR. TARUN DAM** to identify inaccuracies in thyroid cancer detection tests.

Faculty Research Integrated Into Learning

H-STEM Complex Will Recruit, Retain, and Grow Michigan's Talent

DR. XIAOHU XIA, assistant professor of chemistry, is one step closer to making detection of cancer as easy as a home pregnancy test. Platinum-coated gold nanoparticles could make cheap and simple test-strip detection a reality.

DR. SMITHA RAO, assistant professor of biomedical engineering, is investigating sensors and devices involving microelectromechanical systems (MEMS) for use in human health research applications.

DR. ADRIENNE MINERICK, dean of the of College of Computing, leads research that analyzes infant teardrops for nutrition.

Faculty Research Integrated Into Learning

Critical for Technological Innovation and Economic Development

DR. JENNIFER BECKER, associate professor of civil and environmental engineering, received funding from Michigan Tech to track SARS-CoV-2 in wastewater on the Michigan Tech campus.

DR. CARYN HELDT, National Science Foundation CAREER Grant Award recipient and James and Lorna Mack Endowed Chair in Bioengineering, works with her students on virus removal for biotherapeutic drugs and is purifying viruses for vaccine production.

In his biological science lab, **DR. PAUL GOETSCH'S** research aims to understand how multiple cell types originate from one cell and one genome.

STEM Education at Michigan Tech

Tissue Engineering

Lab-grown tissues that are just like the real thing.

Stem cell therapies.

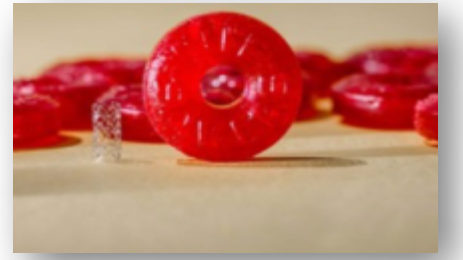
Cell sheet, cardiovascular, and neural tissue engineering.

Biomechanics

Robotic prostheses that improve mobility and agility.

Computational studies on football concussions.

Exercise interventions for rehabilitation, ergonomics, and enhanced mobility and/or sports performance.



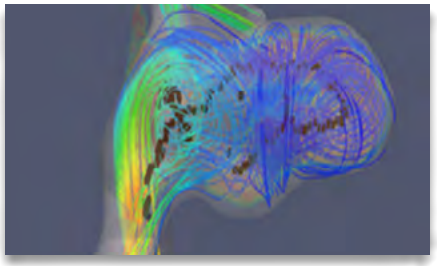
Biomaterials

Bio-absorbable, zinc-based stents that reduce complications.

Theranostic scaffolds for wound healing.

Nanoparticle test strips for cancer detection.

STEM Education at Michigan Tech

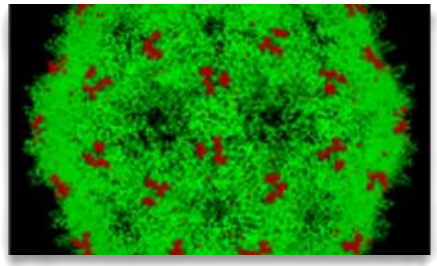


Imaging and Detection

Ultrasound for breast cancer diagnosis.

Magnetic imaging to measure blood flow and treat vascular aneurysms.

Optical imaging for measuring near-skin blood flow, oxygenation, and skin elasticity.



Biochemistry

Purification, removal, inactivation, and detection of pathogens and toxins.

Next-generation vaccines that could be the HPV "power off."

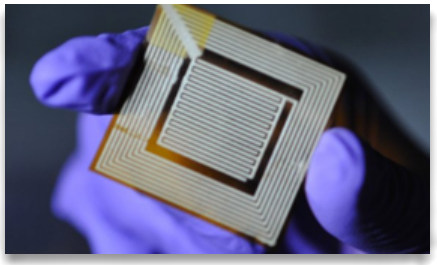
Protein misfolding corrections to understand diseases such as Parkinson's.

Kinesiology and Integrative Physiology

Autonomic and cardiovascular diseases.

Hypertension, stroke, and answers to questions such as, "Does fatness affect health if you are fit?"

Why Michigan Needs STEM Education



Devices

Smart knee implants.

Microfluidic devices for breast cancer detection.

Titania nanotube surfaces with integrated nanosilver for antibacterial orthopedic implants.

Genetics and Population Health

Fruit fly genetic analysis to offer insights into cancer and other human diseases.

Complex disease mapping, like Lou Gehrig's and cancer, to help identify causes and work toward solutions.

Medical Informatics

Biometric developments.

Health care security.

Human computer interaction, intelligent medical devices, and biomedical imaging.

Why Michigan Needs STEM Education

Medical Devices

Over 26% of Michigan venture capital investments go to pharmaceutical and medical device start-ups.

~300 Michigan companies specialize in medical devices and related ventures.

Michigan has seen a 32% increase in the number of medical device manufacturing companies.

Michigan is the Midwest's fourth-largest supplier of medical devices.

Research & Development

In 2017, life science was the focus of capital deployment in Michigan, accounting for 42% of total capital invested.

The three largest sectors of that 42% were: 37% in medical devices, 12% in diagnostics, and 18% in pharmaceuticals.

Jobs

In Michigan, bioscience and related sectors are growing faster than the national average.

Michigan saw 27% employment growth over the last decade.

Michigan GSP growth ranked fourth among all states, while neighboring states grew at less than half of Michigan's rate in 2017.

Sources:
- senate.Michigan.gov/sfa/publications/econind/mei_mostrecent.pdf
- midevice.org/industry-profile
- michiganvca.org/wp-content/uploads/2017/04/2017-MVCA-Research-Report-spreads.pdf
- bio.org/sites/default/files/files/v3battelle-bio_2012_industry_development.pdf

FACILITY ASSESSMENT

Continuous Return on Investment

Continuous Process of Facility Assessment

Michigan Tech's space management is a continuous process maintained through our Accounting for Space, People, Indexes, Research, and Equipment (ASPIRE) database; specific roles in this process are outlined in the University's Space and Equipment Management Guidelines. This process is motivated, in part, by the need for additional space to accommodate the recent expansion in health-related education programs. Biomedical Engineering, as an example, has more than tripled enrollment over the past 10 years. In 2011 Michigan Tech engaged SHW Group Inc. to prepare a comprehensive Facility Assessment and Deferred Maintenance Capital Planning Report. This report became the basis for the current long-term deferred maintenance funding model and prioritization schema that is used to determine the priority of any project.

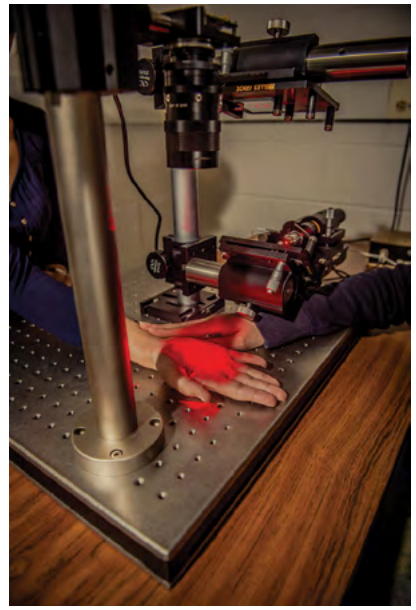
Every two years, the University completes the National Science Foundation (NSF) Survey of Science and Engineering Research Facilities, which allows for comparison relative to established benchmarks. According to the most recently published NSF data, the three top research spaces at science and engineering research institutions are: 1) biological and biomedical sciences, 2) health and clinical sciences, and 3) engineering. For biological and biomedical sciences, Michigan Tech had 22,628 net assignable square feet (NASF) of research space at the end of FY2019. Health sciences had 3,873 NASF. NSF data show that Michigan Tech's combined NASF for biological and biomedical sciences plus health and clinical sciences is extremely low compared to in-state and out-of-state benchmarks. The status of existing research space also indicates there is need for improvements to these spaces in order to support the current level of research on campus and to maintain our current trajectory of increasing research and external funding. We need to improve our research spaces so that they are no longer classified by NSF as being in satisfactory condition (defined as facilities suitable for continued use over the next two years for most levels of research, but possibly requiring minor repairs or renovations), and are instead classified as being in superior condition (defined as facilities suitable for the most scientifically competitive research over the next two years).

Continuous Return on Investment

To achieve our long-term strategic plan goals, both upgraded facilities and increased NASF will be needed. Particularly, upgraded and expanded facilities that support education and research in areas of study related to human health are needed. To be competitive for large National Institutes of Health (NIH) grants, investigators must demonstrate:

1. the scientific environment will contribute to success,
2. institutional support, equipment, and other physical resources available are adequate, and
3. facilities and resources are appropriate to provide exposure to a research-oriented, clinical environment.

Our researchers cannot, at present, demonstrate that these criteria are met, hence our need for the H-STEM Complex.



The Biomedical Optics Laboratory is one example of where the lab space is insufficient to meet the needs of researchers.

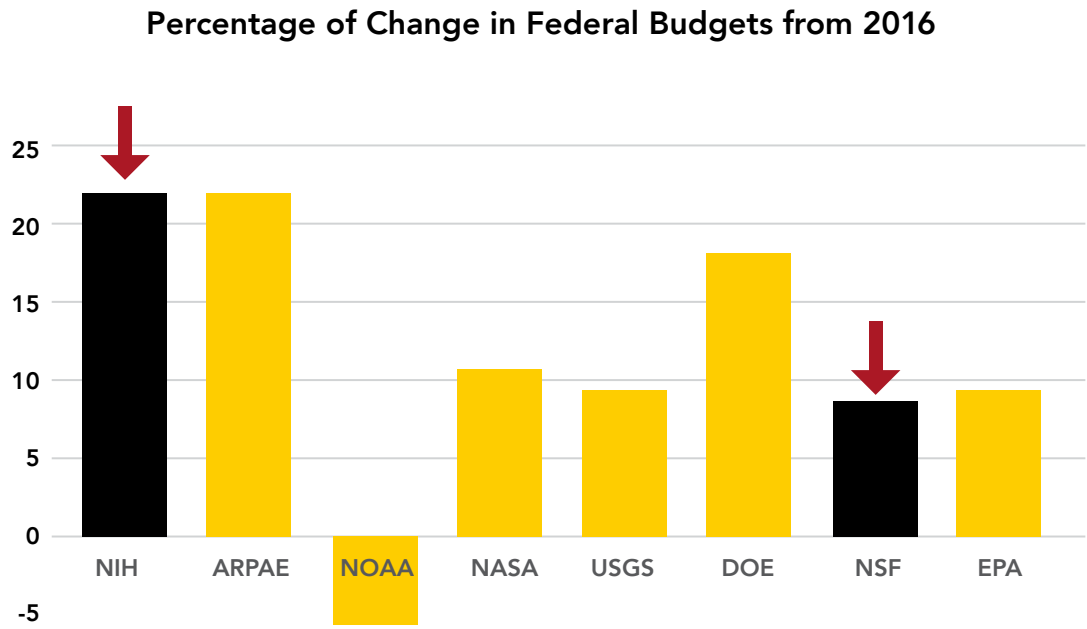
Continuous Return on Investment

As mentioned previously, Michigan Tech is in year four of a five-year partnership with the Portage Health Foundation, which will ultimately result in an investment of approximately $6.7 million for health research, education, technologies, economic growth, and community outreach at Michigan Tech. As part of this partnership, Michigan Tech set a goal to grow its NIH portfolio over the next five years by 20 percent each year. To date, we are on track to meet this goal. In FY2020, the University began an initiative in Health and Quality of Life and is making further investments over the next five years to increase research that will be performed in the H-STEM Complex. The proposed H-STEM Complex will allow us to grow our NIH portfolio even more aggressively.

Continuous Return on Investment

NIH 2018 Budget Increase

While the University has a strong NSF portfolio, which makes up 32 percent of our total federal funding, we are not maximizing our potential to exploit funding opportunities offered by NIH, an agency with a large budget. After an omnibus bill that raised Alzheimer's disease research by $400 million (to $1.4 billion), antibiotic resistance research by $50 million, cancer research by $300 million, and research in precision medicine by $160 million, NIH saw a $2 billion increase to $39.1 billion for FY2019. In comparison, NSF's budget increase of $9 million basically holds NSF's funding steady.



Sources:
- sciencemag.org/news/2017/05/how-science-fares-us-budget-deal
- aip.org/fyi/2017/final-fy17-appropriations-us-geological-survey

Continuous Return on Investment

Facility Standards for Program Implementation

Michigan Technological University is a State of Michigan constitutional corporation, governed by a Board of Trustees appointed by the Governor of the State of Michigan. Although we have a great deal of regulatory autonomy, we endeavor to meet all code and facility standards applicable for the occupancy of our buildings. We are exempt from local building and zoning ordinances and subject only to State of Michigan laws and regulations that are clearly intended to apply to universities. In lieu of local building ordinances and State of Michigan laws and regulations that do not apply at the University, the University chooses to require that new construction adhere to a number of well-established building codes and standards, as listed in our Michigan Technological University Facilities Management Procedure for Codes and Regulatory Agencies Related to Facility Projects.

Regardless of origin or enforcing agency, all of the applicable building codes and standards listed in the document are to be followed. The document guides contractors and others working on University property and provides input on topics such as compliance with the State of Michigan Bureau of Fire Safety rules for schools and/or dormitories. This document does not eliminate the need to also comply with the Michigan Building Code, including its barrier-free provisions.

The 2010 Americans with Disabilities Act also must be followed. Additional codes may apply for particular situations, which are considered on a case-to-case basis. Adherence to narrow-scope codes and/or standards is required by the general codes listed in the document.

The edition of building codes listed in the document will be followed throughout the project, unless construction documents are submitted to the University for final review more than a year after adoption of a new version of code. If more than one year transpires between adoption of the new code and submission of construction documents to the University for final review, the most recently adopted edition of the building codes applies.

Michigan Tech research scientist Colin Brooks flies a modified hexacopter to do Eurasian Watermilfoil surveys. We received Environmental Protection Agency and Great Lakes Restoration Initiative grants to help tackle the invasive aquatic plant.

Continuous Return on Investment

Functionality of Existing Structures and Space Allocation to Program Areas Served

Academic spaces at Michigan Tech were generally designed and constructed to serve programming that existed in the past. Many spaces are dated and no longer satisfy current demands. For example, we have a number of areas that were originally designed and constructed as undergraduate labs that now must also meet the demands of graduate education and research.

Additionally, many programs need expanded and updated spaces to allow for modern pedagogy that includes projects, teaming, and collaborative research.

Michigan Tech's research and enrollment have both steadily increased, putting significant strain on outdated facilities and limited spaces. Our FY2021 Capital Outlay Request addressed the highest-priority needs as outlined below.

Continuous Return on Investment

Priority Need: Chemistry and Chemical Engineering

The Chemical Sciences and Engineering Building, built in 1968, is largely in its original state. The majority of the classrooms, laboratories, research areas, and administrative spaces remain as they have been since original construction, with the exception of some renovations that have taken place over the years. As second and third generations of students come to Michigan Tech, the space remains largely as it was when their parents and grandparents attended.

Recently two undergraduate laboratories were remodeled to contemporary standards, serving as a model for future projects, and a new Chemical Stores addition was recently completed, improving the safe handling of chemicals. An outdated cooling tower was replaced in FY2017, finishes have been updated in various locations throughout the building, and the roof was recently replaced. Nevertheless, a significant number of additional issues remain to be addressed. Of critical importance is improving the design of the ventilation system, which is inadequate for the research being done today; updating the chiller and humidifiers; removing asbestos, which can be found throughout the facility; and replacing end-of-life finishes.

The H-STEM Complex project will involve limited repurposing of this building, which will provide an opportunity to utilize its well-maintained shell. The new addition's capabilities will strengthen the University as a whole.

90%

students participating in co-ops, internships, or Enterprise

8th

rank of chemical engineering among highest-paying careers

3

semesters of student experience in a simulated chemical plant

Continuous Return on Investment

Priority Need: Biomedical Engineering

The research and educational spaces within the Department of Biomedical Engineering (BME) are outdated and inadequate for modern research and education. All of the space currently used by BME is repurposed from spaces originally constructed for mining, mineral processing, and materials science activities.

The research areas lack modern biomedical-grade research benches. The layout of the research space is inefficient; there is not an "open lab" configuration, which is now common in nearly every other biomedical research facility in the country. The open lab design reduces costs and improves efficiency, workflow, collaboration, and safety. The current facilities lack the number of laminar flow hoods and biological safety hoods that are needed to efficiently and safely conduct research and educational activities. Ventilation from the current Animal Care Facility (ACF) is inadequate; odors emanating from the ACF penetrate the entire BME space.

Current teaching laboratory spaces suffer from the same shortcomings as research spaces, and are additionally too small. Teaching laboratory spaces for Bioinstrumentation and Laboratory Techniques classes can serve only 10 students at a time.

Both of these courses are required core courses for all BME students. High demand and small labs lead to significant scheduling issues and inefficiencies in delivering educational experiences, as BME currently enrolls approximately 315 undergraduate students.

The space allocated for Senior Design is similarly small and outdated. There is no wet-lab space that can be dedicated to the Senior Design program, which is a significant shortcoming and puts Michigan Tech and BME undergraduate students at a disadvantage relative to other BME departments nationally. Some activities have been moved into research laboratories, but this practice is not sustainable due to safety concerns and overcrowding.

Biomedical Engineering by the Numbers

$2M+

in sponsored program awards for FY2019

TOP 10%

rank among highest-paying careers

89.2%

undergraduate job placement rate

Continuous Return on Investment

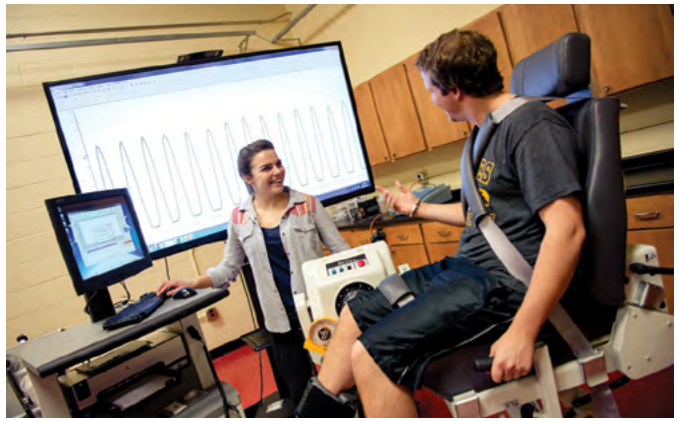
Collaborations with Biomedical Engineering

Over the past 10 years, the Kinesiology and Integrative Physiology Department (KIP) has transformed from a physical education program to a robust human-health-focused research and education enterprise. Eighty percent of the tenure-track faculty in KIP have active federal grants from NIH and/or NSF. Much of KIP research overlaps with research in BME. For example, nearly one-third of KIP and BME faculty are engaged in funded research that can be broadly defined as heart and vascular science and engineering. Several faculty have interdisciplinary research projects and grants, allowing for innovative and interdisciplinary solutions to complex global health challenges (e.g., cardiovascular disease, obesity, development of point-of-care medical devices).

The research and teaching facilities in KIP are scattered across multiple buildings and located in spaces that were not designed for behavioral and technological research to address human disease and debilitation.

KIP tenure-track faculty are located in three separate buildings. One was designed for physical education (Student Development Complex), one for environmental and biological science (Dow Building), and one for career services (Meese Center). Additionally, the animal care facilities required for approximately 40 percent of faculty are located in another building in a space designed for mining, mineral processing, and materials science. Undergraduate and graduate students in KIP regularly collaborate with faculty and students from other departments as they engage in research, engineering-focused Senior Design projects, and community health projects. Teaching laboratories for these interdisciplinary activities are small and restrictive, and the use of converted space has led to ventilation and temperature control issues.

