

Education for the 21st Century

Presentation to University Senate
November 10, 2022

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Michigan
Technological
University



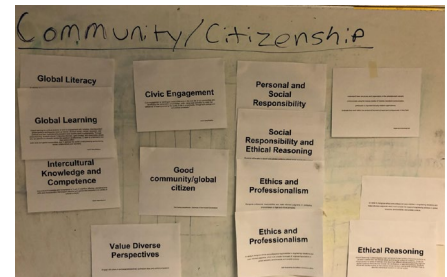


21st Century Task Force Charge - to advance Michigan Tech's core educational goals by developing transformative content and approaches that clearly address the needs of the 21st century workforce and incorporate key areas for student development

Key Accomplishments to Date



<p>Spring - Summer 2019</p>	<p>21st Century Education Task Force Design Sessions</p>	<ul style="list-style-type: none"> • Friday PM Design Sessions • Identified key areas of focus using design process • Developed proposal & budget for IDEAhub • Formed working groups
<p>Fall 2019</p>	<p>Discovery & Define</p>	<ul style="list-style-type: none"> • Hosted IDEAhub Kick-off Meeting • Conducted 100's of interviews • Researched MTU history & benchmark programs • Stakeholder Mapping • Training & Workshops
<p>Spring - Summer 2020</p>	<p>Ideation & Concept Development</p>	<ul style="list-style-type: none"> • Campus IDEation & Learning Goal sessions • Training & Workshops • Call for IDEAs Proposals • COVID-19 Pivot - Faculty Learning Sessions
<p>Spring 2021</p>	<p>Prototype Development</p>	<ul style="list-style-type: none"> • Developed frameworks for Essential Ed & First-year Experience • Prototype development of frameworks and concepts
<p>Fall 2021</p>	<p>Prototype/Pilot Testing</p>	<ul style="list-style-type: none"> • Iterative prototype development • Sharing (testing) prototypes with stakeholder groups • Senate Proposal for Pilot Testing new GenEd concepts • Pilot Testing of Refined Frameworks and Concepts



thank you!!

Participants

IDEAhub leadership team:

Mary Raber
Marika Seigel
Brett Hamlin
Lorelle Meadows
Alexandria Guth
Heather Simpson
Nancy Barr
Kelly Steelman
Mark Rouleau
Stefka Hristova
Darnishia Slade
Kari Henquinet
Lisa Casper
Sarah Tan

Essential Ed
Implementation
Committee:

Marika Seigel
Laura Fiss
Mary Raber
Brett Hamlin
Stefka Hristova
Mark Rouleau
Kelly Steelman
Scott Marratto
Donald Lafreniere
David Hemmer
Jared Anderson
Travis Wakeham

Guy Hembroff (CC)
Amlan Mukherjee (CEE)
Bill Endres (MEEM)
Bre Tucker (PHC/Enterprise)
Vienna Chapin (PHC/Study Abroad)
Carl Blair (SS)
Carlos Amador (HU)
Sarah Kuhl (Wahtera Center)
Alexandra Morrison (HU)
Chuck Wallace (CC)
Mari Buche (SBE)
Jared Anderson (VPA)
Maria Bergstrom (HU)
Amber Kemppainen (EF)
Karla Kitalong (HU)
Matt Seigel (HU)
Steve Walton (SS)
Jean Declerck (CTL)
Oren Abeles (HU)
John Irwin (MMET)
Chelsea Schelly (SS)
Kay Oliver (Computing)
Erika Vye (GLRC)
Stephanie Carpenter (HU)
David Olson (Math)
Mike Meyer (CTL)

