

MISSION: Provide dynamic learning for living, working and serving. VISION: A success story for every student and stakeholder.

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| ADVISORY COMMITTEE MEETING | | | |
| Advisory Committee: | Computer Programming, Information Technology-AS and Network Administration & Security | | |
| Meeting Date: | February 26, 2021 | Chair: | James Anderson |
| Time: | 1:00 PM | Vice Chair: | None Yet |
| Location: | Zoom Meeting | Recorder: | Dave Hjalmquist |
| Committee Members: | James Anderson, Bruce Curtis, Andrew Haugen, Nick Ingolfsland, Pete Lambertz, Johan Lucas, Raliegh Porter, Don Stieha, John Tassava, Patrick Walker, Dr. Borcherding, Dr. Maduko, Deb Flaskerud, Dave Hjalmquist, Janet Johnson, Jason Peterson and Tim Preuss | | |
| Resources: |  | | |

*Important Note: Advisory Committees meet twice per year. While every topic on the agenda template may not be addressed at both meetings, all topics should be addressed over the course of the year.*

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| AGENDA/MINUTES | | |
|  | Agenda | Minutes/Decisions |
| 1. | Welcome and Updates   * Communications Check (Audio and Video) * Call meeting to order * Additions/approval of agenda * Approve last meeting minutes * Update advisory membership list and introduce new members (using sign in sheet) * College update from an academic dean | John Tavassa motioned to approve and Deb Flaskerud 2nd to approve the last meeting minutes.  Introductions were made.  Tim and James led the meeting.  Dr. Borcherding and Dr. Maduko represented the M State administration.  Tim explained the Collegiate Cyber Defense Competition and that we have 8 students going to in as a team and four alternates. |
| 2. | Chair/Vice Chair Elections | None to report |
| 3. | Program Updates/Changes Since Last Meeting | None to report |
| 4. | Discussion of Student and Program Graduate Performance   * Student retention and completion * Placement rates * Student success stories * Advisory Committee Survey results | None to report |
| 5. | Discussion of Industry Trends |  |
| 6. | Course and Program Plan Review | There are needs for both types, students who get a job right of school, other students go on with something like 2+2.  Nick said he would have no problem hiring someone who didn’t know the language needed but knew other languages.  Need to be able to do hands off troubleshooting from a remote laptop.  Student needs to understand what the business is doing and how they are using technology.  It was expressed that there are a definite shortage of quality employees and students.  There are some businesses that still use COBOL.  There was a discussion by the group on Cyber Security led by Janet.  James said the industry doesn’t know where it is going because of COVID.  Businesses are moving to make working from home acceptable.  There was a discussion on enrollment and how to find students. |
| 7. | Program Outcome Review and Program Updates | Bob Henderson email 2/26/2021. He was unable to attend.   * + What technologies are you dealing with now? We are dealing with a growth in our containerization environment, as well as updating legacy hardware and virtualization stacks to support modern tooling such as Infrastructure as code. We have begun to a reevaluation of all IT processes with a focus of streamlining and automation, leaning towards a Lean and Agile model not just for development, but also for day to day tasks.   + What technologies are in your future?     - Machine Learning Yes. We are using this already with some of our GIS Datalakes to find more patterns.     - Artificial Intelligence Potentially. I see this more of an extension of the above.     - Virtual Reality We are investigating this for training for Fire and PD staff     - Augmented Reality There has been requests for this to implemented in areas around the city by tourism boards. No movement yet, but could see it coming soon.     - Edge Computing Strong interest in this, and we are already using it in many places. By getting some of our compute at the edge, we are better able to integrate with a myriad of sensors, and then use that data to make better decisions without having to worry about getting the data back to a central point via the network from the sensors. This is leading us towards making better decisions in areas such as traffic engineering.     - Is on premises dead? No, and the rumors of it’s death are quite early. I see the Cloud vs On-prem as a cyclical approach, as was Mainframe vs endpoints for compute. Cloud definitely has it’s place, as does on prem. For areas such as SCADA networks, military, R and D and other  high critical nature, on prem will probably always have a presence due to security of being able to airgap. Where I see Cloud really making a stronger push is the smaller one man shops or no-man shops for IT. It’s harder to justify a smaller business to have a technical resource on site that can manage and maintain, for example, a Microsoft AD/Exchange/Fileserver/DNS/DHCP basic stack when they could pay someone less and get those features with an O365 sub.     - Quantum Computing Sadly above anything I’ve looked at.   + Describe the attributes of the ideal entry level employee. A trainable, curious staffer who is ready to learn without believing they already have all of the answers. Someone who can take instruction and criticism, and understands the boundaries they must play in, and respect that. Someone who can think outside of the box and can do more than just follow a step by step guide or a script.   + What elements must be in an IT two year education? A broad base in standard, vendor-agnostic tech stacks such as Networking up to Layer 3, basic hardware, troubleshooting, critical thinking, interpersonal communications (customer service), and intro to a basic scripting language (python, go, powershell) in year one. Year 2, let them focus a bit more into one of the areas mentioned above, with another mandatory class in scripting to continue on that. * Program Updates   + Computer Programming     - The faculty are looking for class/program suggestions from the group. Consideration is being given to making changes during next school year. I would want to see more of a focus on the full SDLC, beyond just the creation of the app. Focus on the full scale of packaging, deployment, and lifecycle management of the app. Containerization, Kubernetes, and CI/CD Pipelines, writing helm charts, and so on.     - What programming languages and skills are necessary for entry level programmers? Languages vary by the job, but it’s honestly the skill to jump in and map a process from start to end, and then be able to communicate that process to non-technical stakeholders.   + Cybersecurity   What are the knowledge and skills necessary for entry level security employees? I believe the best cybersecurity employees are the ones that understand how networking works. So I’d want a baseline, honestly, all of the other majors. I see Sec employees being at a higher bar, as they are the ones who need to watch the other systems. |
| 8. | Program Needs (partnerships, equipment and recruitment) | * COVID is reducing enrollments * Interest in mock interviews / Need 2-3 week lead times * Is faculty being supported by Marketing departments? – ask by a member of the committee * Does the college have a department to marketing group to market programs? * Student weekly project spin into a blurb, CCDC, robotics club quick blurbs * Advertise at Universities * Advertise to guard members, give a path * Look at time of day offerings * Are you prepared for two year education being free * If free, does that mean all succeed? * Students/graduates need to be hirable * Department will do partnerships * Department will look at old equipment * Interested in internships/employment * Virtual career fair on 3/26 |
| 9. | Other | Meeting ended at 2:50 |
| 10. | Next Meeting Date | TBD for next fall semester, Tim thinks early October |

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| ACTION ITEMS | | | |
|  | Action Item(s) | Owner | Target Date |
| 1. | Provide update on IT-AS status | Tim | Next Meeting |
| 2. | Schedule next meeting | Tim | Early fall |
| 3. |  |  |  |
| 4. |  |  |  |
| 5. |  |  |  |

**REMINDER:** Upload meeting minutes in the Employee Portal>Files and Forms>[Academic](https://employees.minnesota.edu/files/forms/?s=14)