KIP research is conducive to the open lab model planned for the H-STEM Complex. Given the ongoing and growing research collaborations with BME, there is an urgent need to co-locate the two departments in close proximity.



Kinesiology and Integrative Physiology by the Numbers

90%

placement rates in physical therapy and medical schools; surpasses state and national norms

15:1

student-to-faculty ratio: top among kinesiology programs in the US

80%

tenure/tenure-track faculty with active research sponsored by NIH, NSF, or industry

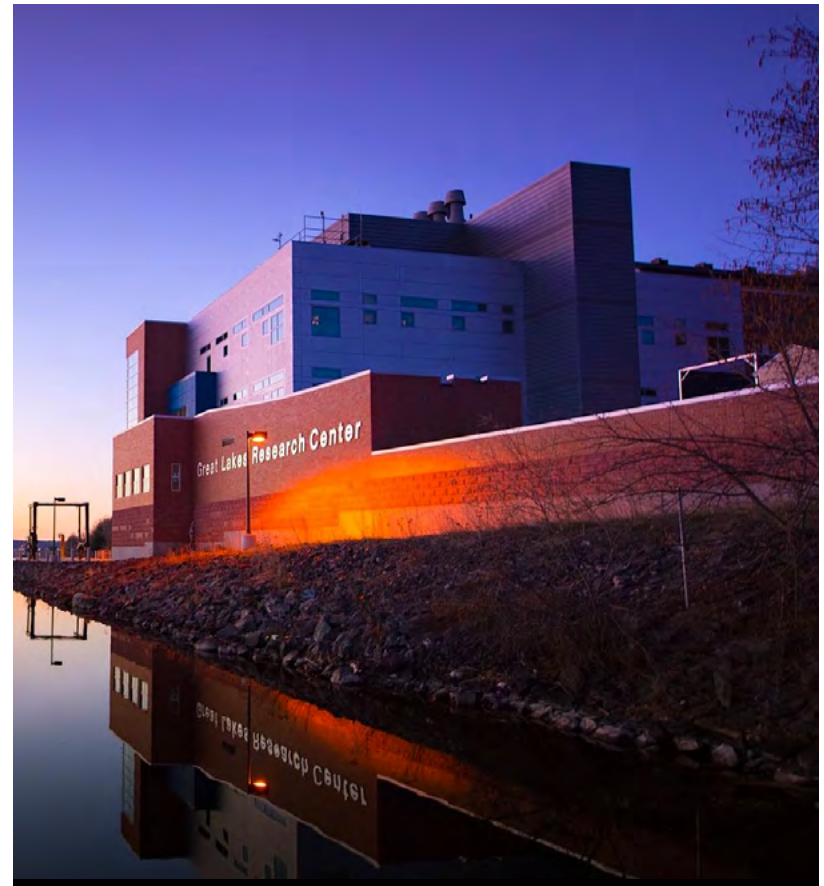
Continuous Return on Investment

Michigan Tech's Previous Capital Project: A Model for Success

The University's last capital outlay project, the Great Lakes Research Center (GLRC, pictured right), provided much-needed space for water-related research on campus. The GLRC provides state-of-the-art laboratories to support research on a broad array of topics. Faculty members from many departments collaborate on research, ranging from air-water interactions to biogeochemistry to food web relationships.

The GLRC has seen continued growth in the number of proposals submitted by multidisciplinary teams and proposals with Co-Principal Investigators, demonstrating growth in individuals interested in contributing toward team science. In the last five years, the GLRC has increased awarded projects by 370 percent (from 16 to 59), and gone from $1.4 million to $7 million in awarded funds, an increase of 500 percent.

Like the GLRC, the H-STEM Complex will address growing needs at Michigan Tech. The H-STEM Complex project is anticipated to result in significant increases in the total value of proposals for research funding submitted and awards received. This will allow Michigan Tech to continue to increase its contributions in support of the state of Michigan's industries.



As a result of GLRC researchers' efforts, Michigan Tech ranks highly in research and development expenditures in Michigan in the areas of environmental science, atmospheric science, and oceanography.

Mandated Facility Standards

Utility System Condition

Michigan Tech's campus development plan was prepared in the mid-1960s to provide guidance for the development of academic programs and the physical plant. In conjunction with this plan, Commonwealth Associates Inc. conducted a campus utilities study. Installation of the campus utilities, which began in 1970, followed the study's recommendations for underground services. The Facility Assessment and Deferred Maintenance Capital Planning Report of 2011, prepared by SHW Group Inc., provided additional guidance regarding utilities and infrastructure.

Central Heating Plant

Michigan Tech has a central heating plant and steam distribution system serving the University's campus. The plant has a total connected boiler capacity of 250,000 pounds of steam per hour providing over 100 percent redundancy at current steam demands. The steam distribution system consists of a walk-in tunnel system from the plant to the academic core. Tunnels run the entire length of the campus core and southward to the athletic complex. Service to individual buildings is provided through a mini tunnel system. The distribution system was designed in anticipation of future growth. New facilities in the academic core are anticipated to be within 100-200 feet of a tunnel. The existing steam plant was built in 1950, with additional capacity added in 1957, 1964, and 1970. Burner and control upgrades performed in 1970 and 2002 improved efficiency and reliability of the system. Planned maintenance efforts continue to focus on long-term reliability of the plant. Opportunities exist for improvements in the steam-generating and distribution system to improve efficiency. The central heating plant presently serves 2,730,000 gross square feet of campus facilities with an instantaneous peak load of 90,000 pounds per hour and a one-hour average peak load of 85,000 pounds. The present connected load includes instructional, research, administrative, housing, athletic, and service facilities. Existing plant capacity can reliably provide steam services for an additional 1,000,000 square feet of building space, while ongoing energy conservation and technology improvements further increase the plant's ability to service additional space.

Mandated Facility Standards

Utility System Condition

Electric and Communications Infrastructure

Michigan Tech's incoming electrical service is on a 69,000-volt American Transmission Co. line that terminates at an Upper Peninsula Power Company substation located next to Michigan Tech's substation. Michigan Tech's 9.0 MW diesel generating plant provides backup power to the entire campus in an emergency or power curtailment. Power is distributed to each building where transformers reduce the incoming voltage. The electrical/communications distribution system consists of a concrete-encased duct bank that runs the entire length of the academic core and south to the athletic complex with facility connections tapped from the main duct bank. The campus electrical distribution system was replaced in 2003. Electricity is distributed throughout campus via three separate lines. Two lines serve each building, allowing loads to be balanced across all three lines and providing redundant feed to each building.

The system capacity is 11,500 kVA with 100 percent backup capability. Peak demand is 6,800 kVA at approximately a 0.9 power factor. The system will reliably service an additional 2,000,000 square feet. With planned maintenance, the 2003 cable installation is expected to last through 2053.

Michigan Tech's communication system consists of a number of underground conduits that provide adequate space for University communication infrastructure. Both fiber-optic and copper pathways exist. The size and location of these will enable the system to meet future needs. Should additional fiber be needed, these pathways will be suitable. Any new structure built on campus would tie into this system as part of the project scope.

Water

Michigan Tech's water system is a combined fire and domestic looped manifold system, with an eight-inch main around the circumference of the campus. There are no capacity concerns with the water distribution system. Water usage is 28 percent below what it was in the late 1970s as a result of conservation efforts. Michigan Tech's water mains are sized for an annual usage of 375,000,000 gallons and a peak demand of 1,100 gallons per minute. Current usage is approximately 100,000,000 gallons annually. Water is provided by the City of Houghton. In 1996, the City of Houghton completed construction of a new water plant and continues to make distribution improvements that will meet Michigan Tech's needs into the foreseeable future.

Mandated Facility Standards

Utility System Condition

Sewers
Michigan Tech's sewers are separated into storm and sanitary systems. The storm system drains into the Keweenaw Waterway at various locations. Riverine and urban flooding was identified as a critical vulnerability in the 2019 MTU Multi Hazard Mitigation Plan. Completion of a Campus Drainage Assessment to better address stormwater backup and flooding on campus was a recommended mitigation strategy. A 15-inch sanitary main, capable of handling 3,500,000 gallons per day, ties directly into the Portage Lake Water and Sewage Authority's transmission main. The treatment facility is located east of campus. The size of Michigan Tech's sanitary main and the new sewage treatment plant's capacity of 18,000,000 gallons per day provide sufficient capacity for foreseeable future needs. Sections of piping are reviewed annually via camera, and maintenance and replacement of older sections are ongoing.

Facility Infrastructure Condition
Michigan Tech's roads, sidewalks, and parking lots are in satisfactory condition and are maintained according to a replacement plan and conditional assessment. Recent improvement projects include paving a commuter student parking lot and repaving and adding sidewalks along Cliff Drive (a main campus roadway). The University does not presently have a parking deck, nor any bridges, in its road system.

Adequacy of Existing Utilities and Infrastructure Systems for Current and Five-Year Projected Programmatic Needs
The central heating plant can serve an additional 1,000,000 square feet and the electrical system can service an additional 2,000,000 square feet; both are beyond the University's needs for the upcoming five years. A $100,000 investment in the south campus high-voltage line in 2018 further increased system capacity and reliability. The water plant and sewage facilities both provide sufficient capacity for foreseeable long-term needs. Michigan Tech completed two projects in 2019 to separate storm drain piping from sanitary sewer lines, lowering unnecessary flow to the sewage treatment plant and leaving more capacity for future projects.

Mandated Facility Standards

Campus Sustainability Initiatives

Michigan Tech formalized the effort of improving campus sustainability with the establishment of the Tech Forward Sustainability and Resilience Initiative with leaders in the areas of Academics, Research, Planning, Facilities, and Administration. The charge for this committee is to set goals and targets for sustainability at Michigan Tech, in the areas of Academics, Operations, Outreach, Waste Minimization, and Infrastructure. Subteams will be formed to focus on specific sustainability initiatives.

We have reached our initial goal of reaching the Association for the Advancement of Sustainability in Higher Education (AASHE) Sustainability Tracking, Assessment, and Recording System (STARS) Silver Level and have identified initiatives needed to achieve Gold Level.

The Energy subteam developed an energy audit plan to identify energy saving opportunities.

Energy metering data shows that research buildings (such as the Dow Building, Minerals and Materials Engineering Building, and the R. L. Smith Mechanical Engineering-Engineering Mechanics Building) are energy-intensive spaces. The buildings with the highest energy use intensity are given priority in the energy audit process. Audit results will be used to prioritize potential energy saving projects.

A carpet of plants on many of the second-floor roofs at the GLRC soak up runoff and act as natural temperature regulators—helping to keep the building cool in the summer months.

Mandated Facility Standards

University Enterprise-wide Energy Plan, Goals, and Audit Schedule

The University strives to identify and implement energy reduction strategies and projects based on input from the Campus Sustainability Oversight Committee, Green Campus Student Enterprise, Facilities Management, and the campus community. Nominated sustainability projects and strategies are vetted and prioritized using a life cycle cost approach to determine return on investment.

Energy Efficiency Improvements
Potential energy saving projects include: HVAC recommissioning, lighting controls, interior and exterior LED lighting upgrades, exhaust air energy recovery, computer server room infrastructure, water saving projects, combined heat, power and cooling. The University is in the process of upgrading HVAC control systems in all buildings.

The $941,000 West McNair Hall Bathroom Renovation and Maintenance Repairs project completed in the summer of 2017 reduced water use in the building by over 20 percent, saving $20,000 per year. The GLRC, the newest building on campus, is heated by waste heat recovered from boiler exhaust gas in the central heating plant, reducing the heating cost for the building by over 70 percent.

Electricity Cost Management
Through the State of Michigan Energy Choice Law, Michigan Tech has been able to control energy costs by purchasing energy from an Alternative Energy Supplier (AES). This has resulted in savings for the University of over 20 percent as compared to the local utility rate. Fifty percent of the electricity purchased under our contract is from renewable sources. Michigan Tech is one of only three colleges and universities in Michigan recognized by the USEPA Green Power Partnership for use of sustainable electricity.

Land and Capacity for Future Development

The University owns real property in the Michigan counties of Houghton, Keweenaw, Baraga, and Ontonagon, and in the Wisconsin county of Lincoln. Each year the Michigan Tech Board of Trustees Audit and Finance Committee reviews an updated list of real properties that could be considered for disposition and advises on strategy.

Land acquisitions through donations are vetted to identify their academic, research, or business purpose and are liquidated if no future use can be determined.

The "Fresh Look" Scenarios Plan Report of 2006 as well as the Campus Master Plan 1999 Amendment and all previous Master Plans and supplements contain information identifying footprints for potential academic, housing, and recreation building sites. Depending on the scope of the project, the campus has capacity for projected growth over the next 15-20 years. Potential land acquisition in areas local to the core campus are identified in the "Fresh Look" Scenarios Plan Report of 2006. The process for hiring a consultant to complete a new comprehensive Campus Master Plan is underway with the plan completion in early 2022.

State Building Authority Obligations

Existing Obligations to the State Building Authority

Michigan Tech has four building projects with obligations to the State Building Authority.

Building	Lease Began	Lease Ends
Environmental Sciences and Engineering Building	1999	2034
Performing Arts Center	2001	2036
Center for Integrated Learning and Information Technology	2005	2040
Great Lakes Research Center	2013	2048

Facility Assessment Required Data

See Appendices:

Net to Gross Area Ratio Summary

Summary of Assignable Area

Statement of Values

IMPLEMENTATION PLAN

Priority of Major Capital Projects

REQUESTED FROM THE STATE WITH ESTIMATED COSTS

Five-Year State Capital Outlay Plan and FY2022 Capital Project Request

Project Name	Gross Sq. Ft. New	Gross Sq. Ft. Renovated	Total Project Cost (000s)	State Funds (000s)	Est. Cost. Univ. Funds (000s)	Start/End Dates (years)
H-STEM Engineering and Health Technologies Complex—Phase 1	62,000	11,000	$44,700	$29,700	$15,000	2022/2024

H-STEM Engineering and Health Technologies Complex—Phase I
The H-STEM Engineering and Health Technologies Complex will support Michigan Tech's integrated educational programs that apply engineering and science to problems related to human health. Michigan Tech's technological niche allows it to contribute to health-related research, development, and education for its students by developing therapeutic devices, instruments, sensors, and preventative strategies. Research is currently supported by the American Heart and Lung Associations, Gerber Foundation, Portage Health Foundation, National Institutes of Health, and National Science Foundation, among others. The complex will include shared and flexible laboratory spaces, co-located with renovated classrooms and learning spaces within the existing Chemical Sciences and Engineering Building that meet current industry standards for safe operation and the training of students.

The complex will permit teams of researchers and students from Biomedical Engineering, Chemical Engineering, Mechanical Engineering, Electrical and Computer Engineering, Materials Science and Engineering, Biology, Chemistry, Cognitive and Learning Sciences, Computer Science, and Kinesiology and Integrative Physiology to work together in collaborative space with shared equipment. The estimated cost of $44,700,000 will allow Michigan Tech's engineers and scientists to continue to increase economic prosperity through development of technologies and preparation of the future technological workforce. Research and educational efforts made possible by this complex will complement and add value to activities at other universities as well as care providers throughout the state.

Current Deferred Maintenance

Relative Estimate of Michigan Tech's Current Deferred Maintenance Backlog

In 2011 Michigan Tech contracted with the SHW Group to complete the Michigan Tech Facilities Assessment and Deferred Maintenance Capital Planning Report 2011. That report, from May of 2011, determined the deferred maintenance backlog at Tech to be approximately $126,900,000. In context of the report, SHW defined deferred maintenance backlog as "expenditures for repairs which were not accomplished as part of normal maintenance or capital repair which have accumulated to the point that facility deterioration is evident and could impair the proper functioning of the facility. Deferred maintenance projects represent catchup expenses."

In 2014 Tech began funding deferred maintenance, with an initial annual budget of $500,000. Since that time, just over $8,500,000 of deferred maintenance projects have been completed or are currently being completed. However, because additional items do get added as they arise, the deferred maintenance backlog is still estimated at approximately $125,000,000.

It is important to note that Michigan Tech does not intend to act on some of the deferred maintenance needs currently included within the deferred maintenance backlog. Technology changes, programmatic changes, and differing conditions at predicted end of life can impact whether a project will ever come to fruition. These items are taken into consideration annually as part of the review process and updated on a five-year deferred maintenance planning list. With this in mind, the actual deferred maintenance backlog of projects that Tech plans to address is closer to $43,000,000.

Impact from Deferred Maintenance and Structural Repairs

There is a long-term maintenance plan in place to address the deferred maintenance backlog. In FY2021 $2,200,000 in deferred maintenance projects was budgeted, with a planned increase of $500,000 each year until an annual total of $3,000,000 is reached and maintained. Michigan Tech also addressed an additional $25,000,000 over the past five years in several high-impact deferred maintenance and renovation projects that will help lower total deferred maintenance costs.

Addressing deferred maintenance is an important piece of the University Strategic Plan because it allows the University to provide exceptional services and infrastructure. Recently completed projects such as the $13.6 million renovation to the Daniell Heights apartments, which primarily house graduate students, allow the University to invest in its students by providing attractive and affordable living options with easy access to campus and community transportation. Roofs were recently replaced on the Mineral and Materials Engineering Building, Electrical Substation, and Sustainability House.

Current investments in the Chemical Sciences and Engineering Building undergraduate labs and Chemical Stores support academic programming for students in every major. Additionally, current projects to update building controls, fire alarms, and elevators allow numerous departments across campus to better, and more safely, serve students in their programs.

Status of Ongoing State Building Authority (SBA) Financed Projects

All SBA resource projects have been completed as planned to maximize program, research, and relationship (with donors who made gifts to the projects) impact. Given this, Michigan Tech is well positioned to move forward with our Five-Year Capital Outlay Plan and Capital Outlay Request, if funded.

Building	Project Status
Center for Integrated Learning and Information Technology	Completed
Environmental Sciences and Engineering Building	Completed
Great Lakes Research Center	Completed
Performing Arts Center	Completed

Rate of Return on Planned Expenditures

Increases in Research Funding Help Rate of Return

It is reasonable to assume the rate of return on planned expenditures will be significant and sustainable given the projected increases in both enrollment and research funding.

The H-STEM Complex will provide faculty with the competitive research environment needed to grow our NIH- and industry-funded research portfolio by a conservative 20 percent per year. In FY2019, our funding from the Department of Health and Human Services increased by 28 percent compared to FY2018. This alone will have a sizable rate of return on planned project expenditures. In FY2019 we reached an all-time high expenditure level of $80.4 million. The new facilities will also reasonably enable increases in sponsored awards from all of the federal funding agencies currently supporting Michigan Tech research talent. No impact on tuition is expected from this project. We anticipate continued increases in enrollment bolstered by the new H-STEM Complex that will increase tuition revenue and auxiliary income.

Michigan Tech's debt service on $15 million, if bonding all matching funds, will be approximately $840,000 per year. This will be supported by the projected increases in both enrollment and research funding. Michigan Tech's FY2020 Facilities and Administrative (F&A) rate is 53 percent for on-campus research. An annual debt payment of $840,000 implies an increase in research funding of $5 million to service the debt solely through F&A recovery (this translates to an increase of 17.3 percent in HHS funding). We can also look at funding the debt from just the 27 percent Facilities component of the rate, which would imply an increase in research funding of $3.6 million (an increase of 20 percent in NIH funding and less than a 1 percent increase for all other federal funding agencies currently supporting Michigan Tech's H-STEM research).