Andrew Barnard (GLRC)
Thom Freeman (CTL)
Jon Leinonen (SBE)
Glen Archer (ECE)
Anne Beffel (VPA)
Jim Declerck (MEEM)
Dave Watkins (CEE)
Richelle Winkler (SS)
Danise Jarvey (COE)
Val Gagnon (GLRC)
Casey Huckins (Biology)
Jessie Stapleton (Student Activities)
Andrew Fiss (HU)
Abraham Romney (HU)
Smitha Rao (COE)
Paul Sanders (MSE)
Sue Collins (HU)
Briana Bettin (Computing)
Chris Honholt (Career Svcs)
Craig Pelizzaro (KIP)
Laura Brown (Computing)
Katrina Black (Physics)
Mark Rhodes (SS)
Samantha Smith (CLS)
Robert Handler (COE)

Theresa Jacques (Registrar)
Joshua Chase (HU)
Chris Middlebrook (ECE)
Whitney Boroski (Wellness)
Laura Brown (CS)
Leonard Bohman (COE)
Susie Amato-Henderson (CLS)
Adrienne Minerick (Computing)
Blair Orr (SFRES)
Tarun Dam (Chem)
Alexandra Marshall (Res Life)
Mary Muncil Jennings (VPA)
Amy Howard (CDI)
Leo Ureel (Computing)
Rick Berkey (PHC/Enterprise)
Jon Sticklen (EF/CLS)
Jeff Wall (COB)
Denise Landsberg (Computing)
Libby Meyer (VPA)
Dayna Browning (Counseling Services)



Goals for Gen Ed Revision → Essential Ed



- Provide increased coherence and opportunities for connection both within the curriculum and between Essential Ed & major courses
- Provide increased flexibility so that students can pursue varied interests and experiences that fulfil the goals of Essential Ed (e.g. study abroad/away, minors, certificates)
- Student-centered experiential and reflective learning to foster development of 21st Century competencies
- Implement holistic assessment practices that are meaningful to faculty and students (e.g. portfolios) and a learning goal framework that is flexible and adaptable
- Identify and address procedures, policies and logistics in order to foster ongoing innovation

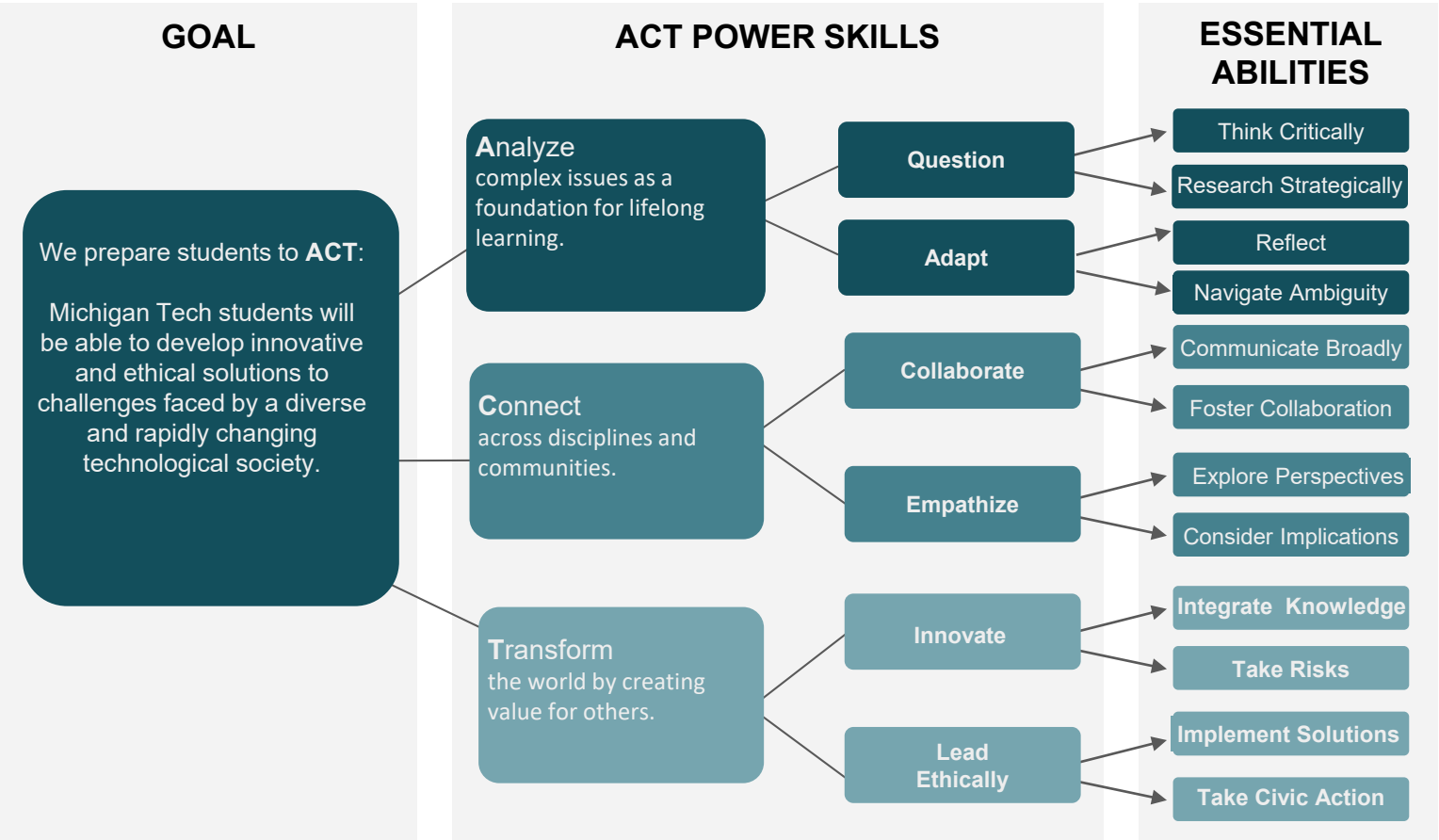
Current Undergraduate Learning Goals & Issues

