



Meeting Name:	Moorhead Advisory Committee Meeting	Date:	September 15, 2026
Facilitator:	James Anderson, Tim Preuss	Time:	6:30 – 8:30 PM
Recorder:	Tim Preuss/Zoom	Location:	<u>In Person and Zoom Meeting</u>
Members	James Anderson, Tony Anderson, Bruce Curtis, Greg Depee, Bob Henderson, Jon Tweeton, Jack Wenglewick, Pann Ajjimaporn, and Jason Peterson		
Purpose Statement	Industry provides input and recommendations for IT program updates and future direction		

No.	Topic	Highlights
1.	Welcome Members	James and Tim welcomed all members
2.	AI Certificate and Programming Program Updates Jason Peterson provided an update on the newly launched AI certificate program and recent programming curriculum changes	Details - Jason Peterson: The Survey of Artificial Intelligence launched this semester with approximately 18 students from diverse backgrounds. The rapidly evolving nature of AI makes curriculum maintenance challenging, as even textbooks carry future publication dates. - Jason Peterson: The program focuses on overarching principles — ethics, productivity with AI agents, and critical evaluation of AI outputs — rather than specific tools. - Jason Peterson: Next semester will introduce two additional AI courses: Business Use of AI (co-developed with the business department) and Programmatic AI. The business department has also accepted the AI course as an elective. - Jason Peterson: A new Comparative Languages course is being offered, exposing students to multiple programming paradigms (functional, object-oriented, imperative) to build adaptability rather than language-specific expertise.

		○ Jason Peterson: Software Engineering will be introduced next semester, focusing on DevOps environments and the full development lifecycle. ○ Bob Henderson: Expressed concern that newer hires treat AI output as infallible. Emphasized the importance of a "trust and validate" model and the need to reinforce human-in-the-loop thinking, especially in agentic workflows. ○ Jason Peterson: Confirmed that the current programming courses directly address AI validation — students are taught why programmers are still needed and how to verify AI-generated code. ○ Bob Henderson: Asked whether algorithmic and critical thinking are being integrated into programming courses. ○ Jason Peterson: Confirmed that CPTR 1040 (Introduction to Programming) begins with algorithms and pseudocode, with no actual code written initially, to build foundational thinking before language instruction. This approach was introduced to address a historically high 50% drop rate. ○ Jason Peterson: Primary languages taught include Python (introductory), C++ (Comp Sci 1, with potential migration to Rust per NSA recommendations), Java, and a rotating set in the Comparative Languages course including Scheme/Lisp and potentially RPG. ● Conclusion ○ The AI certificate and programming curriculum updates are progressing well and are well-received. ○ The focus on critical thinking, pseudocode-first instruction, and multi-language exposure is aligned with industry expectations. ○ AI validation and human oversight should be reinforced as core competencies throughout all relevant courses.
4.	Proposed Computer Science AS (Transfer) Degree Tim Preuss introduced a proposal to create a Computer Science AS degree designed as a transfer pathway to four-year institutions.	● Details ○ Tim Preuss: Students in the current Computer Programming AAS who wish to transfer to MSUM's Computer Science program face a minimum 4.5-year completion timeline due to missing prerequisites, particularly discrete mathematics. ○ Tim Preuss: An AS degree (transfer-focused) would allow students to complete two years at M-State and approximately two years at a four-year institution, aligning with the traditional 2+2 model. ○ Tim Preuss: The proposed AS would largely reuse existing courses, with discrete mathematics as the primary new addition. ○ Tim Preuss: If structured (discrete math) as a Minnesota Transfer Curriculum (MnTC) pathway, the degree would be automatically