The rate of return on expenditures is also something we take into consideration with all planned maintenance to increase efficiencies and eliminate waste. For example, in the H-STEM Complex we will recommission the current HVAC infrastructure and incorporate new sustainable technologies that will improve operational savings. Our Facilities Management Sustainability Initiatives will significantly increase operational savings and enhance the rate of return over time.

Alternatives to New Infrastructure

Michigan Tech always considers alternatives to new construction before creating new infrastructure. We have not received a capital outlay from the State of Michigan since 2008, when the Great Lakes Research Center was approved. Since that time, we have repurposed or expanded existing spaces to address needs.

For example, Michigan Tech's doctorate in physical therapy, which was established in partnership with Central Michigan University, occupies renovated space in an existing structure. The Advanced Technology Development Complex (ATDC) was renovated to create an innovative distance learning center that includes lecture and laboratory spaces. A sleep laboratory was created in the existing Student Development Complex to support NIH-funded research in a quiet location that is removed from the main campus.

A new electron microscope is housed in a suite added to the ATDC that provides protection from vibration and electromagnetic interference that could negatively impact the equipment if it were located in a more congested area. Additions and renovations to the existing Chemical Sciences and Engineering Building have also been made. The new chemical storage facility was added to the building, and undergraduate teaching laboratories have recently been updated.

Michigan Tech is a careful and conscientious steward of its facilities, updating and upgrading current spaces whenever possible. In the case of the proposed H-STEM Complex project, the magnitude of changes that are needed necessitates addition of new space as well as renovation of existing facilities.

Alternatives to New Infrastructure

For the H-STEM Complex, a complete renovation of the existing Chemical Sciences and Engineering Building was considered but was not selected for several reasons. The cost to renovate existing small, inflexible labs into modern research facilities was prohibitive. Available space in the building was also insufficient to allow for the addition of modern research facilities that meet new (and anticipated future) safety standards. Additionally, the increase in research and growth in number of students using the building is placing potentially unsustainable demands on the ventilation system.

Renovation of a different facility was also considered but was not selected because the Chemical Sciences and Engineering Building was identified in a 2011 Facilities Condition Assessment as the academic building on campus most in need of renovation. No other building was in need of such extensive renovation to address teaching needs.

An entire newly constructed facility was also considered but was not selected because it would not allow for renovation of existing teaching laboratory space. Construction of new classrooms, classroom labs, and office spaces was determined to be cost-prohibitive, especially as compared to the cost of renovating and repurposing existing space.

The combination of an addition to and renovation of the existing Chemical Sciences and Engineering Building addresses all needs in the most cost-effective way possible. The new addition will provide high-tech, flexible lab space that meets modern safety standards and the needs of students and researchers. Research labs in the existing building, which have exceeded their useful lifespan, will be repurposed to provide areas that require fewer environmental controls and create lab support space.

The H-STEM Engineering and Health Technologies Complex—Phase 1 will enhance Michigan Tech's mission to "deliver action-based undergraduate and graduate education and discover new knowledge through research and innovation." The success of the project will be measured by increased enrollment, career placement, and research expenditures, and the "accomplishments and reputation of our graduates, national and international impact of our research and scholarly activities, and investment in our University" (mtu.edu/stratplan).

Maintenance Schedule

Maintenance Schedule in Excess of $2,000,000

FY2021-FY2025 Maintenance Schedule
Scheduling of maintenance projects is informed by data collected from annual and biannual reporting on facility assessment. Project priorities are responsive to new safety standards, national benchmark goals for research spaces, and overall maintenance needs. This strategic approach allows Michigan Tech to recruit and retain research talent and provide students the most industry-relevant education. Attainment of our goals, in terms of rankings, career placement, and the University's Portrait 2045, depend on our ability to make strategic maintenance decisions.

The University recently completed a large maintenance project in our student apartments, the Daniell Heights Maintenance project. It is valued at $13,600,000 and was completed in June of 2019. Additionally, as a result of the federally declared flooding disaster that took place on June 17, 2018, the University is undertaking a number of repair and remediation projects. The largest associated project is the Administration Building Ground Floor Flood Damage Repair project, estimated to cost $2,400,000.

The University is also considering a restroom renovation project in the next few years in Douglass Houghton Hall ($1,900,000), the addition of a second passenger elevator to the Dow Environmental Sciences and Health Building ($1,280,000), replacement of the heating and ventilating system in the Administration Building ($1,950,000), and roof replacement at the Student Development Complex ($1,850,000), Chemical Sciences and Engineering Building window replacement ($1,250,000), Minerals and Materials Engineering Building heating and ventilation upgrades ($1,500,000), and the replacement of the elevators in the Electrical Energy Resources Center ($1,196,000). While there are a number of additional projects planned for FY2021-FY2025, no other single stand-alone project valued at over $1,000,000 is planned for those years.

Nonroutine Maintenance Budgeted for FY2020 and Relevant Sources of Funding
The University began budgeting general fund dollars toward nonroutine maintenance in FY2014, with $7,500,000 in projects completed to date. A total of $2,200,000 is budgeted for FY2020 with a planned increase of a $500,000 each year until an annual total of $3,000,000 is reached and maintained. In order to maintain a budget-neutral impact on student tuition, increases in the nonroutine maintenance budget have been implemented over an extended period of time.

Relevant Sources
For FY2017-FY2022, the Portage Health Foundation has committed $110,000 per year in support of Michigan Tech's health research. A portion of these funds is earmarked for infrastructure and core facility enhancement. Michigan Tech uses our existing shared application process through the Vice President of Research Office to award funds. Shared facilities awards cover costs associated with research facilities, like replacing and maintaining equipment. Submission of a competitive proposal for University funding is restricted to recognized shared facilities. The goal is to provide substantial infrastructure enhancements to support health-related faculty and student activities.

APPENDICES

Class Section Counts by Enrollment and Level

Fall 2019

As defined by Common Data Set standards

Number of Students Enrolled per Class								
Undergraduate	**2-9**	**10-19**	**20-29**	**30-39**	**40-49**	**50-99**	**100+**	**Total**
Class Sections	265	285	245	106	65	119	31	1,116
Class Subsections	85	214	73	20	19	20		431
Graduate	**2-9**	**10-19**	**20-29**	**30-39**	**40-49**	**50-99**	**100+**	**Total**
Class Sections	106	36	10	2	2		1	157
Class Subsections	24	6	1	0	0	0	0	31

Given the expected growth in enrollment, if we maintain the current student-to-staff/faculty ratios, class size projections over the next several years should not be substantially different than the distribution shown. The project request will alleviate scheduling strain that our growing student population is placing on current facilities, particularly labs.

2022 Five-Year Capital Outlay Plan
Michigan Technological University

III. Staffing and Enrollment

Enrollment Distribution by College and Major

	Standard Learning						Online Learning						
	Undergraduate			Graduate			Undergraduate			Graduate			
	Full Time	Part Time	Total	Full Time	Part Time	Total	Full Time	Part Time	Total	Full Time	Part Time	Total	Grand Total
No College Designated													
Non Degree Seeking (GR) (NDG)	0	0	0	0	4	4	0	0	0	0	2	2	6
Non Degree Seeking (UG) (NDS)	4	50	54	0	0	0	0	0	0	0	0	0	54
Post Degree Studies (PDS)	0	14	14	0	0	0	0	0	0	0	0	0	14
Total No College Designated	**4**	**64**	**68**	**0**	**4**	**4**	**0**	**0**	**0**	**0**	**2**	**2**	**74**
College of Business													
Accounting (BACC)	46	1	47	4	2	6	0	0	0	0	0	0	53
Economics (BEC)	9	0	9	0	0	0	0	0	0	0	0	0	9
Engineering Management (BEM)	66	3	69	0	0	0	0	0	0	0	0	0	69
Finance (BFIN)	44	4	48	0	0	0	0	0	0	0	0	0	48
General Business (BGN)	30	2	32	0	0	0	0	0	0	0	0	0	32
Business Administration (BMBA)	0	0	0	32	14	46	0	0	0	0	0	0	46
Engineering Management (BMEM)	0	0	0	1	0	1	0	0	0	0	0	0	1
Management (BMGT)	43	10	53	0	0	0	0	0	0	0	0	0	53
Management Information Systems (BMIS)	34	1	35	0	0	0	0	0	0	0	0	0	35
Marketing (BMKT)	25	3	28	0	0	0	0	0	0	0	0	0	28
Applied Natural Resource Econ. (BNRE)	0	0	0	1	0	1	0	0	0	0	0	0	1
Data Science (IDS)	0	0	0	2	1	3	0	0	0	0	0	0	3
Total College of Business	**297**	**24**	**321**	**40**	**17**	**57**	**0**	**0**	**0**	**0**	**0**	**0**	**378**
College of Computing													
Cybersecurity (CCY)	39	1	40	0	0	0	0	0	0	0	0	0	40
General Computing (CGN)	9	0	9	0	0	0	0	0	0	0	0	0	9
Health Informatics (CHI)	0	0	0	2	1	3	0	0	0	0	2	2	5
Mechatronics (CMEC)	0	0	0	1	0	1	0	0	0	0	0	0	1
Computational Science & Engrg (EPD5)	0	0	0	3	2	5	0	0	0	0	0	0	5
Data Science (IDS)	0	0	0	16	1	17	0	0	0	0	1	1	18
Computer Science (SCS)	432	13	445	46	10	56	0	0	0	0	0	0	501
Cybersecurity (SCSC)	0	0	0	6	0	6	0	0	0	0	0	0	6
Software Engineering (SSEN)	90	6	96	0	0	0	0	0	0	0	0	0	96
Computer Network & System Admn (TCSA)	63	3	66	0	0	0	0	0	0	0	0	0	66
Electrical Eng Tech (TEET)	32	1	33	0	0	0	0	0	0	0	0	0	33
Total College of Computing	**665**	**24**	**689**	**74**	**14**	**88**	**0**	**0**	**0**	**0**	**3**	**3**	**780**
College of Engineering													
Adv Electric Power Engineering (CAEP)	0	0	0	0	0	0	0	0	0	0	3	3	3
Electric Power Engineering (CEPE)	0	2	2	0	0	0	0	0	0	0	0	0	2
Hybrid Elec. Drive Vehicle Eng (CHEV)	0	0	0	0	0	0	0	0	0	0	4	4	4
Applied Geophysics (EAG)	7	0	7	0	0	0	0	0	0	0	0	0	7
Biomedical Engineering (EBE)	269	2	271	16	2	18	0	0	0	0	0	0	289
Engineering (EBS)	18	0	18	0	0	0	0	0	0	0	0	0	18
Civil Engineering (ECE)	296	11	307	25	6	31	0	0	0	0	12	12	350
Geospatial Engineering (ECGE)	9	0	9	0	0	0	0	0	0	0	0	0	9
Chemical Engineering (ECM)	375	28	403	26	3	29	0	0	0	0	0	0	432
Computer Engineering (ECP)	254	8	262	8	3	11	0	0	0	0	0	0	273
Electrical Engineering (EEE)	380	19	399	65	11	76	0	0	0	0	25	25	500
Environmental Engineering (EEN)	161	10	171	10	5	15	0	0	0	0	0	0	186
Environmental Engrg Science (EENS)	0	0	0	1	0	1	0	0	0	0	0	0	1
Geological Engineering (EGE)	21	2	23	8	1	9	0	0	0	0	0	0	32
Geology (EGL)	16	4	20	16	14	30	0	0	0	0	0	0	50
General Engineering (EGN)	136	2	138	0	0	0	0	0	0	0	0	0	138
Geophysics (EGP)	0	0	0	3	4	7	0	0	0	0	0	0	7
Engineering (EGR)	0	0	0	3	1	4	0	0	0	0	2	2	6
Mechanical Engineering (EME)	1,163	77	1,240	146	33	179	0	0	0	1	25	26	1,445
Mining Engineering (EMG)	10	0	10	1	1	2	0	0	0	0	0	0	12
Materials Science and Engrg (EMSE)	84	12	96	26	10	36	0	0	0	1	5	6	138
Engineering - Environmental (EPD2)	0	0	0	6	2	8	0	0	0	0	0	0	8
Computational Science & Engrg (EPD5)	0	0	0	2	1	3	0	0	0	0	0	0	3
Robotics Engineering (ERE)	6	0	6	0	0	0	0	0	0	0	0	0	6
Atmospheric Sciences (IAS)	0	0	0	1	0	1	0	0	0	0	0	0	1
Automotive Systems & Controls (IASC)	0	0	0	0	0	0	0	0	0	0	6	6	6
Mechanical Eng-Eng Mechanics (MEEM)	0	0	0	75	14	89	0	0	0	1	20	21	110
Integrated Geospatial Tech (TGT)	0	0	0	1	1	2	0	0	0	1	4	5	7
Mechanical Engineering Tech (TMET)	152	15	167	0	0	0	0	0	0	0	0	0	167
Surveying Engineering (TSE)	6	0	6	0	0	0	0	0	0	0	0	0	6
Total College of Engineering	**3,363**	**192**	**3,555**	**439**	**112**	**551**	**0**	**0**	**0**	**4**	**106**	**110**	**4,216**

2022 Five-Year Capital Outlay Plan
Michigan Technological University

III. Staffing and Enrollment

Enrollment Distribution by College and Major

	Standard Learning						Online Learning						
	Undergraduate			Graduate			Undergraduate			Graduate			
	Full Time	Part Time	Total	Full Time	Part Time	Total	Full Time	Part Time	Total	Full Time	Part Time	Total	Grand Total
College of Forest Resources and Environmental Science													
Computational Science & Engrg (EPD5)	0	0	0	1	0	1	0	0	0	0	0	0	1
Applied Ecology (FAE)	0	0	0	9	0	9	0	0	0	0	0	0	9
App Ecol & Environ Sci (FES)	50	2	52	0	0	0	0	0	0	0	0	0	52
Forest Ecology & Mgmt (FFEM)	0	0	0	4	4	8	0	0	0	0	0	0	8
Forestry (FFR)	72	3	75	4	1	5	0	0	0	0	0	0	80
Forest Science (FFS)	0	0	0	17	4	21	0	0	0	0	0	0	21
Geographic Information Science (FGIS)	0	0	0	6	3	9	0	0	0	0	0	0	9
Forestry (FMF)	0	0	0	9	0	9	0	0	0	0	0	0	9
For Molec Genetics & Biotec (FMGB)	0	0	0	1	1	2	0	0	0	0	0	0	2
Natural Resources Management (FNRM)	6	0	6	0	0	0	0	0	0	0	0	0	6
Sustainable Bioproducts (FSB)	1	0	1	0	0	0	0	0	0	0	0	0	1
Wildlife Ecology & Cons (FWEC)	39	0	39	0	0	0	0	0	0	0	0	0	39
Wildlife Ecology & Mgmt (FWEM)	24	0	24	0	0	0	0	0	0	0	0	0	24
Total College of Forest Resources and Environmental Science	**192**	**5**	**197**	**51**	**13**	**64**	**0**	**0**	**0**	**0**	**0**	**0**	**261**
Interdisciplinary Programs													
Mechatronics (IME)	0	0	0	7	3	10	0	0	0	0	0	0	10
Mechatronics (IMX)	1	0	1	0	0	0	0	0	0	0	0	0	1
Construction Management (TCMG)	40	2	42	0	0	0	0	0	0	0	0	0	42
Total Interdisciplinary Programs	**41**	**2**	**43**	**7**	**3**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**53**
College of Sciences & Arts													
Computational Science & Engrg (EPD5)	0	0	0	2	1	3	0	0	0	0	0	0	3
Atmospheric Sciences (IAS)	0	0	0	5	0	5	0	0	0	0	0	0	5
Biochemistry/Molecular Biology (IBMB)	0	0	0	8	1	9	0	0	0	0	0	0	9
App. Cognitive Sci & Human Fac (SACS)	0	0	0	13	10	23	0	0	0	0	0	0	23
Humanities (SAH)	2	0	2	0	0	0	0	0	0	0	0	0	2
Anthropology (SANT)	8	1	9	0	0	0	0	0	0	0	0	0	9
Applied Physics (SAP)	13	0	13	15	0	15	0	0	0	0	0	0	28
Applied Science Education (SASE)	0	0	0	0	1	1	0	0	0	0	7	7	8
Applied Statistics (SAST)	0	0	0	1	0	1	0	0	0	0	66	66	67
Bioinformatics (SBI)	16	0	16	0	0	0	0	0	0	0	0	0	16
Biological Sciences (SBL)	91	6	97	26	9	35	0	0	0	0	0	0	132
Communication, Culture & Media (SCCM)	14	4	18	0	0	0	0	0	0	0	0	0	18
Chemistry (SCH)	36	1	37	28	1	29	0	0	0	0	0	0	66
Cheminformatics (SCHI)	3	0	3	0	0	0	0	0	0	0	0	0	3
Pharmaceutical Chemistry (SCHP)	15	0	15	0	0	0	0	0	0	0	0	0	15
Ecology & Evolutionary Biology (SEEB)	4	0	4	0	0	0	0	0	0	0	0	0	4
Environmental & Energy Policy (SEEP)	0	0	0	15	8	23	0	0	0	0	0	0	23
Theatre & Electr. Media Perf. (SEMP)	7	0	7	0	0	0	0	0	0	0	0	0	7
English (SEN)	7	1	8	0	0	0	0	0	0	0	0	0	8
Exercise Science (SESC)	63	1	64	0	0	0	0	0	0	0	0	0	64
Audio Production & Technology (SFAT)	24	0	24	0	0	0	0	0	0	0	0	0	24
Theatre & Entertain Tech (BS) (SFET)	21	0	21	0	0	0	0	0	0	0	0	0	21
Sound Design (SFSD)	19	1	20	0	0	0	0	0	0	0	0	0	20
General Sciences and Arts (SGSA)	36	2	38	0	0	0	0	0	0	0	0	0	38
Human Biology (SHB)	10	0	10	0	0	0	0	0	0	0	0	0	10
Indust Heritage & Archaeology (SIHA)	0	0	0	8	6	14	0	0	0	0	0	0	14
Kinesiology (SKIN)	0	0	0	7	0	7	0	0	0	0	0	0	7
Integrative Physiology (SKIP)	0	0	0	6	0	6	0	0	0	0	0	0	6
Mathematics (SMA)	60	0	60	0	0	0	0	0	0	0	0	0	60
Mathematical Sciences (SMAG)	0	0	0	16	2	18	0	0	0	0	0	0	18
Biochem & Molec Biology-Bio Sc (SMBB)	37	2	39	0	0	0	0	0	0	0	0	0	39
Biochem & Molec Biology-Chem (SMBC)	18	0	18	0	0	0	0	0	0	0	0	0	18
Mathematics & Computer Science (SMCS)	1	0	1	0	0	0	0	0	0	0	0	0	1
Medical Laboratory Science (SML)	61	1	62	0	0	0	0	0	0	0	0	0	62
Physics (BA) (SPA)	4	0	4	0	0	0	0	0	0	0	0	0	4
Physics (SPH)	46	1	47	20	0	20	0	0	0	0	0	0	67
Psychology (SPSY)	35	5	40	0	0	0	0	0	0	0	0	0	40
Rhetoric, Theory and Culture (SRTC)	0	0	0	26	8	34	0	0	0	0	0	0	34
Sports and Fitness Management (SSFM)	12	1	13	0	0	0	0	0	0	0	0	0	13
History (SSH)	8	2	10	0	0	0	0	0	0	0	0	0	10
Industrial Archaeology (SSM)	0	0	0	1	2	3	0	0	0	0	0	0	3
Social Sciences (SSS)	9	0	9	0	0	0	0	0	0	0	0	0	9
Sustainability Sci and Society (SSSU)	18	2	20	0	0	0	0	0	0	0	0	0	20
Statistics (SST)	19	2	21	15	2	17	0	0	0	0	0	0	38
Scientific & Tech Comm (BA) (STA)	4	1	5	0	0	0	0	0	0	0	0	0	5
Scientific & Tech Comm (BS) (STC)	13	1	14	0	0	0	0	0	0	0	0	0	14
Total College of Sciences & Arts	**734**	**35**	**769**	**212**	**51**	**263**	**0**	**0**	**0**	**0**	**73**	**73**	**1,105**
University Total	**5,296**	**346**	**5,642**	**823**	**214**	**1,037**	**0**	**0**	**0**	**4**	**184**	**188**	**6,867**

Projected Enrollment - Fall 2013 to Fall 2026

Year (Fall)	2013 (Actual)	2014 (Actual)	2015 (Actual)	2016 (Actual)	2017 (Actual)	2018 (Actual)	2019 (Actual)	2020 (Prelim)	2021	2022	2023	2024	2025	2026
University Enrollment	6,979	7,104	7,242	7,270	7,319	7,203	7,041	6,867	6,879	6,919	7,121	7,417	7,788	8,178
Graduate Non-Degree	25	22	30	23	37	48	43	20	21	22	23	24	26	27
Masters Enrollment	783	852	936	904	852	781	731	703	738	775	814	855	897	942
Doctoral Enrollment	550	568	555	514	513	546	503	502	527	553	581	610	641	673
Graduate Enrollment	1,358	1,442	1,521	1,441	1,402	1,375	1,277	1,225	1,286	1,350	1,418	1,489	1,564	1,642
Undergraduate Enrollment	5,621	5,662	5,721	5,829	5,917	5,828	5,764	5,642	5,593	5,569	5,703	5,928	6,224	6,536

Note: Includes online learning.

