Departmental/Program Assessment Report Form 2019-20

Assessment reports will be completed through Qualtrics to make it easier to share and compile data across campus. The reporting questions will be similar to the questions used in the past, but with some additional detail requested in some areas to help us in collecting and analyzing college and institution-wide data on assessment practices. Your assessment reports will be maintained on file electronically on a password secure site (SharePoint). Other individuals on campus will have access to your reports.

Please complete one Assessment report per learning outcome that you are reporting on.

Name Please identify your department or program and the name of your assessment liaison:

Department/Program: Management Information Systems
Assessment Liaison: Suresh Chalasani
Report Prepared by: Heather Miles

Q1 1. What learning outcome did you assess for this report? (Reminder - if you assessed multiple learning outcomes this academic year, you should complete a separate report for each outcome.)
MISLG4: Design information system infrastructure for a given business scenario. (Closely aligns with the shared learning goal **Reasoned Judgment**)

Q2 2. Which of the institution-wide shared learning goals does this outcome connect to?
- ❑ Communication (1)
- ❑ **Reasoned Judgment (2)**
- ❑ Social and Personal Responsibility (3)

Q3 3. What assessment tool(s) or method(s) did you utilize? (Check all that apply)
- ❑ Survey (1)
- ❑ Standardized exam (2)
- ❑ **Assignments from a course or courses** (3)
- ❑ Assignment from a course or courses (4)
- ❑ Student portfolios (5)
- ❑ Direct observation of student work or performance (6)
- ❑ Other (7) _____

Q4 4. What type of measurement did you utilize?
- ❍ **Direct (asking students to demonstrate their learning)** (1)
- ❍ Indirect (asking students to self-report their perceived level of learning) (2)
- ❍ A combination of the above (3)

Q5 5. What type of methodology did you use?

- ❍ Qualitative (1)
- ❍ **Quantitative (2)**
- ❍ A combination of the above (3)

Q6 6. What type of course delivery methods did you use to collect your data? If your assessment project is course-based, please identify the course delivery method.

- ❍ **Face to face (1)**
- ❍ Online (2)
- ❍ Hybrid (3)
- ❍ Flex Option (Competency Based)
- ❍ A combination of the above (4)
- ❍ Other: Please Specify: _____

Q7 7. What was the process of analysis? How did you involve your department in the process of analysis? (100 words)

In MIS 327, students learn how to design information infrastructure including computer networks for a given business scenario. In fall 2019, adjunct professor Heather Miles used the following homework lab-work 8 and presentations on the infrastructure components to determine student proficiency in the following rubric dimensions: Infrastructure proposal technical requirements; Infrastructure business proposal; Infrastructure/ network diagram.

In 2016, MISLG4 was revised to place a stronger emphasis on computer/IT infrastructure and not just computer networking. Some topics that have been revised and more emphasized since 2016 include cloud infrastructure and virtualization. These changes were implemented to expose students to the concepts and terminology surrounding modern networking and cloud based infrastructures. The two versions of the learning goal are reproduced below:

MISLG4 prior to 2016: Understand the design principles of computer network architectures and apply them to a business problem.

Revised Version (2016 and later): MISLG4: Design information system infrastructure for a given business scenario.

Once they graduate, students are expected to be familiar with technical topics such as cloud infrastructure and virtualization along with understanding the components of networking and their use and application within the modern multi-dimensional environment. They are expected to create their solutions in a functional practical manner. Students must also be aware of, and implement solutions which are, secure and private, utilize best practices in cost integration, while considering the limitations inherent within the scenario. They present the requirements of an infrastructure proposal to key stakeholders; hence this change was made to the learning goal. Because of this change, the rubric for assessment was also redesigned (see Appendix A for rubric details): Infrastructure proposal technical requirements; Infrastructure business proposal; Infrastructure/network diagram. Student performance in labwork 8 was