= 41 rubric dimensions

01	Disciplinary Knowledge	Students demonstrate a depth of knowledge in one area/discipline, as well as a breadth of knowledge that (1) enables adaptability and flexibility as knowledge grows and changes, and (2) recognizes linkages/complementarity to other areas/disciplines.	
02	Knowledge of the Physical and Natural World	Students demonstrate knowledge of the physical and natural world. This is accomplished by studying mathematics and the physical and natural sciences.	6
03	Global Literacy	Globally literate students analyze issues on multiple scales from diverse perspectives while acknowledging interconnectivity and complexity.	5
04	Critical & Creative Thinking	Students are able to think critically and creatively, as demonstrated by their broad, adaptable and versatile use of reasoning, logic, and evidence to access and evaluate information and solve complex problems.	9
05	Communication	Students are able to communicate effectively orally, in writing, and in new media to a wide variety of audiences.	11
06	Information Literacy	Students are able to analyze the need for, strategically access, critically evaluate, and use information effectively, ethically, and legally.	6
07	Technology	Students demonstrate knowledge of technology and its implications in society and are able to design and/or use technology for creative activities or innovative solutions to problems.	
08	Social Responsibility and Ethical Reasoning	Students are able to identify and address conflicting ethical values and develop a sense of responsibility for the broad impacts of individual actions, social institutions and public policy.	4

Proposed Undergraduate Student Learning Goals:

= 12 rubric dimensions



Current General Education Program

42 credits (includes 3 units of co-curricular)

CORE

Composition (3)	Critical & Creative Thinking list (3)
Global Issues (3)	Social Responsibility & Ethical Reasoning list (3)

HASS

Communication & Composition (3)	Humanities/Fine Arts (3)
Social/Behavioral Science (3) elective (3)	HASS

STEM

Mathematics list (4)	Science list - 2 different disciplines, one with lab (7) STEM elective (4)	STEM Gen Ed requirements (15 credits) can double count toward major requirements
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Co-Curricular

3 semester units of co-curriculars required

- Units are not included in GPA calculation nor do they count toward overall credits required for degree.
- Includes PE courses, Army/Air Force ROTC, band, and music lessons.