Enrollment by Class - Fall 2013 to Fall 2020 (Preliminary)

	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020 (Prelim)
Undergraduate								
Freshman	1,495	1,435	1,466	1,560	1,553	1,374	1,401	1,300
Sophomore	1,141	1,226	1,254	1,258	1,290	1,298	1,180	1,231
Junior	1,169	1,152	1,203	1,222	1,242	1,282	1,262	1,217
Senior	1,612	1,668	1,640	1,658	1,731	1,774	1,805	1,802
Total Undergraduate	**5,417**	**5,481**	**5,563**	**5,698**	**5,816**	**5,728**	**5,648**	**5,550**
Graduate								
Master's	732	805	883	858	809	735	639	557
Doctoral	532	547	529	493	494	520	478	475
Total Graduate	**1,264**	**1,352**	**1,412**	**1,351**	**1,303**	**1,255**	**1,117**	**1,032**
Total Standard Degree Seeking	**6,681**	**6,833**	**6,975**	**7,049**	**7,119**	**6,983**	**6,765**	**6,582**
Other Standard Learning								
Special & Unclassified	152	123	100	86	69	65	80	54
Post Graduate	52	58	57	44	32	35	36	38
Non-degree Graduate	17	12	23	19	24	33	31	5
Total Other Standard Students	**221**	**193**	**180**	**149**	**125**	**133**	**147**	**97**
On-Line Learning	**77**	**78**	**87**	**72**	**75**	**87**	**129**	**188**
Total All Students	**6,979**	**7,104**	**7,242**	**7,270**	**7,319**	**7,203**	**7,041**	**6,867**

Faculty and Staff to Student Ratios for Major Academic Colleges - Fiscal Year 2019-20

	Faculty FTE	Staff FTE	Student FYES	Faculty to Students Ratio	Staff to Students Ratio	Faculty and Staff to Students Ratio
College of Engineering	163.6	127.8	2,249.8	1:14	1:18	1:8
College of Science & Arts	171.8	68.9	2,761.3	1:16	1:40	1:11
Total University*	427.8	1,033.5	6,189.3	1:14	1:6	1:4

*Also includes Colleges of Business, Forest Resources and Environmental Science, Computing, and all non-academic departments.

Note: FTE and FYES is based on the academic year. FTE excludes temporary nonrepresented employees.

Number of Class Sections with Students Enrolled by Level* - Fall 2020 (Preliminary)

Undergraduate	**2-9**	**10-19**	**20-29**	**30-39**	**40-49**	**50-99**	**100+**	**Total**
Class Sections	237	284	179	79	73	106	24	982
Class Sub-Sections	66	226	67	19	29	15		422
Graduate	**2-9**	**10-19**	**20-29**	**30-39**	**40-49**	**50-99**	**100+**	**Total**
Class Sections	89	32	5	4	1	1		132
Class Sub-Sections	30	5						35

* As defined by Common Data Set standards

Online Learning Projections 2020-21 through 2025-26

Year	Type of Students[1]		Projected #	G/UG%[2]
2020-21	A. On Campus Online		1,071	21/79
	B. Off Campus Online		1,066	31/69
	C. Corporate Off Campus		5	100/0
	D. Dual-Enrollment	Secondary School	8	0/100
2021-22	A. On Campus Online		1,125	24/76
	B. Off Campus Online		1,119	34/66
	C. Corporate Off Campus		5	100/0
	D. Dual-Enrollment	Secondary School	8	0/100
2022-23	A. On Campus Online		1,181	27/73
	B. Off Campus Online		1,175	37/63
	C. Corporate Off Campus		6	100/0
	D. Dual-Enrollment	Secondary School	9	0/100
2023-24	A. On Campus Online		1,240	30/70
	B. Off Campus Online		1,234	40/60
	C. Corporate Off Campus		6	100/0
	D. Dual-Enrollment	Secondary School	9	0/100
2024-25	A. On Campus Online		1,302	33/67
	B. Off Campus Online		1,295	43/57
	C. Corporate Off Campus		6	100/0
	D. Dual-Enrollment	Secondary School	10	0/100
2025-26	A. On Campus Online		1,367	36/64
	B. Off Campus Online		1,360	46/54
	C. Corporate Off Campus		6	100/0
	D. Dual-Enrollment	Secondary School	10	0/100

Notes:

1 A type- On Campus OnLine- Students taking at least one class using Online technology.

B type- Off Campus OnLine- Students taking at least one class using Online technology.

C type- Current corporate contract model- GM, Ford, and others.

D type- Dual enrollment with secondary school students with targeted service and recruiting effort. Usually one course a term.

2 G/UG% Graduate/ Undergraduate %

#	BUILDING	TYPE	GROSS	NET	RATIO
1	Administration Building	Administrative	73,389	50,500	1.45
2	Electrical Substation	Service	786	545	1.44
3	Michigan Tech Lakeshore Center	Administrative	61,365	39,400	1.56
4	ROTC Building	Classroom - 70%, Offices - 30%	21,584	14,824	1.46
5	Academic Offices Building	Offices	27,405	17,869	1.53
6	Annex Building	Science	10,956	9,042	1.21
7	Electrical Energy Resources	Engineering	162,140	108,843	1.49
8	DOW Envir Sciences & Eng Bldg	Engineering - 70%, Biology - 30%	184,180	110,459	1.67
9	Alumni House	Administrative	7,784	4,790	1.63
10	Rozsa Performing Arts & Educ	Auditorium	80,000	51,309	1.56
11	Walker - Arts & Humanities	Classroom	87,094	49,176	1.77
12	Minerals & Materials Engr Bldg	Engineering - 69%, Laboratory 31%	263,671	144,670	1.82
13	Center for Diversity and Inclusion	Administrative	4,259	3,544	1.20
14	Grover C. Dillman Hall	Engineering - 75%, Classroom - 25%	90,959	58,809	1.55
15	Fisher Hall	Science - 63%, Classroom - 37%	112,100	67,123	1.67
16	Public Safety & Police Services Building	Administrative	2,755	2,078	1.33
17	J.R. Van Pelt Library	Library	130,031	105,824	1.23
18	U.J. Noblet Forestry Building	Science - 70%, Laboratory - 30%	95,337	71,425	1.33
19	Chemical Sciences & Engr Building	Engineering - 32%, Chemistry - 9%, Laboratory - 31%, Classroom - 28%	162,500	94,921	1.71
20	R.L. Smith (MEEM) Building	Engineering - 49%, Laboratory - 23%, Classroom - 28%	162,500	96,108	1.69
24	Student Development Complex	Gymnasium	343,393	235,274	1.46
25	Kearly Stadium Press Box	Gymnasium	4,416	3,445	1.28
26	MTN Uplink Equipment Bldg	Service	265	120	2.21
28	Kanwal and Ann Rekhi Hall	Science - 86%, Classroom - 14%	51,439	39,352	1.31
30	Little Huskies Child Care	Dormitory	4,600	4,096	1.12
31	Douglass Houghton Hall	Dormitory	92,500	55,956	1.65
32	Daniell Heights Apartments	Dormitory	220,700	174,977	1.26
33	Daniell Heights Maintenance	Service	1,152	1,081	1.07
34	Memorial Union Building	Administrative	92,935	63,387	1.47
35	Daniell Heights Nursery	Dormitory	2,400	2,190	1.10
36	21725 Woodland Road House	Dormitory	2,452	2,269	1.08
37	Wadsworth Hall	Dormitory	300,239	185,647	1.62
38	West McNair Hall	Dormitory	51,522	32,516	1.58
39	McNair Hall Food Services	Dining Hall	18,000	11,683	1.54
40	East McNair Hall	Dormitory	71,300	45,686	1.56
41	Central Energy Plant	Service	12,780	10,386	1.23
42	Facilities Management Storage	Warehouse	5,680	5,322	1.07
44	Facilities Building	Service	21,176	16,377	1.29

45	Kettle-Gundlach House	Dormitory	5,096	4,072	1.25
46	Tech Trails Waxing Center	Gymnasium	4,536	3,629	1.25
47	217 East Street House	Dormitory	3,191	3,135	1.02
48	Hillside Place	Dormitory	77,926	56,330	1.38
49	Property Storage	Warehouse	4,872	4,644	1.05
50	Gates Tennis Center	Gymnasium	29,610	28,737	1.03
51	207 East Street House	Administration	2,972	2,573	1.16
52	PLGC Clubhouse	Gymnasium	4,465	4,271	1.05
53	Mont Ripley Ski Hill	Gymnasium	2,100	1,987	1.06
54	Mont Ripley Ski Chalet	Gymnasium	4,600	3,644	1.26
55	Mont Ripley Storage	Warehouse	4,080	3,240	1.26
56	Daniell Heights Storage 56	Warehouse	1,261	1,189	1.06
57	209 East Street House	Dormitory	2,891	1,985	1.46
58	PLGC Maintenance -1	Warehouse	3,276	2,621	1.25
59	PLGC Maintenance -2	Warehouse	625	502	1.25
60	PLGC Cart Storage -A	Warehouse	4,500	3,600	1.25
61	PLGC Cart Storage - B	Warehouse	3,600	2,800	1.29
62	PLGC Cart Storage -C	Warehouse	4,500	3,600	1.25
63	PLGC Maintenance - 3	Service	1,040	664	1.57
64	PLGC Pump House	Service	144	115	1.25
65	Daniell Heights Storage 65	Warehouse	3,200	3,081	1.04
66	Tech Trails Timing Building	Gymnasium	192	165	1.16
67	Tech Trails Warming Building	Gymnasium	280	247	1.13
68	SDC Storage	Warehouse	1,800	1,711	1.05
69	KRC Engineering Design Center	Engineering	13,998	6,751	2.07
70	KRC Scientific & Admin Offices	Offices	10,037	7,141	1.41
71	KRC Machine & Vehicle Shops	Service	4,000	3,823	1.05
72	KRC Vehicle Service Bldg T3	Service	5,600	5,421	1.03
73	KRC Vehicle Storage Bldg T4	Warehouse	4,000	3,861	1.04
74	KRC Engineering Laboratories	Engineering - 17%, Laboratory - 83%	4,665	3,362	1.39
75	KRC Special Projects Facility	Engineering	1,000	787	1.27
76	KRC Support Services Facility	Service	1,000	894	1.12
77	KRC Water Truck Storage	Warehouse	1,600	1,490	1.07
78	KRC Eng Support Facil Bendix	Engineering	5,152	4,786	1.08
79	KRC Chrysler Support Fac II	Engineering	4,000	3,746	1.07
80	KRC Cold Storage Building	Warehouse	4,000	3,828	1.04
81	Power Generation Building	Service	3,432	3,151	1.09
82	21610 Woodland Road House	Dormitory	5,702	4,708	1.21
84	Harold Meese Center	Science - 88%, Classroom - 12%	15,020	10,292	1.46

86	MTU Tower Building	Service	288	260	1.11
88	DPSPS/EMS Building	Warehouse	1,000	922	1.08
89	Tech Trails Maintenance	Warehouse	1,200	1,131	1.06
90	Sands Pilot Plant	Engineering	11,520	10,805	1.07
92	Advanced Energy Research Building	Engineering - 15%, Laboratory - 85%	4,128	3,844	1.07
93	Fish Hatchery Building	Science	1,360	1,100	1.24
94	AMJOCH Observatory	Science	433	352	1.23
95	Advanced Technology Development Complex	Administrative - 12%, Engineering - 88%	25,097	20,676	1.21
96	SDC Annex Building	Warehouse	2,786	2,700	1.03
100	Great Lakes Research Center	Laboratory - 27%, Science - 73%	54,778	35,936	1.52
101	Tech Trails Storage	Warehouse	672	646	1.04
102	Advanced Power Systems Research Center	Laboratory - 93%, Office - 7%	56,332	53,114	1.06
103	A.E. Seaman Mineral Museum	Library	9,000	8,234	1.09
104	Mineral Museum Storage	Warehouse	2,340	1,983	1.18
105	KRC Cold Storage Building	Warehouse	1,600	1,403	1.14
106	Sands Storage	Warehouse	576	529	1.09
107	212 East Street House	Dormitory	3,068	2,406	1.28
108	KRC Inspection Pit	Service	416	375	1.11
109	Mt Ripley Pump House	Service	570	529	1.08
110	214 East Street House	Dormitory	2,941	1,843	1.60
111	46645 US-41 House	Dormitory	5,721	4,577	1.25
112	Facilities Storage	Warehouse	6,600	6,447	1.02
201	FCF Hemlock Residence	Dormitory	2,160	1,728	1.25
202	FCF Sassafras Residence	Dormitory	1,190	952	1.25
203	FCF Elm Residence	Dormitory	1,348	1,078	1.25
204	FCF Birdseye Residence	Dormitory	1,581	1,265	1.25
205	FCF Spruce Residence	Dormitory	1,462	1,170	1.25
206	FCF Tamarack Residence	Dormitory	1,779	1,423	1.25
207	FCF Birch Residence	Dormitory	1,392	1,114	1.25
208	FCF Basswood Residence	Dormitory	1,515	1,212	1.25
209	FCF Cedar Residence	Dormitory	1,470	1,176	1.25
210	FCF Beech Residence	Dormitory	1,269	1,015	1.25
211	FCF Ash Residence	Dormitory	2,114	1,691	1.25
212	FCF Balsam Residence	Dormitory	864	691	1.25
213	FCF Pump House	Service	1,070	636	1.68
214	FCF Sawmill Museum	Library	6,720	5,376	1.25
215	FCF 8-Car Garage	Garage	1,730	1,384	1.25
216	FCF Dorm 2	Dormitory	2,066	1,327	1.56
217	FCF Classroom 1	Classroom	2,480	1,957	1.27

218	FCF Sauna Building	Dormitory	864	691	1.25
219	FCF Classroom 2	Classroom	1,150	920	1.25
220	FCF Recreation	Dormitory	1,150	1,068	1.08
221	FCF Computer Lab	Classroom	1,150	920	1.25
222	FCF Classroom 3	Classroom	1,150	1,089	1.06
223	FCF Dorm 1	Dormitory	11,250	9,000	1.25
224	FCF Carriage House	Dormitory	2,695	2,156	1.25
225	FCF Storage 3	Warehouse	255	204	1.25
226	FCF Storage 2	Warehouse	2,320	1,856	1.25
227	FCF Storage 1	Warehouse	260	208	1.25
229	FCF Lumber Storage	Warehouse	2,520	2,016	1.25
230	FCF 9-Car Garage	Garage	4,180	3,344	1.25
231	FCF Maintenance	Service	9,313	8,703	1.07
233	FCF Main Office	Office	3,200	2,920	1.10
235	FCF Wellhouse	Service	228	183	1.25
236	FCF Reservoir Shelter	Service	768	614	1.25

Michigan Technological University
Room Utilization Reports
Fall 2019, Monday-Friday, 8:00 AM - 10:00 AM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	20 Hr Utilization
1	5	Acad Ofc	201	ClsRm	610	25	1	11	37%	3	15%
2	19	Chem-Sci	101	ClsRm	1,184	66	3	106	68%	9	45%
3	19		102	ClsRm	1,162	66	2	102	89%	6	30%
4	19		103	ClsLab	1,308	20	2	34	94%	6	30%
5	19		0104A	ClsRm	582	32	2	13	26%	6	30%
6	19		0104B	ClsRm	594	32	2	4	13%	5	25%
7	19		106	ClsRm	565	30	1	6	24%	3	15%
8	19		108	ClsLab	1,162	44	3	80	65%	9	45%
9	19		211	ClsRm	1,155	55	3	79	81%	6	30%
10	19		215	ClsRm	584	30	3	54	79%	4	20%
11	19		0501N	ClsLab	976	24	2	38	86%	6	30%
12	19		0501S	ClsLab	976	24	2	40	91%	6	30%
13	19		502	ClsLab	1,124	24	2	32	73%	6	30%
14	19		0503N	ClsLab	966	24	2	42	95%	6	30%
15	19		0503S	ClsLab	966	24	2	41	93%	6	30%
16	19		0601N	ClsLab	1,048	28	2	26	87%	6	30%
17	19		0601S	ClsLab	1,048	28	1	9	64%	3	15%
18	8	Dow	610	ClsLab	890	26	6	30	17%	12	60%
19	8		641	ClsRm	2,923	250	3	286	70%	8	40%
20	8		642	ClsRm	1,601	84	3	96	53%	9	45%
21	8		709	ClsLab	744	23	2	6	15%	3	15%
22	7	EERC	100	ClsRm	1,307	82	1	55	73%	3	15%
23	7		103	ClsRm	2,396	151	3	192	89%	3	15%
24	7		214	ClsRm	983	65	3	134	78%	5	25%
25	7		216	ClsRm	551	36	2	5	20%	3	15%
26	7		218	ClsRm	683	45	1	21	53%	2	10%
27	7		226	ClsRm	683	46	3	16	32%	5	25%
28	7		227	ClsRm	551	36	1	16	89%	3	15%
29	7		229	ClsRm	1,048	65	2	90	75%	6	30%
30	7		313	ClsRm	571	36	2	29	73%	6	30%
31	7		315	ClsRm	553	36	3	30	52%	8	40%
32	7		316	ClsRm	823	60	2	63	84%	6	30%
33	7		328	ClsLab	1,140	24	3	40	89%	7	35%
34	7		330	ClsLab	1,558	42	2	76	95%	4	20%
35	7		421	ClsLab	844	24	1	16	80%	1	5%
36	7		427	ClsLab	1,000	24	3	31	97%	5	25%
37	7		431	ClsLab	1,430	16	2	20	61%	5	25%
38	7		722	ClsLab	978	30	1	10	33%	2	10%
39	15	Fisher	101	ClsRm	937	32	1	17	61%	1	5%
40	15		125	ClsRm	583	35	3	40	63%	5	25%
41	15		126	ClsRm	593	35	1	16	64%	2	10%
42	15		127	ClsRm	693	35	2	33	73%	6	30%
43	15		129	ClsRm	792	53	5	112	61%	12	60%
44	15		130	ClsRm	712	44	2	31	41%	6	30%
45	15		131	ClsRm	712	44	2	57	71%	5	25%
46	15		132	ClsRm	693	44	6	47	47%	10	50%
47	15		133	ClsRm	693	44	2	50	86%	6	30%
48	15		135	ClsRm	5,036	476	2	205	81%	4	20%
49	15		138	ClsRm	1,395	92	1	53	106%	4	20%
50	15		139	ClsRm	2,016	125	3	204	91%	9	45%
51	15		229	ClsLab	702	14	4	90	102%	8	40%
52	15		230	ClsRm	579	35	1	30	97%	3	15%
53	15		231	ClsRm	697	44	2	24	37%	6	30%
54	15		325	ClsRm	1,064	72	2	87	81%	6	30%