		accepted by all Minnesota State Colleges and Universities, eliminating the need for individual articulation agreements. ○ Jack Wenglewick: Shared a personal experience of transferring from MSUM to M-State due to MSUM's lack of foundational instruction, affirming the value of M-State's approach. ○ Bob Henderson: Noted that Minnesota's direct admission program for high school seniors could increase visibility and enrollment for such a pathway. ○ Jack Wenglewick: Suggested leveraging high school PSEO opportunities to allow students to complete discrete math while still in high school. ○ Tim Preuss: Confirmed that the math department is willing and able to develop and teach discrete mathematics, and that it would count as a general education credit rather than a technical credit. ○ Advisory members: Broadly supportive of the proposal, noting that more transfer pathways attract more students and benefit regional talent retention. ● Conclusion ○ The Computer Science AS transfer degree is supported by the advisory committee. ○ Discrete mathematics is the critical new course needed and will be developed through the math department.
5.	Networking Curriculum Restructuring (Cisco 1 and Cisco 2) A significant discussion took place regarding whether to retain, replace, or restructure the two Cisco networking courses in the Cybersecurity AAS and certificate programs.	● Details ○ Tim Preuss: Raised concerns about the Cisco curriculum's vendor-specificity and the fact that M-State does not offer all three courses required for the CCNA certification, potentially setting students up for failure. ○ Tim Preuss: Proposed replacing Cisco 2 with the Survey of Artificial Intelligence, given the growing importance of AI in cybersecurity roles. ○ Bob Henderson: Cautioned against removing networking content entirely, noting that cybersecurity hires without networking fundamentals struggle to understand the impact of security decisions (e.g., blocking port 53 disabling DNS). ○ Bob Henderson: Argued that networking knowledge remains essential even in zero-trust environments, as identity-based access still relies on underlying network infrastructure. ○ Advisory members (general): Debated the pace of zero-trust adoption and whether traditional network knowledge will remain relevant, with consensus that it will remain critical for the foreseeable future, especially for small-to-medium businesses and MSPs.

		○ Bob Henderson: Proposed that Cisco 1 content (basic networking fundamentals) be merged into the existing Informatics course, which all students take, ensuring universal baseline networking knowledge. ○ Bob Henderson: Proposed replacing Cisco 2 with a new vendor-neutral Networking Fundamentals course covering VLANs, subnetting, routing, basic firewall concepts, and layer 1–3 principles — without vendor-specific content like EtherChannel. ○ Bob Henderson: Suggested this restructuring would then free up a slot for the Survey of Artificial Intelligence to replace Cisco 2. ○ Tim Preuss: Agreed with the logic and noted that Informatics is flexible enough to absorb additional networking content, including basic encryption, ping, traceroute, and IP configuration. ○ Advisory members: Noted that CompTIA certifications (A+, etc.) are increasingly less relevant as standalone credentials and should not drive curriculum design. ○ Bob Henderson: Suggested that a vendor-neutral networking fundamentals course could also be cross-listed or connected with HVAC/OT programs, given CISA's focus on OT (Operational Technology) network security. ● Conclusion ○ Cisco 1 content will be partially absorbed into the Informatics course. ○ Cisco 2 will be replaced by a new vendor-neutral Networking Fundamentals course covering up to layer 3 concepts. ○ The Survey of Artificial Intelligence will be added to the Cybersecurity AAS and certificate in place of Cisco 2. ○ Tim Preuss will hold off on finalizing the change pending further review of other curriculum proposals.
6.	Cybersecurity AAS Program Outcomes Revision Tim Preuss presented a proposal to reduce and broaden the Cybersecurity AAS program outcomes from 13 to 9, aiming for language flexible enough to accommodate future technological changes.	● Details ○ Tim Preuss: The current 13 outcomes create administrative burden and are rarely reviewed by employers. The goal is to reduce to 9 broad outcomes that remain relevant regardless of specific technology shifts. ○ Bob Henderson: Identified a missing emphasis on policy — specifically user-facing security policy, compliance checking, and business risk acceptance — in the proposed outcomes. ○ Bob Henderson: Noted that in many organizations, cybersecurity professionals are not the ones configuring systems; they audit and confirm compliance, while infrastructure teams implement changes. Suggested changing "configure, secure, and manage" to "audit" to reflect this reality.