1st Year

2nd Year

3rd

Prototype Essential Education Model draft Spring 2021

Integrated Signature Experience

Signature project experience (undergrad research, enterprise, global/community engagement, leadership, EML...)

Exploration/Breadth Courses (includes co-curriculars)

Experiential + Reflective learning, co-ops, co-curriculars, study away...

Themed Pathway
(Health & Wellness, H-STEM)

Themed Pathway
(Sustainability)

Themed Pathway
(Digital World)

Themed Pathway
(TBD)

Themed
Pathway

Themed
Pathway

Themed-based pathways through general education (Humanities, Social Sciences, VPA, Core STEM)

Aligned with TF Initiatives

Certificate & Badging options

Competency development focused

Portfolio-based Assessment

HIP Learning opportunities

First-Year Core Experience

Interdisciplinary team-based design project, exploring majors, EML, health & wellness, ethics, DEI, cultural awareness, composition

Proposed Essential Education Program *36 credits (includes 3 credits of cocurricular)*

	1st Year	2nd Year	3rd Year	4th Year
ANALYZE	TRANSFORMATIVE TEXTS - COMPOSITION (3) Communication, critical thinking, information literacy, empathy - modeled on Purdue's <i>College Preparatory Composition</i>			draft 11 -4-21
	Math (3) Science + Lab (3)			
	ANALYZE Seminar I (1) Intro to reflection, success strategies, pathway & disciplinary explorations, portfolio	Tags: Diversity, Equity, Inclusion; Writing/Communication; Quantitative/Computational		
	Explore (18) HASS (6 HUFA, 6 SBS) STEM (3) Elective (3) OR pre-approved Essential Ed minors/pathway certificates			
CONNECT		CONNECT Seminar II (1) Reflection, career strategies, connections, signature explorations, portfolio		
TRANSFORM		SIGNATURE EXPERIENCE (3) Application of skills/knowledge to a real-world experience (global/community, UGR, co-op, study away, Enterprise, etc., including reflective component)		
			TRANSFORM Seminar III (1) Reflection, Life Design, Creating Value, portfolio	
CO-CURR	foster connection, networking, and social interactions	Connect * Apply * Restore * Extend (3) application of skills and creativity		wellness and self-care
				leadership, honing of skills



Coverage of Essential Abilities in Core Courses

Essential Ed Core	Think Critically	Research Strategically	Reflect	Navigate Ambiguity	Communicate Broadly	Foster Collaboration	Explore Perspectives	Consider Implications	Integrate Knowledge	Take Risks	Implement Solutions	Take Civic Action
Composition or Transformative Texts	✓	✓	✓	✓	✓		✓					
Analyze	✓	✓	✓	✓								
Connect					✓	✓	✓	✓				
Transform									✓	✓	✓	✓
Signature Experience						✓		✓	✓	✓	✓	✓

Stages of Implementation - Essential Ed

- STAGE 1: Spring 2022 - Senate proposals: Essential Ed framework & learning goal framework, undergraduate certificates. Resources needed will be part of the proposal.
- STAGE 2: Fall 2022 - Pilot sections of Transformative Texts, Signature Experience, ACT seminars, develop pathway certificates
- STAGE 3: Fall 2023 - New Essential Ed Framework in place. Implement Signature Experience & year 1 ACT seminar. Scale up Transformative Text pilot, launch 2 - 3 pathway certificates.