Michigan Technological University
Room Utilization Reports
Fall 2019, Monday-Friday, 8:00 AM - 10:00 AM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	20 Hr Utilization
55	15		326	ClsRm	1,064	71	4	215	100%	12	60%
56	15		0327B	ClsRm	445	27	2	35	70%	5	25%
57	15		328	ClsRm	928	62	3	77	64%	10	50%
58	15		329	ClsRm	1,065	72	2	109	103%	8	40%
59	15		330	ClsLab	1,065	24	6	17	40%	5	25%
60	15		B020	ClsLab	941	27	5	125	104%	10	50%
61	100	GLRC	102	ClsLab	1,374	28	1	8	53%	3	15%
62	14	Dillman	101	ClsLab	2,187	60	1	28	140%	1	5%
63	14		202	ClsRm	776	36	5	71	69%	9	45%
64	14		203	ClsLab	863	26	2	31	78%	4	20%
65	14		204	ClsRm	761	43	3	51	65%	5	25%
66	14		208	ClsLab	1,559	64	7	126	75%	8	40%
67	14		211	ClsLab	968	48	2	78	98%	6	30%
68	14		214	ClsRm	954	60	3	77	52%	6	30%
69	14		320	ClsRm	1,051	43	3	74	84%	5	25%
70	14		B004	ClsLab	949	16	1	13	87%	1	5%
71	14		B008	ClsLab	1,495	15	1	13	87%	1	5%
72	84	Meese	109	ClsRm	680	25	3	23	66%	6	30%
73	84		110	ClsRm	564	25	2	26	58%	6	30%
74	28	Rekhi	112	ClsLab	775	20	2	47	59%	4	20%
75	28		214	ClsRm	1,328	48	1	19	48%	3	15%
76	28		G005	ClsRm	1,253	54	3	78	83%	8	40%
77	28		G006	ClsRm	1,026	40	5	48	66%	6	30%
78	28		G009	ClsRm	1,280	48	4	61	64%	6	30%
79	12	M&M Bldg	211	ClsLab	338	10	1	10	100%	3	15%
80	12		U111	ClsRm	723	30	2	14	58%	6	30%
81	12		U113	ClsRm	1,069	63	2	64	64%	6	30%
82	12		U115	ClsRm	2,540	240	2	198	75%	5	25%
83	12		U205	ClsRm	421	26	2	5	25%	6	30%
84	20	MEEM	111	ClsRm	1,429	96	3	170	83%	5	25%
85	20		112	ClsRm	1,652	115	3	221	89%	9	45%
86	20		120	ClsLab	2,630	72	5	323	93%	8	40%
87	20		202	ClsLab	951	16	2	34	89%	4	20%
88	20		302	ClsRm	1,129	48	1	12	34%	3	15%
89	20		303	ClsRm	1,131	48	1	43	102%	3	15%
90	20		305	ClsLab	1,175	16	2	24	75%	4	20%
91	20		402	ClsRm	1,265	48	1	5	25%	3	15%
92	20		403	ClsRm	1,131	48	5	104	72%	9	45%
93	20		405	ClsRm	607	40	7	121	78%	10	50%
94	20		406	ClsRm	1,130	40	3	53	68%	6	30%
95	20		502	ClsLab	928	16	1	16	107%	2	10%
96	20		0502A	ClsLab	712	16	3	44	98%	6	30%
97	20		505	ClsLab	1,588	16	1	15	94%	2	10%
98	20		701	ClsLab	867	16	3	44	98%	6	30%
99	20		1101	ClsLab	1,224	19	2	33	83%	6	30%
100	20		1103	ClsLab	1,092	20	1	8	67%	3	15%
101	20		1108	ClsLab	1,116	24	1	22	92%	2	10%
102	10	Rozsa Ctr	120	ClsRm	1,448	60	1	16	53%	3	15%
103	10		208	ClsLab	1,790	50	1	6	30%	3	15%
104	24	SDC	237	ClsRm	789	48	3	52	70%	5	25%
105	24		238	ClsRm	705	40	3	35	56%	7	35%
106	18	Noblet	108	ClsLab	692	24	3	28	70%	6	30%
107	18		143	ClsRm	616	40	4	19	29%	4	20%
108	18		144	ClsRm	1,689	26	2	41	60%	6	30%

Michigan Technological University
Room Utilization Reports
Fall 2019, Monday-Friday, 8:00 AM - 10:00 AM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	20 Hr Utilization
109	18		G002	ClsRm	1,768	125	2	167	100%	6	30%
110	18		G029	ClsLab	1,104	32	1	7	70%	4	20%
111	17	Library	242	ClsLab	1,192	25	2	24	75%	4	20%
112	17		243	ClsRm	578	21	1	11	33%	3	15%
113	37	Wads	G011W	ClsRm	2,385	128	12	261	99%	10	50%
114	11	Walker	109	ClsRm	792	36	3	72	82%	9	45%
115	11		0120A	ClsRm	904	30	3	68	97%	9	45%
116	11		134	ClsRm	1,173	40	1	16	64%	3	15%
117	11		138	ClsRm	296	1	2	14	52%	6	30%
118	11		143	ClsRm	647	25	2	25	56%	6	30%
119	11		144	ClsRm	634	25	2	28	62%	6	30%
120	11		210	ClsLab	1,426	40	2	47	104%	6	30%
	Grand Totals:		Rooms: 120		129,990	5,882	298	7,045	75%	656	28%

Michigan Technological University
Room Utilization Reports
Fall 2019, Monday-Friday, 10:00 AM - 3:00 PM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	25 Hr Utilization
1	5	Acad Ofc	201	ClsRm	610	25	4	53	48%	10	40%
2	19	Chem-Sci	101	ClsRm	1,184	66	9	266	73%	21	84%
3	19		102	ClsRm	1,162	66	6	182	57%	18	72%
4	19		103	ClsLab	1,308	20	4	52	72%	12	48%
5	19		0104A	ClsRm	582	32	7	105	77%	13	52%
6	19		0104B	ClsRm	594	32	12	186	70%	19	76%
7	19		106	ClsRm	565	30	10	77	43%	17	68%
8	19		108	ClsLab	1,162	44	8	160	60%	21	84%
9	19		211	ClsRm	1,155	55	8	169	69%	15	60%
10	19		215	ClsRm	584	30	8	97	63%	12	48%
11	19		408	ClsLab	1,755	12	1	8	80%	6	24%
12	19		0501N	ClsLab	976	24	2	39	89%	6	24%
13	19		0501S	ClsLab	976	24	2	34	77%	6	24%
14	19		502	ClsLab	1,124	24	2	34	77%	6	24%
15	19		0503N	ClsLab	966	24	2	42	95%	6	24%
16	19		0503S	ClsLab	966	24	2	40	91%	6	24%
17	19		504	ClsLab	1,100	24	2	35	88%	6	24%
18	19		0601N	ClsLab	1,048	28	3	35	83%	9	36%
19	19		0601S	ClsLab	1,048	28	2	21	75%	6	24%
20	19		B005	ClsLab	2,473	24	2	95	90%	12	48%
21	8	Dow	420	ClsLab	1,878	15	4	10	56%	2	8%
22	8		610	ClsLab	890	26	8	64	45%	11	44%
23	8		641	ClsRm	2,923	250	7	843	73%	16	64%
24	8		642	ClsRm	1,601	84	8	453	85%	23	92%
25	8		709	ClsLab	744	23	2	12	30%	4	16%
26	8		710	ClsLab	1,287	24	8	67	79%	11	44%
27	8		711	ClsLab	937	16	2	42	105%	3	12%
28	7	EERC	100	ClsRm	1,307	82	5	291	76%	15	60%
29	7		103	ClsRm	2,396	151	9	921	84%	25	100%
30	7		214	ClsRm	983	65	7	253	77%	18	72%
31	7		216	ClsRm	551	36	8	90	49%	17	68%
32	7		218	ClsRm	683	45	11	234	70%	23	92%
33	7		226	ClsRm	683	46	9	125	48%	21	84%
34	7		227	ClsRm	551	36	8	83	45%	16	64%
35	7		229	ClsRm	1,048	65	12	291	59%	20	80%
36	7		313	ClsRm	571	36	6	62	54%	18	72%
37	7		314	ClsRm	553	36	4	71	77%	11	44%
38	7		315	ClsRm	553	36	5	88	66%	12	48%
39	7		316	ClsRm	823	60	6	211	78%	17	68%
40	7		328	ClsLab	1,140	24	5	63	79%	9	36%
41	7		330	ClsLab	1,558	42	4	60	83%	6	24%
42	7		421	ClsLab	844	24	7	56	59%	12	48%
43	7		427	ClsLab	1,000	24	7	54	79%	9	36%
44	7		431	ClsLab	1,430	16	3	47	81%	7	28%
45	7		622	ClsLab	983	16	7	99	94%	14	56%
46	7		722	ClsLab	978	30	6	159	96%	12	48%
47	7		723	ClsLab	834	23	2	29	85%	4	16%
48	7		738	ClsLab	1,001	18	1	14	88%	2	8%
49	7		827	ClsLab	983	16	8	106	88%	16	64%
50	15	Fisher	101	ClsRm	937	32	9	121	58%	17	68%
51	15		125	ClsRm	583	35	9	140	70%	18	72%
52	15		126	ClsRm	593	35	9	163	88%	17	68%
53	15		127	ClsRm	693	35	7	140	76%	21	84%
54	15		129	ClsRm	792	53	9	281	78%	23	92%

Michigan Technological University
Room Utilization Reports
Fall 2019, Monday-Friday, 10:00 AM - 3:00 PM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	25 Hr Utilization
56	15		131	ClsRm	712	44	7	190	75%	21	84%
57	15		132	ClsRm	693	44	10	197	67%	24	96%
58	15		133	ClsRm	693	44	8	172	78%	22	88%
59	15		135	ClsRm	5,036	476	8	1,795	70%	22	88%
60	15		138	ClsRm	1,395	92	5	289	96%	18	72%
61	15		139	ClsRm	2,016	125	7	508	76%	20	80%
62	15		229	ClsLab	702	14	11	186	93%	22	88%
63	15		230	ClsRm	579	35	8	160	62%	21	84%
64	15		231	ClsRm	697	44	7	119	54%	20	80%
65	15		325	ClsRm	1,064	72	8	343	77%	22	88%
66	15		326	ClsRm	1,064	71	6	326	93%	19	76%
67	15		0327B	ClsRm	445	27	8	42	25%	22	88%
68	15		328	ClsRm	928	62	8	375	88%	24	96%
69	15		329	ClsRm	1,065	72	5	258	91%	18	72%
70	15		330	ClsLab	1,065	24	1	15	63%	2	8%
71	15		B020	ClsLab	941	27	11	281	106%	22	88%
72	15		B023	ClsLab	960	12	6	59	82%	12	48%
73	100	GLRC	102	ClsLab	1,374	28	2	25	83%	6	24%
74	14	Dillman	101	ClsLab	2,187	60	3	71	76%	7	28%
75	14		110	ClsLab	1,066	16	3	41	85%	6	24%
76	14		202	ClsRm	776	36	10	143	59%	18	72%
77	14		203	ClsLab	863	26	4	67	84%	9	36%
78	14		204	ClsRm	761	43	9	121	67%	16	64%
79	14		208	ClsLab	1,559	64	13	162	70%	16	64%
80	14		211	ClsLab	968	48	9	132	64%	13	52%
81	14		214	ClsRm	954	60	9	346	84%	20	80%
82	14		302	ClsLab	1,243	32	4	117	98%	8	32%
83	14		320	ClsRm	1,051	43	7	178	80%	17	68%
84	14		B003	ClsLab	988	16	3	43	90%	9	36%
85	14		B004	ClsLab	949	16	1	10	67%	1	4%
86	14		B006	ClsLab	547	6	2	23	77%	2	8%
87	14		B008	ClsLab	1,495	15	2	25	83%	2	8%
88	84	Meese	109	ClsRm	680	25	2	8	27%	3	12%
89	84		110	ClsRm	564	25	6	64	64%	15	60%
90	28	Rekhi	112	ClsLab	775	20	8	239	75%	16	64%
91	28		113	ClsLab	777	20	2	75	94%	4	16%
92	28		117	ClsLab	1,153	18	5	82	80%	11	44%
93	28		214	ClsRm	1,328	48	7	168	70%	20	80%
94	28		G005	ClsRm	1,253	54	6	211	83%	16	64%
95	28		G006	ClsRm	1,026	40	2	34	45%	6	24%
96	28		G009	ClsRm	1,280	48	6	199	78%	18	72%
97	12	M&M Bldg	211	ClsLab	338	10	2	20	100%	6	24%
98	12		U106	ClsLab	347	5	3	16	94%	2	8%
99	12		U111	ClsRm	723	30	1	8	67%	3	12%
100	12		U113	ClsRm	1,069	63	17	245	59%	17	68%
101	12		U115	ClsRm	2,540	240	12	680	78%	22	88%
102	12		U205	ClsRm	421	26	4	6	20%	7	28%
103	20	MEEM	111	ClsRm	1,429	96	6	452	88%	20	80%
104	20		112	ClsRm	1,652	115	7	585	84%	16	64%
105	20		120	ClsLab	2,630	72	3	149	84%	7	28%
106	20		202	ClsLab	951	16	5	35	58%	8	32%
107	20		302	ClsRm	1,129	48	8	171	72%	21	84%
108	20		303	ClsRm	1,131	48	7	145	65%	15	60%
109	20		305	ClsLab	1,175	16	4	49	77%	8	32%

Michigan Technological University
Room Utilization Reports
Fall 2019, Monday-Friday, 10:00 AM - 3:00 PM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	25 Hr Utilization
111	20		403	ClsRm	1,131	48	6	69	45%	15	60%
112	20		405	ClsRm	607	40	10	191	81%	11	44%
113	20		406	ClsRm	1,130	40	6	194	87%	15	60%
114	20		502	ClsLab	928	16	1	16	107%	2	8%
115	20		0502A	ClsLab	712	16	5	68	91%	10	40%
116	20		505	ClsLab	1,588	16	5	71	89%	10	40%
117	20		601	ClsLab	1,980	16	4	24	34%	8	32%
118	20		701	ClsLab	867	16	4	57	95%	8	32%
119	20		1101	ClsLab	1,224	19	4	70	83%	12	48%
120	20		1103	ClsLab	1,092	20	2	33	92%	6	24%
121	20		1106	ClsLab	1,064	24	1	22	96%	3	12%
122	20		1108	ClsLab	1,116	24	3	60	83%	6	24%
123	4	ROTC	101	ClsRm	1,273	47	5	48	51%	8	32%
124	4		201	ClsRm	1,705	30	4	30	50%	6	24%
125	10	Rozsa Ctr	120	ClsRm	1,448	60	5	159	96%	15	60%
126	10		208	ClsLab	1,790	50	4	46	51%	12	48%
127	24	SDC	237	ClsRm	789	48	6	63	46%	10	40%
128	24		238	ClsRm	705	40	3	47	47%	6	24%
129	18	Noblet	108	ClsLab	692	24	5	77	82%	14	56%
130	18		139	ClsLab	618	18	6	41	39%	9	36%
131	18		143	ClsRm	616	40	5	90	79%	14	56%
132	18		144	ClsRm	1,689	26	9	190	77%	20	80%
133	18		146	ClsLab	997	24	1	22	96%	3	12%
134	18		157	ClsLab	954	24	4	63	100%	12	48%
135	18		G002	ClsRm	1,768	125	9	474	89%	17	68%
136	18		G029	ClsLab	1,104	32	4	77	101%	16	64%
137	17	Library	242	ClsLab	1,192	25	3	49	91%	7	28%
138	17		243	ClsRm	578	21	1	12	60%	3	12%
139	37	Wads	G011W	ClsRm	2,385	128	29	578	93%	24	96%
140	11	Walker	109	ClsRm	792	36	6	156	87%	18	72%
141	11		0120A	ClsRm	904	30	8	195	100%	24	96%
142	11		134	ClsRm	1,173	40	7	215	100%	17	68%
143	11		138	ClsRm	296	1	4	23	33%	12	48%
144	11		143	ClsRm	647	25	6	83	59%	16	64%
145	11		144	ClsRm	634	25	6	78	71%	16	64%
146	11		202	ClsLab	1,009	28	3	32	67%	12	48%
147	11		204	ClsLab	745	5	2	17	59%	6	24%
148	11		210	ClsLab	1,426	40	4	45	73%	12	48%
149	11		211	ClsLab	731	15	3	27	57%	7	28%
	Grand Totals:		Rooms: 149		161,931	6,462	864	22,113	76%	1,920	52%

Michigan Technological University
Room Utilization Reports
Fall 2019, Monday-Friday, 3:00 PM - 5:00 PM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	20 Hr Utilization
1	5	Acad Ofc	201	ClsRm	610	25	1	3	10%	3	15%
2	19	Chem-Sci	101	ClsRm	1,184	66	13	66	26%	4	20%
3	19		102	ClsRm	1,162	66	1	10	50%	1	5%
4	19		0104A	ClsRm	582	32	4	31	41%	7	35%
5	19		0104B	ClsRm	594	32	3	58	193%	7	35%
6	19		108	ClsLab	1,162	44	2	84	93%	4	20%
7	19		211	ClsRm	1,155	55	1	32	70%	3	15%
8	19		408	ClsLab	1,755	12	1	2	0%	6	30%
9	19		0501N	ClsLab	976	24	3	56	85%	9	45%
10	19		0501S	ClsLab	976	24	3	56	85%	9	45%
11	19		502	ClsLab	1,124	24	3	52	79%	9	45%
12	19		0503N	ClsLab	966	24	3	57	86%	9	45%
13	19		0503S	ClsLab	966	24	3	59	89%	9	45%
14	19		504	ClsLab	1,100	24	3	55	92%	9	45%
15	19		0601N	ClsLab	1,048	28	2	25	93%	6	30%
16	19		0601S	ClsLab	1,048	28	2	24	86%	6	30%
17	8	Dow	420	ClsLab	1,878	15	4	55	85%	8	40%
18	8		610	ClsLab	890	26	2	36	45%	3	15%
19	8		641	ClsRm	2,923	250	2	204	97%	6	30%
20	8		642	ClsRm	1,601	84	2	70	100%	3	15%
21	8		707	ClsLab	1,198	24	2	32	80%	6	30%
22	8		711	ClsLab	937	16	3	37	62%	4	20%
23	7	EERC	100	ClsRm	1,307	82	2	79	72%	6	30%
24	7		103	ClsRm	2,396	151	4	361	81%	6	30%
25	7		214	ClsRm	983	65	1	32	49%	3	15%
26	7		216	ClsRm	551	36	2	23	46%	4	20%
27	7		218	ClsRm	683	45	2	39	56%	4	20%
28	7		226	ClsRm	683	46	1	26	58%	3	15%
29	7		227	ClsRm	551	36	1	3	8%	3	15%
30	7		229	ClsRm	1,048	65	1	40	83%	3	15%
31	7		313	ClsRm	571	36	2	23	77%	2	10%
32	7		315	ClsRm	553	36	1	4	27%	2	10%
33	7		316	ClsRm	823	60	2	50	104%	2	10%
34	7		328	ClsLab	1,140	24	2	25	71%	4	20%
35	7		330	ClsLab	1,558	42	2	21	78%	4	20%
36	7		421	ClsLab	844	24	3	13	29%	9	45%
37	7		427	ClsLab	1,000	24	3	29	60%	6	30%
38	7		622	ClsLab	983	16	4	58	97%	8	40%
39	7		722	ClsLab	978	30	3	68	76%	6	30%
40	7		723	ClsLab	834	23	2	16	53%	4	20%
41	7		738	ClsLab	1,001	18	2	28	88%	4	20%
42	7		827	ClsLab	983	16	4	59	102%	8	40%
43	15	Fisher	101	ClsRm	937	32	1	3	15%	3	15%
44	15		125	ClsRm	583	35	3	51	93%	4	20%
45	15		126	ClsRm	593	35	3	37	82%	7	35%
46	15		127	ClsRm	693	35	2	21	70%	4	20%
47	15		129	ClsRm	792	53	1	32	70%	3	15%
48	15		130	ClsRm	712	44	4	52	62%	8	40%
49	15		131	ClsRm	712	44	1	6	30%	3	15%
50	15		132	ClsRm	693	44	1	11	28%	3	15%
51	15		133	ClsRm	693	44	1	19	48%	2	10%
52	15		135	ClsRm	5,036	476	2	258	86%	4	20%
53	15		138	ClsRm	1,395	92	2	57	70%	7	35%
54	15		139	ClsRm	2,016	125	2	71	78%	4	20%