		○ Bob Henderson: Strongly advocated for an outcome related to business risk understanding, emphasizing that cybersecurity exists to support the business, not override it. ○ Tim Preuss: Agreed and noted he would revise the outcomes to reflect auditing, policy management, and business risk alignment. ○ Advisory members: Discussed the evolving threat landscape — modern attacks involve long-dwell persistence (average 180+ days), social engineering, and lateral movement rather than direct crown-jewel theft, requiring students to understand log correlation, behavioral analysis, and AI-assisted pattern recognition. ○ Bob Henderson: Suggested that the outcome around "configure, secure, and manage" be revised to focus on auditing and compliance verification rather than direct configuration. ○ Pann Ajjimaporn (instructor): Raised the question of whether there is a course focused on cybersecurity writing and reporting (e.g., pen test reports). ○ Bob Henderson: Noted that AI is now commonly used to translate technical findings into business-readable reports, and suggested this skill be incorporated into the Survey of AI course. ● Conclusion ○ Program outcomes will be revised to 9, with broader language to accommodate future technologies. ○ Outcomes will be updated to emphasize auditing over configuration, business risk alignment, and policy management. ○ AI-assisted technical-to-business communication will be incorporated into the Survey of AI course. ○ Tim Preuss will continue refining the Cybersecurity AAS outcomes based on advisory feedback.
7.	Cybersecurity AS (Transfer) Degree Proposal (continued) Tim Preuss introduced a preliminary proposal for a Cybersecurity AS transfer degree to address the poor transfer experience from M-State's Cybersecurity AAS to MSUM's Cybersecurity program.	● Details ○ Tim Preuss: The existing articulation agreement (Computer Programming AAS to MSUM Cybersecurity) results in a 4.5-year completion timeline and a high dropout rate at MSUM. The agreement was created administratively without faculty input. ○ Tim Preuss: A Cybersecurity AS would follow the 30 technical / 30 general education credit structure required by Minnesota legislature. ○ Tim Preuss: Plans to retain the Network Defense course in the AS to ensure graduates who choose to enter the workforce directly (rather than transfer) have employable skills. ○ Advisory members: Noted that M-State students on the cyber defense team often demonstrate more practical skills than MSUM students, who tend to have stronger theoretical backgrounds.

		○ Tim Preuss: Identified the need to align courses with MSUM equivalents, including Fundamentals of IT Security, Introduction to Networking, Linux, and scripting courses, while navigating MSUM's internal academic politics. • Conclusion ○ The Cybersecurity AS transfer degree concept is supported but the current draft outcomes need to be rewritten to be genuinely cybersecurity-focused. ○ Tim Preuss will revise the AS outcomes and course alignment in consultation with MSUM counterpart Juan Cabanela.
9.	Course Alignment with MSUM: Fundamentals of IT Security and Networking Tim Preuss compared M-State's Fundamentals of IT Security and Introduction to Networking courses with MSUM equivalents, seeking advisory input on whether to merge or modify them.	• Details ○ Tim Preuss: MSUM's versions of these courses are more theory-focused ("why"), while M-State's are more hands-on ("how"). Juan Cabanel requested that M-State's Fundamentals of IT Security be modified to align more closely with MSUM's version for a 1-to-1 transfer credit. ○ Advisory members: Suggested that M-State is likely already teaching the "why" through hands-on labs, but the course outcomes need to be reworded to make this explicit. ○ Bob Henderson: Recommended merging the two approaches — retaining hands-on labs while explicitly articulating the underlying principles in the outcomes language. ○ Advisory members: Agreed that the Introduction to Networking course comparison shows a similar pattern — M-State teaches the "how" through action, MSUM teaches the "why" through theory — and that a merger of approaches is the right path. ○ Tim Preuss: Agreed to revise both courses' outcomes to better reflect the theoretical grounding already present in the hands-on instruction. • Conclusion ○ Both Fundamentals of IT Security and Introduction to Networking will have their outcomes revised to better reflect the "why" alongside the "how." ○ The revised Networking course, combined with expanded Informatics content, will serve as the new Networking Fundamentals course.
10	Linux Curriculum Alignment Tim Preuss compared M-State's Linux 1 course with MSUM's Linux Programming and Development Tools course.	• Details ○ Tim Preuss: M-State's Linux 1 is designed for students with no prior Linux experience, starting with a GUI and transitioning to command-line. MSUM's course assumes prior Linux knowledge and focuses on programming and development tools.