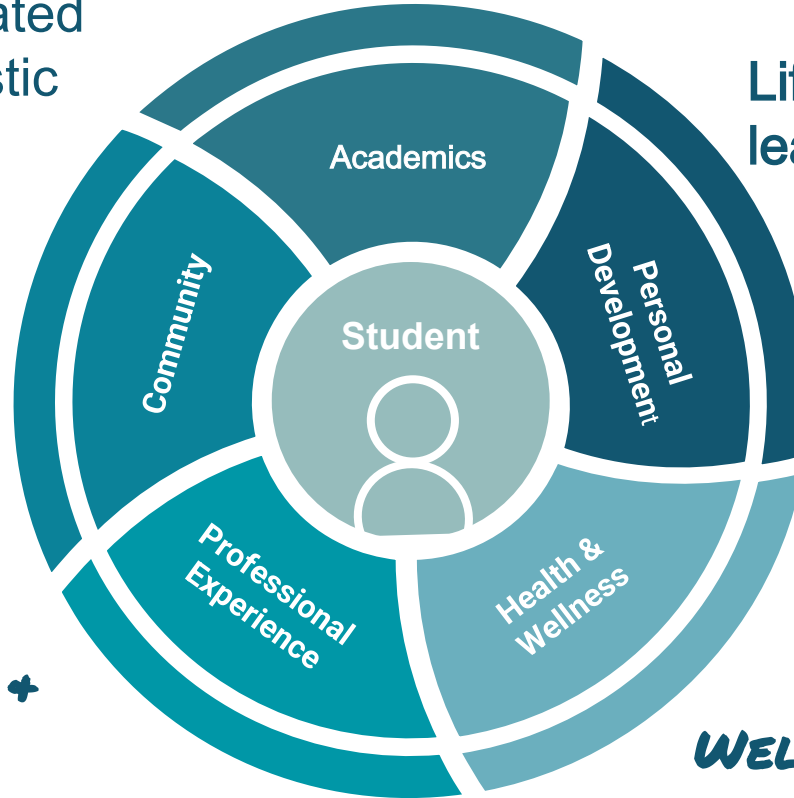
Project Connect

an Academy of dedicated people Fostering holistic student success

Competency- Based

SENSE OF BELONGING

RESILIENCE + GROWTH MINDSET



Life - long learning

Reflection

WELL-BEING

First-Year Experience

- connect to self, community, and learning

Community & Self

- Extended Orientation Programming
- Career & Life Design
- Self-Authorship

Coordinated Support System

- Advising
- Peer Mentoring
- Learning Support
- Wellness

Core Courses

- Transformative Text core
- ACT Seminar I (Analyze)
- Possibly themed across courses examining topics from different disciplinary perspectives
- Competency based assessment (rather than grades)
- Reflection, critical thinking
- Reduced LMS noise

Math / Science / Engineering / Computing Courses

- Integrated coursework around common themes
- Learning modules
- Half-semester courses

First-year Experiences

- Community/Global Engagement Experiences
- Mini-semester enhancement courses (J-terms, May-mesters)
- Learning Bootcamps

Overt connections for covert learning

Project Connect - First Year Experience



Pilot Initiatives...

- Mobile Learning Centers - Pilots active and highly successful w/ Chem, Math, Eng, HU
- Modular Badging and Credentialing - active discussion, engagement for CoB.
- Wellness - Under development with EF/Chem and Student Wellness
- Noise Reduction in LMS - Collecting data from J-CTL, identifying co-conspirators
- Summer Reading Integration - active discussion and text review underway
- Husky points - In pilot phase, needs broader engagement
- Pop-up advising - Pilot actively running
- Coordinated Advising - Building discussion groups
- Extended Orientation - pilot actively running, need funding for a fall 2022
- Cohort Reprogramming - URGENT, need updated application to alleviate scheduling conflicts and reduce workload on registrar's office
- First Year Academy - Developing prototype and definitions of success
- Leveraged Student / Office Hours - pilot underway, moderately successful, needs review
- Math Integration - Key players identified, initiating discussion
- J-May Terms - How might we better utilize our calendar to support different learning options for students
- Gradeless First Year - How might we better support student outcomes for those who get a "rough" start.

Questions?

Share your Feedback & Get Involved!

- [Essential Ed Feedback](#)
- [First Year Experience Engagement](#)

For more info on the 21st Century Education Tech Forward Initiative, contact:

Mary Raber, mraber@mtu.edu

Marika Seigel, maseigel@mtu.edu

Brett Hamlin, bhhamlin@mtu.edu

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