Michigan Technological University
Room Utilization Reports
Fall 2019, Monday-Friday, 3:00 PM - 5:00 PM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	20 Hr Utilization
55	15		229	ClsLab	702	14	4	65	98%	8	40%
56	15		230	ClsRm	579	35	3	22	37%	6	30%
57	15		231	ClsRm	697	44	5	87	60%	7	35%
58	15		325	ClsRm	1,064	72	3	118	83%	8	40%
59	15		326	ClsRm	1,064	71	3	129	79%	9	45%
60	15		0327B	ClsRm	445	27	1	7	47%	3	15%
61	15		328	ClsRm	928	62	2	80	73%	6	30%
62	15		329	ClsRm	1,065	72	2	101	101%	8	40%
63	15		330	ClsLab	1,065	24	1	17	61%	2	10%
64	15		B003	ClsLab	689	14	1	11	46%	3	15%
65	15		B020	ClsLab	941	27	4	104	108%	8	40%
66	15		B023	ClsLab	960	12	2	16	67%	4	20%
67	15		B024	ClsLab	812	24	2	11	110%	4	20%
68	14	Dillman	110	ClsLab	1,066	16	1	16	100%	2	10%
69	14		204	ClsRm	761	43	12	14	12%	1	5%
70	14		208	ClsLab	1,559	64	1	21	88%	1	5%
71	14		213	ClsLab	573	12	2	7	23%	3	15%
72	14		214	ClsRm	954	60	2	12	40%	3	15%
73	14		302	ClsLab	1,243	32	2	58	97%	4	20%
74	14		320	ClsRm	1,051	43	1	17	49%	3	15%
75	14		B004	ClsLab	949	16	1	15	100%	1	5%
76	14		B006	ClsLab	547	6	1	15	100%	1	5%
77	84	Meese	109	ClsRm	680	25	1	17	85%	3	15%
78	28	Rekhi	112	ClsLab	775	20	1	31	78%	2	10%
79	28		214	ClsRm	1,328	48	3	53	44%	7	35%
80	28		G005	ClsRm	1,253	54	2	51	77%	5	25%
81	28		G006	ClsRm	1,026	40	2	37	93%	3	15%
82	28		G009	ClsRm	1,280	48	3	58	54%	5	25%
83	12	M&M Bldg	U113	ClsRm	1,069	63	1	___	0%	1	5%
84	12		U115	ClsRm	2,540	240	5	269	91%	3	15%
85	12		U205	ClsRm	421	26	2	3	15%	3	15%
86	20	MEEM	111	ClsRm	1,429	96	1	81	84%	4	20%
87	20		112	ClsRm	1,652	115	1	75	94%	4	20%
88	20		120	ClsLab	2,630	72	6	299	71%	8	40%
89	20		202	ClsLab	951	16	3	45	78%	6	30%
90	20		302	ClsRm	1,129	48	1	10	42%	2	10%
91	20		303	ClsRm	1,131	48	2	55	66%	6	30%
92	20		305	ClsLab	1,175	16	2	19	59%	4	20%
93	20		402	ClsRm	1,265	48	3	69	57%	9	45%
94	20		403	ClsRm	1,131	48	1	___	0%	3	15%
95	20		405	ClsRm	607	40	3	28	62%	4	20%
96	20		406	ClsRm	1,130	40	2	72	75%	6	30%
97	20		502	ClsLab	928	16	1	16	107%	2	10%
98	20		0502A	ClsLab	712	16	1	13	87%	2	10%
99	20		505	ClsLab	1,588	16	1	8	50%	2	10%
100	20		701	ClsLab	867	16	1	14	93%	2	10%
101	20		1101	ClsLab	1,224	19	1	11	46%	3	15%
102	20		1103	ClsLab	1,092	20	1	20	100%	3	15%
103	20		1106	ClsLab	1,064	24	3	50	72%	9	45%
104	20		1108	ClsLab	1,116	24	1	7	29%	2	10%
105	4	ROTC	100	ClsLab	3,385	30	6	114	38%	4	20%
106	4		101	ClsRm	1,273	47	1	17	34%	2	10%
107	4		201	ClsRm	1,705	30	1	11	22%	2	10%
108	10	Rozsa Ctr	120	ClsRm	1,448	60	1	8	16%	3	15%

Michigan Technological University
Room Utilization Reports
Fall 2019, Monday-Friday, 3:00 PM - 5:00 PM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	20 Hr Utilization
109	10		208	ClsLab	1,790	50	3	95	34%	9	45%
110	18	Noblet	G002	ClsRm	1,768	125	2	8	36%	3	15%
111	11	Walker	109	ClsRm	792	36	2	48	80%	6	30%
112	11		0120A	ClsRm	904	30	1	25	100%	3	15%
113	11		134	ClsRm	1,173	40	1	23	92%	3	15%
114	11		143	ClsRm	647	25	2	43	96%	4	20%
115	11		144	ClsRm	634	25	2	38	95%	4	20%
116	11		210	ClsLab	1,426	40	1	6	60%	2	10%
117	11		211	ClsLab	731	15	1	17	106%	4	20%
	Grand Totals:		Rooms: 117		130,742	5,526	265	5,526	69%	531	23%

Michigan Technological University
Room Utilization Reports
Fall 2019, Monday-Friday, 5:00 PM - 11:00 PM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	25 Hr Utilization
1	5	Acad Ofc	201	ClsRm	610	25	2	59	98%	6	24%
2	19	Chem-Sci	101	ClsRm	1,184	66	1	24	48%	3	12%
3	19		102	ClsRm	1,162	66	1	34	68%	3	12%
4	19		0104A	ClsRm	582	32	1	17	0%	2	8%
5	19		0104B	ClsRm	594	32	1	8	53%	3	12%
6	19		408	ClsLab	1,755	12	1	___	0%	6	24%
7	8	Dow	641	ClsRm	2,923	250	13	126	43%	4	16%
8	8		642	ClsRm	1,601	84	12	33	17%	1	4%
9	8		711	ClsLab	937	16	1	8	40%	1	4%
10	7	EERC	214	ClsRm	983	65	24	82	21%	2	8%
11	7		218	ClsRm	683	45	1	7	23%	1	4%
12	7		330	ClsLab	1,558	42	2	50	89%	4	16%
13	7		622	ClsLab	983	16	2	28	93%	4	16%
14	7		738	ClsLab	1,001	18	3	29	97%	9	36%
15	7		827	ClsLab	983	16	4	29	37%	10	40%
16	15	Fisher	125	ClsRm	583	35	1	18	0%	2	8%
17	15		126	ClsRm	593	35	1	21	0%	2	8%
18	15		130	ClsRm	712	44	1	19	76%	2	8%
19	15		131	ClsRm	712	44	1	23	0%	2	8%
20	15		139	ClsRm	2,016	125	14	234	49%	4	16%
21	15		229	ClsLab	702	14	4	47	109%	8	32%
22	15		231	ClsRm	697	44	1	18	0%	2	8%
23	15		B020	ClsLab	941	27	2	48	109%	4	16%
24	14	Dillman	204	ClsRm	761	43	1	10	33%	3	12%
25	14		208	ClsLab	1,559	64	12	23	10%	1	4%
26	84	Meese	109	ClsRm	680	25	1	3	30%	2	8%
27	28	Rekhi	112	ClsLab	775	20	1	28	70%	2	8%
28	20	MEEM	120	ClsLab	2,630	72	12	26	12%	1	4%
29	20		202	ClsLab	951	16	1	13	57%	2	8%
30	20		302	ClsRm	1,129	48	25	81	18%	6	24%
31	20		303	ClsRm	1,131	48	1	30	100%	3	12%
32	20		1101	ClsLab	1,224	19	3	51	85%	9	36%
33	20		1108	ClsLab	1,116	24	1	23	96%	2	8%
34	4	ROTC	100	ClsLab	3,385	30	1	3	6%	2	8%
35	10	Rozsa Ctr	208	ClsLab	1,790	50	2	21	21%	6	24%
36	24	SDC	238	ClsRm	705	40	1	5	33%	5	20%
37	18	Noblet	144	ClsRm	1,689	26	7	34	47%	1	4%
38	17	Library	243	ClsRm	578	21	1	15	60%	3	12%
39	11	Walker	109	ClsRm	792	36	1	11	55%	1	4%
40	11		0120A	ClsRm	904	30	1	25	100%	3	12%
41	11		134	ClsRm	1,173	40	2	46	92%	5	20%
Grand Totals:			Rooms: 41		47,467	1,805	168	1,410	42%	142	14%

Michigan Technological University
Room Utilization Reports
Fall 2019, Saturday-Sunday, All Hours

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs
1	8	Dow	610	ClsLab	890	26	1	19	48%	2
Grand Totals:			Rooms: 1		890	26	1	19	48%	2

Michigan Technological University
Room Utilization Reports
Spring 2020, Monday-Friday, 8:00 AM - 10:00 AM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	20 Hr Utilization
1	5	Acad Ofc	201	ClsRm	610	25	1	8	40%	3	15%
2	19	Chem-Sci	101	ClsRm	1,184	66	1	55	92%	3	15%
3	19		102	ClsRm	1,162	66	4	81	51%	9	45%
4	19		103	ClsLab	1,308	20	1	18	60%	3	15%
5	19		0104B	ClsRm	594	32	1	19	95%	1	5%
6	19		106	ClsRm	565	30	1	22	110%	2	10%
7	19		108	ClsLab	1,162	44	2	63	79%	6	30%
8	19		211	ClsRm	1,155	55	3	69	46%	9	45%
9	19		215	ClsRm	584	30	4	22	44%	6	30%
10	19		502	ClsLab	1,124	24	1	4	33%	3	15%
11	19		0601N	ClsLab	1,048	28	2	20	71%	8	40%
12	8	Dow	610	ClsLab	890	26	4	26	26%	6	30%
13	8		641	ClsRm	2,923	250	5	539	81%	7	35%
14	8		642	ClsRm	1,601	84	4	236	93%	11	55%
15	8		709	ClsLab	744	23	2	10	50%	4	20%
16	8		711	ClsLab	937	16	1	6	43%	3	15%
17	7	EERC	100	ClsRm	1,307	82	2	93	62%	6	30%
18	7		103	ClsRm	2,396	151	2	182	89%	6	30%
19	7		214	ClsRm	983	65	3	149	93%	4	20%
20	7		216	ClsRm	551	36	1	___	0%	2	10%
21	7		218	ClsRm	683	45	1	28	68%	3	15%
22	7		226	ClsRm	683	46	1	14	56%	3	15%
23	7		227	ClsRm	551	36	2	38	76%	6	30%
24	7		229	ClsRm	1,048	65	2	96	83%	5	25%
25	7		313	ClsRm	571	36	3	35	63%	5	25%
26	7		314	ClsRm	553	36	1	12	50%	3	15%
27	7		315	ClsRm	553	36	3	41	69%	7	35%
28	7		316	ClsRm	823	60	1	21	53%	3	15%
29	7		328	ClsLab	1,140	24	2	33	110%	4	20%
30	7		330	ClsLab	1,558	42	1	31	129%	1	5%
31	7		421	ClsLab	844	24	3	54	106%	6	30%
32	7		431	ClsLab	1,430	16	3	54	100%	8	40%
33	7		622	ClsLab	983	16	2	29	94%	4	20%
34	7		738	ClsLab	1,001	18	1	14	100%	2	10%
35	7		827	ClsLab	983	16	1	6	38%	2	10%
36	15	Fisher	101	ClsRm	937	32	2	19	42%	6	30%
37	15		125	ClsRm	583	35	2	40	70%	6	30%
38	15		127	ClsRm	693	35	2	22	49%	6	30%
39	15		129	ClsRm	792	53	3	80	55%	8	40%
40	15		130	ClsRm	712	44	1	19	59%	4	20%
41	15		131	ClsRm	712	44	1	6	30%	3	15%
42	15		132	ClsRm	693	44	1	37	93%	3	15%
43	15		133	ClsRm	693	44	1	17	49%	3	15%
44	15		135	ClsRm	5,036	476	2	146	61%	5	25%
45	15		138	ClsRm	1,395	92	3	201	91%	9	45%
46	15		139	ClsRm	2,016	125	3	205	96%	10	50%
47	15		230	ClsRm	579	35	1	8	31%	3	15%
48	15		231	ClsRm	697	44	3	15	30%	5	25%
49	15		325	ClsRm	1,064	72	1	41	98%	4	20%
50	15		326	ClsRm	1,064	71	3	141	99%	9	45%
51	15		0327B	ClsRm	445	27	3	20	32%	9	45%
52	15		328	ClsRm	928	62	3	120	83%	10	50%
53	15		329	ClsRm	1,065	72	3	147	88%	10	50%
54	100	GLRC	102	ClsLab	1,374	28	1	20	100%	3	15%

Michigan Technological University
Room Utilization Reports
Spring 2020, Monday-Friday, 8:00 AM - 10:00 AM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	20 Hr Utilization
56	14		202	ClsRm	776	36	2	17	39%	4	20%
57	14		203	ClsLab	863	26	2	21	105%	4	20%
58	14		204	ClsRm	761	43	3	72	100%	5	25%
59	14		208	ClsLab	1,559	64	8	108	64%	9	45%
60	14		211	ClsLab	968	48	1	9	30%	3	15%
61	14		214	ClsRm	954	60	3	75	91%	6	30%
62	14		302	ClsLab	1,243	32	2	63	98%	4	20%
63	14		320	ClsRm	1,051	43	3	35	55%	4	20%
64	14		B003	ClsLab	988	16	1	16	100%	3	15%
65	14		B008	ClsLab	1,495	15	1	14	93%	3	15%
66	84	Meese	109	ClsRm	680	25	1	6	60%	3	15%
67	28	Rekhi	112	ClsLab	775	20	1	23	58%	2	10%
68	28		117	ClsLab	1,153	18	2	4	20%	3	15%
69	28		214	ClsRm	1,328	48	2	44	73%	6	30%
70	28		G005	ClsRm	1,253	54	3	88	80%	10	50%
71	28		G009	ClsRm	1,280	48	4	16	25%	6	30%
72	12	M&M Bldg	U111	ClsRm	723	30	1	12	40%	3	15%
73	12		U113	ClsRm	1,069	63	1	47	98%	3	15%
74	12		U115	ClsRm	2,540	240	4	273	81%	7	35%
75	12		U205	ClsRm	421	26	1	8	80%	3	15%
76	12		U209	ClsLab	664	7	1	9	90%	2	10%
77	20	MEEM	111	ClsRm	1,429	96	3	133	85%	7	35%
78	20		112	ClsRm	1,652	115	2	152	89%	6	30%
79	20		120	ClsLab	2,630	72	4	184	74%	7	35%
80	20		202	ClsLab	951	16	1	21	91%	2	10%
81	20		302	ClsRm	1,129	48	2	55	66%	6	30%
82	20		303	ClsRm	1,131	48	1	49	102%	3	15%
83	20		305	ClsLab	1,175	16	3	47	98%	6	30%
84	20		402	ClsRm	1,265	48	1	24	50%	3	15%
85	20		403	ClsRm	1,131	48	2	49	67%	6	30%
86	20		405	ClsRm	607	40	4	60	94%	4	20%
87	20		406	ClsRm	1,130	40	2	82	99%	6	30%
88	20		505	ClsLab	1,588	16	3	41	85%	6	30%
89	20		601	ClsLab	1,980	16	2	19	79%	4	20%
90	20		701	ClsLab	867	16	1	15	100%	2	10%
91	20		1101	ClsLab	1,224	19	2	16	44%	6	30%
92	20		1103	ClsLab	1,092	20	1	22	110%	3	15%
93	4	ROTC	101	ClsRm	1,273	47	1	25	125%	3	15%
94	10	Rozsa Ctr	120	ClsRm	1,448	60	1	20	67%	3	15%
95	10		208	ClsLab	1,790	50	1	2	100%	1	5%
96	24	SDC	237	ClsRm	789	48	1	21	66%	3	15%
97	24		238	ClsRm	705	40	1	5	17%	3	15%
98	18	Noblet	108	ClsLab	692	24	2	12	30%	2	10%
99	18		139	ClsLab	618	18	1	5	31%	2	10%
100	18		143	ClsRm	616	40	4	11	28%	4	20%
101	18		144	ClsRm	1,689	26	3	49	74%	9	45%
102	18		146	ClsLab	997	24	1	4	20%	3	15%
103	18		G002	ClsRm	1,768	125	2	92	84%	6	30%
104	18		G029	ClsLab	1,104	32	1	7	35%	2	10%
105	11	Walker	109	ClsRm	792	36	2	25	56%	6	30%
106	11		0120A	ClsRm	904	30	3	75	100%	9	45%
107	11		134	ClsRm	1,173	40	2	63	105%	6	30%
108	11		138	ClsRm	296	1	1	2	13%	3	15%
109	11		143	ClsRm	647	25	1	11	44%	3	15%

Michigan Technological University
Room Utilization Reports
Spring 2020, Monday-Friday, 8:00 AM - 10:00 AM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	20 Hr Utilization
111	11		210	ClsLab	1,426	40	4	68	62%	10	50%
	Grand Totals:		Rooms: 111		122,783	5,531	228	5,930	75%	539	25%