		○ Advisory members: Noted that M-State's Linux 1 reads more like system administration/bash scripting, while MSUM's reads like a development-focused course. ○ Tim Preuss: Prefers to keep Linux 1 as a gentle introduction and align Linux 2 more closely with MSUM's course, creating a natural progression. ○ Advisory members: Agreed that this approach makes sense, as students also take CPTR 1001 (Python) which provides additional programming exposure. • Conclusion ○ Linux 1 will remain a beginner-friendly introduction to Linux. ○ Linux 2 will be revised to align more closely with MSUM's Linux Programming and Development Tools course.
11	Scripting and Programming Course Sequencing The group discussed the sequencing and alignment of scripting and programming courses, particularly in the context of the transfer pathway.	• Details ○ Tim Preuss: The current sequence includes Programming Logic (CPTR 1040), Introduction to Programming (CPTR 1001), and Scripting for Automation. ○ Advisory members: Suggested that CPTR 1001 currently contains content (e.g., language features and syntax) that belongs in Programming Logic, and that 1001 should focus more purely on programming primitives. ○ Bob Henderson: Recommended that source control (e.g., Git) be introduced as a programming primitive in CPTR 1001, so students are using it by the time they reach Scripting for Automation. ○ Advisory members: Identified Scripting for Automation as the course most aligned with MSUM's CS 162 (tool-building with scripting), and recommended it be positioned in the final semester before transfer. ○ Pann Ajjimaporn: Suggested that the three-course scripting sequence could potentially be streamlined, with the "why" taught first and the "how" applied in the second course, reducing redundancy. ○ Advisory members: Noted that fear of scripting among graduates is a problem, and normalizing scripting as a standard expectation across all IT roles would be beneficial. ○ Bob Henderson: Emphasized that PowerShell and scripting proficiency are non-negotiable expectations for IT professionals. • Conclusion ○ CPTR 1001 will be reviewed to remove content that belongs in Programming Logic and to introduce source control as a standard primitive.

		○ Scripting for Automation will be positioned as the capstone scripting course in the final semester before transfer. ○ Pann Ajjimaporn and Jason Peterson will review scripting course objectives for potential streamlining.
12	Cybersecurity Certificate Program Tim Preuss raised concerns about the college's requirement for a short-entry cybersecurity certificate and the difficulty of making it meaningful.	• Details ○ Tim Preuss: The college wants a quick-entry certificate, but cybersecurity is not a field where a short certificate leads directly to employment, especially for recent high school graduates. ○ Tim Preuss: Ideally, the certificate would serve as a fundamentals-focused credential for people with existing bachelor's degrees looking to transition into cybersecurity. ○ Advisory members: Suggested framing the certificate around cybersecurity awareness and fundamentals (the "why") rather than technical skills (the "how"), making it applicable to non-technical roles such as HR, business, and management. ○ Bob Henderson: Noted that this aligns with North Dakota's governor's push for cybersecurity education in K-12 and could attract students from that pipeline into the full AAS program. ○ Advisory members: Recommended the certificate focus on threat landscape awareness, terminology, policy primitives, and why cybersecurity matters — not hands-on technical skills. • Conclusion ○ The cybersecurity certificate will be redesigned around foundational awareness and the "why" of cybersecurity, targeting non-technical audiences and career changers. ○ Tim Preuss will continue developing this program and revisit it after other higher-priority changes are addressed.
13	IT Program Outcomes Revision Tim Preuss briefly presented a proposed revision to the IT program outcomes, reducing from 10 to 9.	• Details ○ Tim Preuss: The revision is minor — reducing from 10 to 9 outcomes — with the primary goal of broadening language to accommodate future IT evolution. ○ Advisory members: Expressed general approval of the proposed outcomes, particularly highlighting "perform proactive professional development" and "collaborate effectively" as especially valuable. ○ Bob Henderson: Emphasized that collaboration and communication — particularly translating technical concepts for non-technical stakeholders — are among the most lacking skills in IT graduates. ○ Tim Preuss: Noted that the "communicate technical concepts" outcome is already present in the proposed revision. • Conclusion ○ The IT program outcomes revision is approved in principle.