Michigan Technological University
Room Utilization Reports
Spring 2020, Monday-Friday, 10:00 AM - 3:00 PM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	25 Hr Utilization
1	5	Acad Ofc	201	ClsRm	610	25	1	2	20%	2	8%
2	19	Chem-Sci	101	ClsRm	1,184	66	7	314	83%	21	84%
3	19		102	ClsRm	1,162	66	7	332	84%	22	88%
4	19		103	ClsLab	1,308	20	3	59	98%	6	24%
5	19		0104A	ClsRm	582	32	12	105	46%	17	68%
6	19		0104B	ClsRm	594	32	13	129	48%	18	72%
7	19		106	ClsRm	565	30	8	45	30%	15	60%
8	19		108	ClsLab	1,162	44	5	154	90%	12	48%
9	19		211	ClsRm	1,155	55	5	140	72%	14	56%
10	19		215	ClsRm	584	30	9	89	50%	18	72%
11	19		0501N	ClsLab	976	24	2	42	95%	6	24%
12	19		0501S	ClsLab	976	24	2	38	86%	6	24%
13	19		502	ClsLab	1,124	24	2	4	11%	6	24%
14	19		0503N	ClsLab	966	24	2	34	94%	6	24%
15	19		0503S	ClsLab	966	24	2	32	89%	6	24%
16	19		504	ClsLab	1,100	24	2	31	86%	6	24%
17	19		0601N	ClsLab	1,048	28	2	26	87%	8	32%
18	19		0601S	ClsLab	1,048	28	1	7	50%	4	16%
19	19		B005	ClsLab	2,473	24	2	92	87%	12	48%
20	8	Dow	106	ClsLab	1,454	16	3	37	82%	15	60%
21	8		420	ClsLab	1,878	15	5	10	20%	3	12%
22	8		610	ClsLab	890	26	7	129	61%	11	44%
23	8		641	ClsRm	2,923	250	8	1,001	78%	23	92%
24	8		642	ClsRm	1,601	84	7	477	87%	21	84%
25	8		707	ClsLab	1,198	24	1	17	57%	3	12%
26	8		709	ClsLab	744	23	3	12	30%	6	24%
27	8		710	ClsLab	1,287	24	4	40	100%	6	24%
28	8		711	ClsLab	937	16	2	20	63%	6	24%
29	7	EERC	100	ClsRm	1,307	82	6	311	87%	15	60%
30	7		103	ClsRm	2,396	151	6	530	79%	15	60%
31	7		214	ClsRm	983	65	6	206	79%	15	60%
32	7		216	ClsRm	551	36	7	65	42%	14	56%
33	7		218	ClsRm	683	45	6	121	86%	11	44%
34	7		226	ClsRm	683	46	6	96	58%	14	56%
35	7		227	ClsRm	551	36	8	71	59%	14	56%
36	7		229	ClsRm	1,048	65	11	320	71%	19	76%
37	7		313	ClsRm	571	36	5	80	70%	12	48%
38	7		314	ClsRm	553	36	5	33	37%	12	48%
39	7		315	ClsRm	553	36	3	27	42%	7	28%
40	7		316	ClsRm	823	60	8	207	71%	19	76%
41	7		328	ClsLab	1,140	24	6	67	54%	12	48%
42	7		330	ClsLab	1,558	42	4	94	98%	8	32%
43	7		421	ClsLab	844	24	8	87	54%	17	68%
44	7		427	ClsLab	1,000	24	3	13	38%	5	20%
45	7		431	ClsLab	1,430	16	4	62	79%	12	48%
46	7		622	ClsLab	983	16	8	114	93%	16	64%
47	7		722	ClsLab	978	30	4	79	99%	8	32%
48	7		738	ClsLab	1,001	18	4	42	81%	9	36%
49	7		827	ClsLab	983	16	7	87	92%	14	56%
50	15	Fisher	101	ClsRm	937	32	7	117	69%	19	76%
51	15		125	ClsRm	583	35	7	134	72%	18	72%
52	15		126	ClsRm	593	35	8	90	65%	17	68%
53	15		127	ClsRm	693	35	9	88	51%	20	80%

Michigan Technological University
Room Utilization Reports
Spring 2020, Monday-Friday, 10:00 AM - 3:00 PM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	25 Hr Utilization
54	15		129	ClsRm	792	53	9	236	71%	24	96%
55	15		130	ClsRm	712	44	10	177	62%	26	104%
56	15		131	ClsRm	712	44	5	121	76%	15	60%
57	15		132	ClsRm	693	44	9	149	55%	22	88%
58	15		133	ClsRm	693	44	5	89	54%	13	52%
59	15		135	ClsRm	5,036	476	8	1,570	78%	21	84%
60	15		138	ClsRm	1,395	92	5	314	92%	14	56%
61	15		139	ClsRm	2,016	125	7	649	92%	18	72%
62	15		229	ClsLab	702	14	13	294	99%	26	104%
63	15		230	ClsRm	579	35	7	130	68%	16	64%
64	15		231	ClsRm	697	44	9	110	47%	18	72%
65	15		325	ClsRm	1,064	72	7	231	75%	19	76%
66	15		326	ClsRm	1,064	71	5	237	93%	16	64%
67	15		0327B	ClsRm	445	27	6	38	34%	20	80%
68	15		328	ClsRm	928	62	8	333	90%	23	92%
69	15		329	ClsRm	1,065	72	6	312	96%	20	80%
70	15		330	ClsLab	1,065	24	3	39	56%	5	20%
71	15		B003	ClsLab	689	14	1	5	42%	3	12%
72	15		B020	ClsLab	941	27	9	171	83%	18	72%
73	15		B023	ClsLab	960	12	5	49	77%	10	40%
74	100	GLRC	102	ClsLab	1,374	28	1	15	75%	3	12%
75	14	Dillman	101	ClsLab	2,187	60	5	88	59%	13	52%
76	14		110	ClsLab	1,066	16	3	39	87%	6	24%
77	14		202	ClsRm	776	36	6	92	51%	14	56%
78	14		203	ClsLab	863	26	6	69	66%	8	32%
79	14		204	ClsRm	761	43	4	26	43%	6	24%
80	14		208	ClsLab	1,559	64	10	167	84%	12	48%
81	14		211	ClsLab	968	48	5	73	65%	10	40%
82	14		213	ClsLab	573	12	4	20	34%	3	12%
83	14		214	ClsRm	954	60	8	229	73%	18	72%
84	14		302	ClsLab	1,243	32	3	79	96%	6	24%
85	14		320	ClsRm	1,051	43	8	96	48%	17	68%
86	14		B003	ClsLab	988	16	3	51	106%	9	36%
87	14		B008	ClsLab	1,495	15	2	28	93%	6	24%
88	84	Meese	109	ClsRm	680	25	3	29	50%	9	36%
89	84		110	ClsRm	564	25	6	79	64%	15	60%
90	28	Rekhi	112	ClsLab	775	20	1	39	98%	2	8%
91	28		113	ClsLab	777	20	3	102	85%	6	24%
92	28		117	ClsLab	1,153	18	2	72	100%	6	24%
93	28		214	ClsRm	1,328	48	6	163	63%	18	72%
94	28		G005	ClsRm	1,253	54	4	83	85%	11	44%
95	28		G006	ClsRm	1,026	40	3	42	47%	9	36%
96	28		G009	ClsRm	1,280	48	6	118	68%	14	56%
97	12	M&M Bldg	U106	ClsLab	347	5	5	22	44%	3	12%
98	12		U113	ClsRm	1,069	63	7	286	82%	16	64%
99	12		U115	ClsRm	2,540	240	8	699	77%	20	80%
100	12		U205	ClsRm	421	26	6	25	28%	9	36%
101	12		U209	ClsLab	664	7	5	44	88%	10	40%
102	20	MEEM	111	ClsRm	1,429	96	5	341	80%	16	64%
103	20		112	ClsRm	1,652	115	7	533	95%	21	84%
104	20		120	ClsLab	2,630	72	11	257	69%	16	64%
105	20		202	ClsLab	951	16	2	36	92%	4	16%
106	20		302	ClsRm	1,129	48	6	183	75%	15	60%

Michigan Technological University
Room Utilization Reports
Spring 2020, Monday-Friday, 10:00 AM - 3:00 PM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	25 Hr Utilization
107	20		303	ClsRm	1,131	48	7	234	93%	18	72%
108	20		305	ClsLab	1,175	16	8	106	83%	16	64%
109	20		402	ClsRm	1,265	48	6	193	77%	16	64%
110	20		403	ClsRm	1,131	48	4	120	73%	12	48%
111	20		405	ClsRm	607	40	8	141	75%	11	44%
112	20		406	ClsRm	1,130	40	6	177	80%	15	60%
113	20		505	ClsLab	1,588	16	9	127	88%	18	72%
114	20		601	ClsLab	1,980	16	6	51	88%	10	40%
115	20		701	ClsLab	867	16	2	30	100%	4	16%
116	20		1101	ClsLab	1,224	19	3	56	104%	9	36%
117	20		1103	ClsLab	1,092	20	3	59	98%	8	32%
118	20		1106	ClsLab	1,064	24	1	10	42%	3	12%
119	4	ROTC	101	ClsRm	1,273	47	4	26	37%	4	16%
120	4		201	ClsRm	1,705	30	3	35	58%	3	12%
121	10	Rozsa Ctr	120	ClsRm	1,448	60	5	123	95%	15	60%
122	10		208	ClsLab	1,790	50	5	36	53%	15	60%
123	24	SDC	237	ClsRm	789	48	7	70	36%	11	44%
124	24		238	ClsRm	705	40	6	46	39%	9	36%
125	18	Noblet	108	ClsLab	692	24	5	56	56%	12	48%
126	18		139	ClsLab	618	18	7	78	70%	19	76%
127	18		143	ClsRm	616	40	4	82	73%	8	32%
128	18		144	ClsRm	1,689	26	6	136	72%	16	64%
129	18		146	ClsLab	997	24	5	78	81%	15	60%
130	18		157	ClsLab	954	24	1	9	45%	3	12%
131	18		G002	ClsRm	1,768	125	6	334	89%	13	52%
132	18		G029	ClsLab	1,104	32	4	31	39%	9	36%
133	17	Library	242	ClsLab	1,192	25	3	11	28%	5	20%
134	17		243	ClsRm	578	21	1	20	100%	2	8%
135	11	Walker	109	ClsRm	792	36	7	147	79%	21	84%
136	11		0120A	ClsRm	904	30	6	145	100%	18	72%
137	11		134	ClsRm	1,173	40	8	203	85%	23	92%
138	11		138	ClsRm	296	1	5	32	34%	15	60%
139	11		143	ClsRm	647	25	6	82	61%	18	72%
140	11		144	ClsRm	634	25	4	31	34%	12	48%
141	11		202	ClsLab	1,009	28	2	21	81%	7	28%
142	11		204	ClsLab	745	5	2	15	79%	6	24%
143	11		210	ClsLab	1,426	40	3	38	69%	9	36%
144	11		211	ClsLab	731	15	3	36	90%	12	48%
145	11		212	ClsLab	404	15	2	9	41%	6	24%
	Grand Totals:		Rooms: 145		156,626	6,269	767	19,272	75%	1,785	50%

Michigan Technological University
Room Utilization Reports
Spring 2020, Monday-Friday, 3:00 PM - 5:00 PM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	20 Hr Utilization
1	5	Acad Ofc	201	ClsRm	610	25	1	20	91%	2	10%
2	19	Chem-Sci	101	ClsRm	1,184	66	13	64	27%	2	10%
3	19		102	ClsRm	1,162	66	1	9	36%	1	5%
4	19		103	ClsLab	1,308	20	2	39	98%	4	20%
5	19		0104A	ClsRm	582	32	3	34	40%	7	35%
6	19		0104B	ClsRm	594	32	1	9	30%	3	15%
7	19		106	ClsRm	565	30	3	33	66%	5	25%
8	19		211	ClsRm	1,155	55	13	87	34%	4	20%
9	19		215	ClsRm	584	30	1	16	64%	2	10%
10	19		0501N	ClsLab	976	24	2	40	91%	6	30%
11	19		0501S	ClsLab	976	24	2	35	80%	6	30%
12	19		0503N	ClsLab	966	24	2	27	75%	6	30%
13	19		0503S	ClsLab	966	24	2	26	72%	6	30%
14	19		504	ClsLab	1,100	24	2	29	104%	6	30%
15	19		708	ClsLab	1,592	32	1	14	64%	6	30%
16	8	Dow	610	ClsLab	890	26	1	20	100%	3	15%
17	8		641	ClsRm	2,923	250	1	110	63%	2	10%
18	8		642	ClsRm	1,601	84	2	59	79%	3	15%
19	8		710	ClsLab	1,287	24	3	23	64%	6	30%
20	7	EERC	100	ClsRm	1,307	82	1	39	98%	3	15%
21	7		103	ClsRm	2,396	151	3	200	78%	7	35%
22	7		216	ClsRm	551	36	1	5	17%	3	15%
23	7		218	ClsRm	683	45	2	43	61%	5	25%
24	7		226	ClsRm	683	46	3	39	87%	7	35%
25	7		227	ClsRm	551	36	2	18	67%	4	20%
26	7		229	ClsRm	1,048	65	2	108	86%	4	20%
27	7		313	ClsRm	571	36	1	6	38%	2	10%
28	7		314	ClsRm	553	36	2	19	63%	3	15%
29	7		328	ClsLab	1,140	24	1	14	93%	2	10%
30	7		330	ClsLab	1,558	42	4	60	78%	8	40%
31	7		421	ClsLab	844	24	5	28	38%	8	40%
32	7		427	ClsLab	1,000	24	1	11	61%	2	10%
33	7		431	ClsLab	1,430	16	2	34	81%	4	20%
34	7		622	ClsLab	983	16	4	60	97%	8	40%
35	7		722	ClsLab	978	30	3	60	100%	6	30%
36	7		738	ClsLab	1,001	18	3	27	56%	7	35%
37	7		827	ClsLab	983	16	4	56	93%	8	40%
38	15	Fisher	101	ClsRm	937	32	3	42	56%	8	40%
39	15		126	ClsRm	593	35	3	37	67%	6	30%
40	15		127	ClsRm	693	35	2	26	104%	6	30%
41	15		129	ClsRm	792	53	2	46	72%	6	30%
42	15		130	ClsRm	712	44	2	63	80%	6	30%
43	15		131	ClsRm	712	44	3	34	59%	6	30%
44	15		132	ClsRm	693	44	3	50	60%	6	30%
45	15		133	ClsRm	693	44	3	75	83%	9	45%
46	15		138	ClsRm	1,395	92	1	38	63%	3	15%
47	15		139	ClsRm	2,016	125	2	57	63%	4	20%
48	15		229	ClsLab	702	14	3	68	99%	6	30%
49	15		230	ClsRm	579	35	1	4	11%	1	5%
50	15		231	ClsRm	697	44	1	12	60%	3	15%
51	15		325	ClsRm	1,064	72	1	31	65%	3	15%
52	15		326	ClsRm	1,064	71	3	112	78%	9	45%
53	15		0327B	ClsRm	445	27	2	6	13%	6	30%

Michigan Technological University
Room Utilization Reports
Spring 2020, Monday-Friday, 3:00 PM - 5:00 PM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	20 Hr Utilization
54	15		328	ClsRm	928	62	3	89	68%	7	35%
55	15		329	ClsRm	1,065	72	3	83	54%	9	45%
56	15		330	ClsLab	1,065	24	1	6	100%	2	10%
57	15		B003	ClsLab	689	14	1	12	100%	3	15%
58	15		B020	ClsLab	941	27	3	56	81%	6	30%
59	14	Dillman	110	ClsLab	1,066	16	1	14	93%	2	10%
60	14		202	ClsRm	776	36	1	8	80%	2	10%
61	14		203	ClsLab	863	26	1	11	73%	2	10%
62	14		204	ClsRm	761	43	15	37	22%	5	25%
63	14		208	ClsLab	1,559	64	3	80	103%	4	20%
64	14		214	ClsRm	954	60	1	19	79%	1	5%
65	14		302	ClsLab	1,243	32	2	32	64%	4	20%
66	14		320	ClsRm	1,051	43	2	32	65%	2	10%
67	28	Rekhi	117	ClsLab	1,153	18	3	27	51%	9	45%
68	28		214	ClsRm	1,328	48	2	6	8%	5	25%
69	28		G005	ClsRm	1,253	54	2	45	102%	2	10%
70	28		G009	ClsRm	1,280	48	1	18	60%	3	15%
71	12	M&M Bldg	U113	ClsRm	1,069	63	1	30	75%	3	15%
72	12		U115	ClsRm	2,540	240	1	70	93%	3	15%
73	12		U205	ClsRm	421	26	4	2	7%	3	15%
74	20	MEEM	111	ClsRm	1,429	96	2	113	59%	7	35%
75	20		112	ClsRm	1,652	115	3	246	98%	6	30%
76	20		120	ClsLab	2,630	72	3	145	75%	6	30%
77	20		202	ClsLab	951	16	2	25	78%	4	20%
78	20		302	ClsRm	1,129	48	1	20	67%	3	15%
79	20		303	ClsRm	1,131	48	2	54	67%	6	30%
80	20		305	ClsLab	1,175	16	2	22	69%	4	20%
81	20		402	ClsRm	1,265	48	3	72	63%	8	40%
82	20		403	ClsRm	1,131	48	1	39	98%	3	15%
83	20		405	ClsRm	607	40	3	44	69%	3	15%
84	20		406	ClsRm	1,130	40	1	35	97%	2	10%
85	20		505	ClsLab	1,588	16	2	23	72%	4	20%
86	20		601	ClsLab	1,980	16	6	26	87%	6	30%
87	20		701	ClsLab	867	16	1	15	100%	2	10%
88	20		1101	ClsLab	1,224	19	1	19	106%	3	15%
89	20		1106	ClsLab	1,064	24	2	36	75%	6	30%
90	20		1108	ClsLab	1,116	24	3	67	118%	9	45%
91	4	ROTC	100	ClsLab	3,385	30	6	117	39%	4	20%
92	4		201	ClsRm	1,705	30	1	12	24%	2	10%
93	10	Rozsa Ctr	120	ClsRm	1,448	60	2	26	35%	6	30%
94	10		208	ClsLab	1,790	50	4	160	40%	10	50%
95	18	Noblet	143	ClsRm	616	40	1	11	55%	2	10%
96	18		144	ClsRm	1,689	26	1	35	70%	3	15%
97	18		G002	ClsRm	1,768	125	1	72	85%	2	10%
98	11	Walker	0120A	ClsRm	904	30	2	51	102%	6	30%
99	11		134	ClsRm	1,173	40	1	41	117%	3	15%
100	11		143	ClsRm	647	25	1	18	90%	3	15%
101	11		210	ClsLab	1,426	40	1	9	36%	2	10%
102	11		212	ClsLab	404	15	1	7	58%	3	15%
	Grand Totals:		Rooms: 102		114,097	4,675	246	4,459	65%	464	23%

Michigan Technological University
Room Utilization Reports
Spring 2020, Monday-Friday, 5:00 PM - 11:00 PM