		○ Tim Preuss will proceed with submitting the change through the formal approval process.
14	Guest Speakers, Tabletop Exercises, and Industry Engagement Advisory members offered to contribute more directly to classroom experiences through guest lectures and tabletop exercises.	• Details ○ Bob Henderson: Offered to provide tabletop exercise materials used for quarterly county IT team drills, which could be adapted for the Fundamentals of IT Security course. ○ Advisory members: Noted that they have guest spoken at Concordia and MSUM and are willing to do the same at M-State. ○ Advisory members: Suggested that industry professionals could align their presentations with specific curriculum topics (e.g., AI use cases, incident response) to reinforce classroom learning and answer the "why am I learning this?" question. ○ Tim Preuss: Expressed interest in organizing guest speaker sessions and tabletop exercises, noting he would send a general email to the advisory group asking for volunteers by topic and availability. ○ Advisory members: Highlighted the mutual benefit — industry professionals gain early access to potential hires, and students gain exposure to real-world applications and regional employers. ○ Bob Henderson: Noted that regional talent retention is a strategic goal for Cass County and that keeping graduates in the region benefits all local employers. • Conclusion ○ Tim Preuss will organize guest speaker and tabletop exercise opportunities, starting with a general email to the advisory group. ○ Advisory members are willing and available to contribute; they need Tim Preuss to initiate scheduling.
15	AI Integration in Coursework and Assessment A broader discussion took place about how AI is being integrated into coursework and how academic integrity is being managed.	• Details ○ Tim Preuss: Has shifted to requiring students to use AI for assignments, with the expectation that submissions look professional and are accompanied by student explanations and validation. ○ Advisory members: Noted that preventing AI-assisted cheating on standardized or online tests is virtually impossible, and that tools now exist to deliberately introduce errors to mimic human performance. ○ Tim Preuss: Acknowledged that the Cisco online curriculum has been heavily compromised by answer-sharing, which is another reason to move away from it. ○ Advisory members: Observed that AI is increasingly used in professional settings for tasks like writing memos, translating technical reports for executives, and generating SQL case

		statements — and that teaching students to use AI effectively and critically is the right approach. ○ Bob Henderson: Confirmed personal use of AI for memo writing, noting it produces less cynical and more politically appropriate output. • Conclusion ○ AI use in coursework will be embraced and required, with assessment shifted toward validation, explanation, and critical evaluation of AI outputs.
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Note: To-Do Items listed in Bold

- **Tim Preuss**

- [] Revise the Informatics course to include essential networking fundamentals (ping, traceroute, IP configuration, basic encryption, and up to layer 3 concepts) applicable across all majors.
- [] Develop or source a vendor-neutral Networking Fundamentals course to replace Cisco 2, covering VLANs, subnetting, routing, basic firewall concepts, and layer 1–3 principles.
- [] Finalize the plan to replace Cisco 2 in the Cybersecurity AAS and certificate with the Survey of Artificial Intelligence.
- [] Write the Cybersecurity AS transfer degree program outcomes.
- [] Revise Cybersecurity AAS program outcomes to reflect auditing over configuration, business risk alignment, and policy management, reducing from 13 to 9 outcomes.
- [] Revise IT program outcomes from 10 to 9 and submit through the formal approval process.
- [] Revise Fundamentals of IT Security and Introduction to Networking course outcomes to explicitly reflect the "why" alongside hands-on instruction, in alignment with MSUM equivalents.
- [] Revise Linux 2 course to align more closely with MSUM's Linux Programming and Development Tools course.
- [] Consult with Juan Cabanela at MSUM regarding course alignment, transfer credit agreements, and what can realistically be approved for the Cybersecurity AS.
- [] Work with Pann Ajjimaporn and Jason Peterson to review and potentially streamline scripting course objectives (CPTR 1001 and Scripting for Automation), including introduction of source control as a standard primitive.
- [] Redesign the cybersecurity certificate around foundational awareness and the "why" of cybersecurity for non-technical audiences.
- [] Send a general email to the advisory group requesting guest speaker and tabletop exercise volunteers by topic and availability.
- [] Formally propose the addition of a discrete mathematics course through the math department, framing the justification around transfer success rates and dropout data.
- [] Explore the possibility of connecting a vendor-neutral networking fundamentals course with HVAC/OT programs given CISA's OT security focus.

- **Jason Peterson and Pann Ajjimaporn**

- [] Review CPTR 1001 objectives to remove content that belongs in Programming Logic and to introduce source control (e.g., Git) as a standard programming primitive.
- [] Review Scripting for Automation objectives to ensure alignment with MSUM's CSIS 162 and position it as the capstone scripting course before transfer.