#	Building No.	Building	Room	Room Use	Sqft	Seats	Classes	Students	Classroom Utilization	Credit Hrs	25 Hr Utilization
1	5	Acad Ofc	201	ClsRm	610	25	2	58	97%	6	24%
2	19	Chem-Sci	101	ClsRm	1,184	66	1	24	60%	3	12%
3	19		0104A	ClsRm	582	32	1	14	56%	2	8%
4	19		106	ClsRm	565	30	2	5	25%	2	8%
5	19		108	ClsLab	1,162	44	2	19	32%	6	24%
6	19		0501N	ClsLab	976	24	1	22	100%	3	12%
7	19		0503N	ClsLab	966	24	1	14	78%	3	12%
8	19		0503S	ClsLab	966	24	1	14	78%	3	12%
9	19		504	ClsLab	1,100	24	1	11	61%	3	12%
10	8	Dow	641	ClsRm	2,923	250	25	155	30%	5	20%
11	8		642	ClsRm	1,601	84	13	84	32%	4	16%
12	8		710	ClsLab	1,287	24	1	3	19%	1	4%
13	7	EERC	103	ClsRm	2,396	151	1	23	46%	3	12%
14	7		216	ClsRm	551	36	1	17	85%	3	12%
15	7		229	ClsRm	1,048	65	1	1	3%	3	12%
16	7		622	ClsLab	983	16	2	25	81%	4	16%
17	7		722	ClsLab	978	30	2	38	95%	4	16%
18	7		738	ClsLab	1,001	18	1	11	85%	2	8%
19	7		827	ClsLab	983	16	4	60	103%	12	48%
20	15	Fisher	101	ClsRm	937	32	1	8	27%	3	12%
21	15		126	ClsRm	593	35	1	16	64%	2	8%
22	15		139	ClsRm	2,016	125	12	64	28%	1	4%
23	15		325	ClsRm	1,064	72	1	41	63%	3	12%
24	14	Dillman	208	ClsLab	1,559	64	12	24	11%	1	4%
25	28	Rekhi	112	ClsLab	775	20	1	39	98%	2	8%
26	28		113	ClsLab	777	20	1	40	100%	2	8%
27	28		117	ClsLab	1,153	18	1	1	10%	2	8%
28	20	MEEM	120	ClsLab	2,630	72	25	110	21%	5	20%
29	20		302	ClsRm	1,129	48	24	54	12%	3	12%
30	20		405	ClsRm	607	40	1	17	43%	2	8%
31	20		406	ClsRm	1,130	40	1	39	130%	3	12%
32	20		502	ClsLab	928	16	6	37	86%	9	36%
33	20		601	ClsLab	1,980	16	4	16	80%	4	16%
34	20		1101	ClsLab	1,224	19	2	36	100%	6	24%
35	20		1106	ClsLab	1,064	24	1	20	83%	3	12%
36	20		1108	ClsLab	1,116	24	1	21	111%	3	12%
37	4	ROTC	100	ClsLab	3,385	30	1	1	2%	2	8%
38	4		201	ClsRm	1,705	30	2	17	57%	3	12%
39	10	Rozsa Ctr	208	ClsLab	1,790	50	2	18	18%	6	24%
40	18	Noblet	139	ClsLab	618	18	2	24	67%	4	16%
41	11	Walker	109	ClsRm	792	36	1	___	0%	1	4%
42	11		0120A	ClsRm	904	30	1	26	104%	3	12%
43	11		134	ClsRm	1,173	40	1	24	96%	3	12%
Grand Totals:			Rooms: 43		52,911	1,902	168	1,291	38%	148	14%

Michigan Technological University
Assignable Area by College and Department
Fall 2020

College	Department	Assignable Area
Pavlis Honors College	**Pavlis Honors College**	**10,704**
College of Business	**College of Business**	**10,911**
College of Engineering	Biomedical Engineering	14,601
	Chemical Engineering	40,344
	Civil & Environmental Engineering	69,362
	College of Engineering	3,739
	Electrical and Computer Engineering	49,591
	Engineering Fundamentals	3,672
	Geological & Mining Eng & Sciences	20,852
	Manufacturing & Mech Eng Technology	13,923
	Materials Science and Engineering	54,951
	Mechanical Engrg-Engrg Mechanics	110,424
	Total College of Engineering	**381,459**
College of Forest Resources & Envir Sci	Ford Center	65,197
	College of Forest Resources & Environ Sci	60,546
	Total College of Forest Resources & Envir Sci	**125,743**
College of Sciences & Arts	Aerospace Studies (Air Force ROTC)	2,207
	Biological Sciences	44,893
	Chemistry	43,090
	Cognitive & Learning Sciences	9,563
	College of Sciences & Arts	1,049
	Humanities	16,955
	Kinesiology/Integrative Physiology	9,916
	Mathematical Sciences	12,242
	Military Science (Army ROTC)	5,399
	Physics	28,282
	Social Sciences	16,102
	Visual & Performing Arts*	57,034
	Total College of Sciences & Arts	**246,732**
College of Computing	College of Computing	11,948
	Computer Science	15,777
	Total College of Computing	**27,725**
		803,274

*Note: Visual & Performing Arts includes the Rozsa Ctr for Performing Arts.

**Note: Data as of 9/14/2020

Michigan Technological University
Statement of Values 2019–2020

Building Number	Building Name	Address	City	State	Zip	Buildings	Contents	Business Interruption	Total Values
1	Administration Building	1400 Townsend Dr	Houghton	MI	49931	10,558,697	2,812,690		**13,371,387**
2	Electrical Substation	1400 Townsend Dr	Houghton	MI	49931	581,851	1,178,745		**1,760,596**
3	Michigan Tech Lakeshore Center	600 E Lakeshore Dr	Houghton	MI	49931	7,334,565	562,539		**7,897,104**
4	ROTC Building	1400 Townsend Dr	Houghton	MI	49931	7,011,434	24,574		**7,036,007**
5	Academic Offices Building	1400 Townsend Dr	Houghton	MI	49931	3,314,350	658,567		**3,972,917**
6	Annex Building	1400 Townsend Dr	Houghton	MI	49931	1,139,798	64,020		**1,203,819**
7	Electrical Energy Resources Center	1400 Townsend Dr	Houghton	MI	49931	31,469,807	10,898,040		**42,367,847**
8	Dow Environmental Sciences & Engineering Building	1400 Townsend Dr	Houghton	MI	49931	48,937,112	4,500,304		**53,437,416**
9	Alumni House	1400 Townsend Dr	Houghton	MI	49931	872,892	141,544		**1,014,436**
10	Rozsa Performing Arts & Educ	1400 Townsend Dr	Houghton	MI	49931	24,557,853	1,309,227		**25,867,081**
11	Walker - Arts & Humanities	1400 Townsend Dr	Houghton	MI	49931	12,412,141	721,084		**13,133,224**
12	Minerals & Materials Engr Bldg	1400 Townsend Dr	Houghton	MI	49931	48,227,674	9,619,691		**57,847,365**
13	Center for Diversity and Inclusion	1400 Townsend Dr	Houghton	MI	49931	701,984	122,202		**824,186**
14	Grover C. Dillman Hall	1400 Townsend Dr	Houghton	MI	49931	12,621,105	3,147,468		**15,768,573**
15	Fisher Hall	1400 Townsend Dr	Houghton	MI	49931	17,902,577	2,812,690		**20,715,267**
16	Public Safety & Police Services Building	206 MacInnes Dr	Houghton	MI	49931	79,918	45,004		**124,921**
17	J. R. Van Pelt and John and Ruanne Opie Library	1400 Townsend Dr	Houghton	MI	49931	23,290,584	36,659,404		**59,949,988**
18	U. J. Noblet Forestry Building	1400 Townsend Dr	Houghton	MI	49931	13,385,196	654,613		**14,039,809**
18	U. J. Noblet Forestry Building	1400 Townsend Dr	Houghton	MI	49931	7,310,793	2,351,109		**9,661,902**
19	Chemical Sciences & Engineering Building	1400 Townsend Dr	Houghton	MI	49931	30,783,544	4,500,304		**35,283,848**
20	R. L. Smith (MEEM) Building	1400 Townsend Dr	Houghton	MI	49931	28,918,576	6,750,455		**35,669,031**
24	Student Development Complex	600 Macinnes Dr	Houghton	MI	49931	42,750,614	4,472,527		**47,223,141**
25	Kearly Stadium Press Box	1502 E Sharon Ave	Houghton	MI	49931	1,000,000	60,000		**1,060,000**
28	Kanwal and Ann Rekhi Hall	1400 Townsend Dr	Houghton	MI	49931	16,470,078	3,364,005		**19,834,084**
30	Little Huskies Child Care	500 MacInnes Dr	Houghton	MI	49931	818,316	58,067		**876,382**
31	Douglass Houghton Hall	1700 Townsend Dr	Houghton	MI	49931	15,072,906	204,367		**15,277,273**
32	Daniell Heights Apartments	2005 Woodmar Dr	Houghton	MI	49931	24,519,331	196,544		**24,715,875**
33	Daniell Heights Maintenance	2005 Woodmar Dr	Houghton	MI	49931	72,080	10,372		**82,452**
34	Memorial Union Building	1400 Townsend Dr	Houghton	MI	49931	13,957,933	1,125,075		**15,083,008**
36	21725 Woodland Rd House	21725 Woodland Rd	Houghton	MI	49931	43,266	5,625		**48,891**
37	Wadsworth Hall	1703 Townsend Dr	Houghton	MI	49931	50,511,120	1,768,743		**52,279,863**
38	West McNair Hall	1801 Townsend Dr	Houghton	MI	49931	6,174,726	29,540		**6,204,265**

Building Number	Building Name	Address	City	State	Zip	Buildings	Contents	Business Interruption	Total Values
39	McNair Hall Food Services	1801 Townsend Dr	Houghton	MI	49931	1,947,611	889,813		**2,837,424**
40	East McNair Hall	1801 Townsend Dr	Houghton	MI	49931	9,202,956	281,269		**9,484,224**
41	Central Energy Plant	1400 Townsend Dr	Houghton	MI	49931	15,925,727	63,098		**15,988,825**
42	Facilities Management Storage	1400 Townsend Dr	Houghton	MI	49931	2,596,608	337,522		**2,934,130**
44	Facilities Building	1400 Townsend Dr	Houghton	MI	49931	2,543,514	2,250,152		**4,793,666**
45	Kettle-Gundlach House	21680 Woodland	Houghton	MI	49931	468,451	22,617		**491,069**
46	Tech Trails Waxing Center	1400 Townsend Dr	Houghton	MI	49931	112,839			**112,839**
47	217 East Street House (Vivian)	217 East St	Houghton	MI	49931	106,000			**106,000**
48	Hillside Place	1801 Woodland Rd	Houghton	MI	49931	16,379,356	1,678,941		**18,058,297**
49	Property Storage	1400 Townsend Dr	Houghton	MI	49931	173,817	11,251		**185,068**
50	Gates Tennis Center	1400 Townsend Dr	Houghton	MI	49931	3,254,227	18,509		**3,272,737**
51	207 East Street House (O'Connor)	207 East St	Houghton	MI	49931	94,416			**94,416**
52	PLGC Clubhouse	46789 US Hwy 41	Houghton	MI	49931	668,575	84,381		**752,956**
53	Mont Ripley Ski Hill	49051 Ski Hill Lane	Houghton	MI	49931	28,210	112,508		**140,718**
54	Mont Ripley Ski Chalet	49051 Ski Hill Lane	Houghton	MI	49931	655,791	112,508		**768,298**
55	Mont Ripley Storage	49051 Ski Hill Lane	Houghton	MI	49931	83,910	163,201		**247,111**
56	Daniell Heights Storage 56	1400 Townsend Dr	Houghton	MI	49931	22,361	0		**22,361**
57	209 East Street House (Hagen)	209 East St	Houghton	MI	49931	98,145			**98,145**
58	PLGC Maintenance -1	46789 US Hwy 41	Houghton	MI	49931	30,488	197,370		**227,858**
59	PLGC Maintenance - 2	46789 US Hwy 41	Houghton	MI	49931	14,424	50,627		**65,051**
60	PLGC Cart Storage - A	46789 US Hwy 41	Houghton	MI	49931	58,975			**58,975**
61	PLGC Cart Storage - B	46789 US Hwy 41	Houghton	MI	49931	39,719			**39,719**
63	PLGC Maintenance - 3	46789 US Hwy 41	Houghton	MI	49931	70,564	107,446		**178,009**
65	Daniell Heights Storage 65	1400 Townsend Dr	Houghton	MI	49931	23,696	22,502		**46,198**
69	KRC Engineering Design Center	23337 Airpark Blvd	Houghton	MI	49931	2,143,951	112,508		**2,256,459**
70	KRC Scientific & Admin Offices	23620 Airpark Blvd	Calumet	MI	49913	221,517	3,375,227		**3,596,744**
71	KRC Machine & Vehicle Shops	23620 Airpark Blvd	Calumet	MI	49913	81,625	362,299		**443,924**
72	KRC Vehicle Service Bldg T3	23620 Airpark Blvd	Calumet	MI	49913	114,278	1,687,613		**1,801,891**
73	KRC Vehicle Storage Bldg T4	23620 Airpark Blvd	Calumet	MI	49913	49,733	337,522		**387,255**
74	KRC Engineering Laboratories	23620 Airpark Blvd	Calumet	MI	49913	106,910	777,829		**884,738**
75	KRC Special Projects Facility	23620 Airpark Blvd	Calumet	MI	49913	61,538	40,920		**102,458**
76	KRC Support Services Facility	23620 Airpark Blvd	Calumet	MI	49913	20,341	8,047		**28,388**
77	KRC Water Truck Storage	23620 Airpark Blvd	Calumet	MI	49913	169,471			**169,471**

Building Number	Building Name	Address	City	State	Zip	Buildings	Contents	Business Interruption	Total Values
78	KRC Eng Support Facil Bendix	23620 Airpark Blvd	Calumet	MI	49913	141,811	253,142		**394,953**
79	KRC Chrysler Support Fac II	23620 Airpark Blvd	Calumet	MI	49913	282,452	11,612		**294,064**
80	KRC Cold Storage Building	23620 Airpark Blvd	Calumet	MI	49913	282,452	168,762		**451,214**
81	Power Generation Building	1400 Townsend Dr	Houghton	MI	49931	1,396,443	2,357,492		**3,753,934**
82	21610 Woodland Rd House	21610 Woodland Rd	Houghton	MI	49931	401,478			**401,478**
84	Harold Meese Center	1304 E Houghton Ave	Houghton	MI	49931	1,996,942	281,269		**2,278,211**
86	MTU Tower Building		Houghton	MI	49931	16,653			**16,653**
88	DPSPS/EMS Building	1400 Townsend Dr	Houghton	MI	49931	70,487	22,502		**92,988**
89	Tech Trails Maintenance	1400 Townsend Dr	Houghton	MI	49931	62,116	112,508		**174,624**
90	Sands Pilot Plant	6000 Carlos St	Houghton	MI	49931	995,490	22,502		**1,017,992**
92	Advanced Energy Research Building	1051 Ethel Ave	Houghton	MI	49931	313,779	900,062		**1,213,841**
93	Fish Hatchery Building	Fish Hatchery Rd	Houghton	MI	49931	15,249			**15,249**
94	AMJOCH Observatory	47976 N Huron St	Houghton	MI	49931	39,938	22,502		**62,440**
95	Advanced Technology Development Complex	1402 Sharon Ave	Houghton	MI	49931	6,733,545	4,527,338		**11,260,883**
96	SDC Annex Building	1400 Townsend Dr	Houghton	MI	49931	197,831			**197,831**
98	Settling Basin	1400 Townsend Dr	Houghton	MI	49931	222,445			**222,445**
98	Mont Ripley Chair Lift	1400 Townsend Dr	Houghton	MI	49931	524,169			**524,169**
100	Great Lakes Research Center	100 Phoenix Drive	Houghton	MI	49931	28,590,133	1,659,404		**30,249,537**
102	Advanced Power Systems Research Center	7 Industrial Drive	Calumet	MI	49913	6,334,539	1,106,269		**7,440,808**
103	A. E. Seaman Mineral Museum	1404 Sharon Ave	Houghton	MI	49931	1,692,592	107,384		**1,799,976**
107	212 East Street House (Lockhard)	212 East St	Houghton	MI	49931	113,000			**113,000**
110	214 East Street House (Larson)	214 East St	Houghton	MI	49931	124,209			**124,209**
111	46645 US-41 House	46645 US-41	Houghton	MI	49931	308,466	27,549		**336,014**
112	Facilities Storage	1223 Garnet Street	Houghton	MI	49931	315,835	110,194		**426,029**
113	Salt Storage Building	113 Cemetary Rd	Houghton	MI	49931	334,945			**334,945**
200	FCF Dining Hall	21235 Alberta Ave	L'Anse	MI	49946	312,867	80,812		**393,679**
200	FCF Office Annex	21235 Alberta Ave	L'Anse	MI	49946	170,139	67,610		**237,749**
200	FCF General Purpose Mtce	21235 Alberta Ave	L'Anse	MI	49946	589,730	281,269		**870,999**
200	FCF Greenhouse	21235 Alberta Ave	L'Anse	MI	49946	9,320			**9,320**
200	FCF Reception Bldg	21235 Alberta Ave	L'Anse	MI	49946	54,060	5,984		**60,044**
200	FCF Tool Shed	21235 Alberta Ave	L'Anse	MI	49946	2,663			**2,663**
201	FCF Hemlock Residence	21226 Alberta Ave	L'Anse	MI	49946	40,423			**40,423**

Building Number	Building Name	Address	City	State	Zip	Buildings	Contents	Business Interruption	Total Values
202	FCF Sassafrass Residence	21235 Model T Lane	L'Anse	MI	49946	50,750			**50,750**
203	FCF Elm Residence	21229 Husky Dr	L'Anse	MI	49946	57,465			**57,465**
204	FCF Birdseye Residence	21251 Model T Lane	L'Anse	MI	49946	67,397			**67,397**
205	FCF Spruce Residence	21235 Husky Dr	L'Anse	MI	49946	62,324			**62,324**
206	FCF Tamarack Residence	21271 Model T Lane	L'Anse	MI	49946	75,836			**75,836**
207	FCF Birch Residence	21345 Husky Dr	L'Anse	MI	49946	59,340			**59,340**
208	FCF Basswood Residence	21238 Model T Lane	L'Anse	MI	49946	64,584			**64,584**
209	FCF Cedar Residence	21361 Husky Dr	L'Anse	MI	49946	62,665			**62,665**
210	FCF Beech Residence	21307 Model T Lane	L'Anse	MI	49946	54,098			**54,098**
211	FCF Ash Residence	21353 Husky Dr	L'Anse	MI	49946	56,015			**56,015**
212	FCF Balsam Residence	21365 Husky Dr	L'Anse	MI	49946	39,760			**39,760**
213	FCF Pump House	21293 Alberta Ave	L'Anse	MI	49946	66,952	8,089		**75,040**
214	FCF Sawmill	21277 Alberta Ave	L'Anse	MI	49946	420,476	68,400		**488,876**
215	FCF 8-Car Garage		L'Anse	MI	49946	108,247	17,610		**125,858**
216	FCF Dorm 2	21281 Husky Dr	L'Anse	MI	49946	234,413	60,548		**294,961**
217	FCF Classroom 1	21307 Husky Dr	L'Anse	MI	49946	234,413			**234,413**
220	FCF Recreation Building	21294 Husky Dr	L'Anse	MI	49946	71,958	18,585		**90,543**
221	FCF Computer Lab	21302 Husky Dr	L'Anse	MI	49946	108,701	28,076		**136,777**
222	FCF Classroom 3	21310 Husky Dr	L'Anse	MI	49946	108,701			**108,701**
223	FCF Dorm	21358 Liberator Ave	L'Anse	MI	49946	1,063,372	246,890		**1,310,262**
225	FCF Storage 3	21219 Alberta Ave	L'Anse	MI	49946	72,271	24,891		**97,161**
226	FCF Storage 2		L'Anse	MI	49946	1,996			**1,996**
227	FCF Storage Building I		L'Anse	MI	49946	71,958	14,869		**86,827**
229	FCF Lumber Storage	21208 Alberta Ave	L'Anse	MI	49946	157,676	46,547		**204,223**
230	FCF 9-Car Garage	21208 Glider Lane	L'Anse	MI	49946	252,035	42,000		**294,034**
231	FCF Maintenance	21245 Glider Lane	L'Anse	MI	49946	153,299	31,679		**184,977**
233	FCF Main Office	21235 Alberta Ave	L'Anse	MI	49946	302,470	91,705		**394,175**
235	FCF Well House	21313 Liberator Lane	L'Anse	MI	49946	15,017			**15,017**
236	FCF Reservoir		L'Anse	MI	49946	20,022			20,022
906	Michigan Tech Research Institute	3600 Green Court, Suite 100	Ann Arbor	MI	48105		1,704,490		1,704,490
-	Central Heating Plant Fuel Tanks	1400 Townsend Dr	Houghton	MI	49931	1,197,857			1,197,857
-	Copper Country Mall Print Shop Location	47420 M-26	Houghton	MI	49931		2,000,000		2,000,000
-	Business Interruption							110,803,000	110,803,000
TOTALS						**618,370,827**	**130,465,360**	**110,803,000**	**859,639,187**