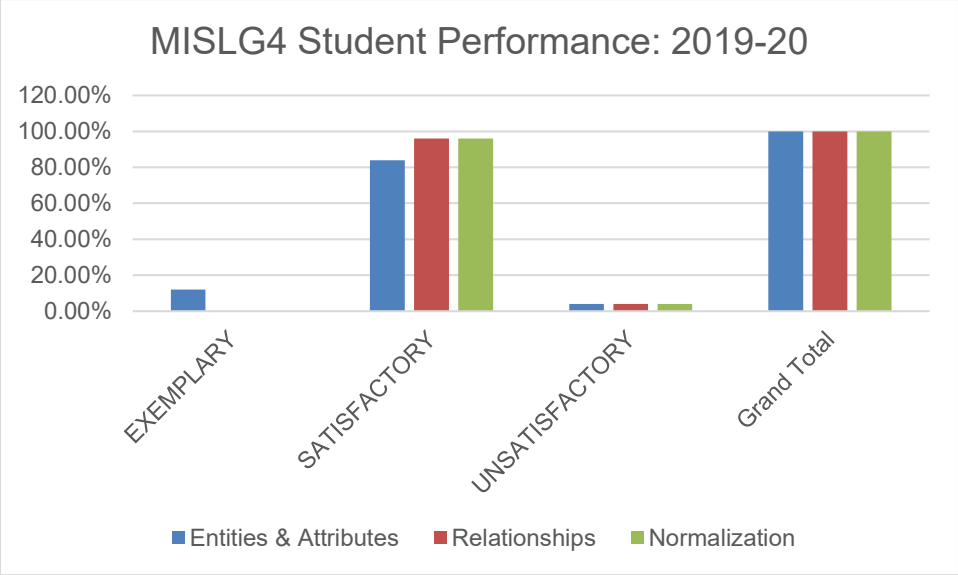
analyzed using this rubric. The learning goal, rubric, and the results from this assessment will be discussed with the department in Fall 2020.

Q8 8. What were the results of this analysis? (250 words)
Student performance in various rubric categories is displayed in the tables below .

STUDENTS - RAW DATA

	EXEMPLARY	SATISFACTORY	UNSATISFACTORY	Grand Total
Infrastructure proposal technical requirements	3	21	1	25
Infrastructure business proposal	0	24	1	25
Infrastructure/ network diagram	0	24	1	25
STUDENTS - PERCENTAGES				
	EXEMPLARY	**SATISFACTORY**	**UNSATISFACTORY**	**Grand Total**
Infrastructure proposal technical requirements	12.00%	84.00%	4.00%	100.00%
Infrastructure business proposal	0.00%	96.00%	4.00%	100.00%
Infrastructure/ network diagram	0.00%	96.00%	4.00%	100.00%

These results are pictorially depicted in the graph below.



Overall, student performance in various rubric dimensions is satisfactory; one student did not attempt the exercise, and three students did an exemplary job comprehending and addressing the security aspects within the scenario. Thus, the revised learning goal placed more emphasis on designing the overall IT infrastructure and students seem to understand these concepts well. These results will be monitored in future years.

Q9 9. How were results shared/discussed with your department/external stakeholders? (Check all that apply)

- ❍ Special faculty meeting (1)
- ❍ Part of a regular faculty meeting (2)
- ❍ **Shared electronically (3)**
- ❍ Advisory board (4)
- ❍ **Other (5)** _They will be discussed in a future Business department's undergraduate curriculum committee meeting. _____

Q10 10. As a result of your analysis, what changes will your department or program make to improve student learning? (250 words)

No changes are planned at this point.

Q11 11. Looking back at your last assessment report, what is the current status of the plan for improvement of student learning that was discussed in your past reports? (Check all that apply)

- ❍ Proposed (1)
- ❍ In consideration (2)
- ❍ **Implemented (3)**
- ❍ Being assessed (4)
- ❍ Other (5)

Q12 12. Indicate all changes made to your program to improve student learning since the last assessment report you submitted. Some example changes include the following: Revising learning goals, outcomes and rubrics; Revising pre-requisites; Improving hands-on learning and labs; Introducing new courses; Changing emphasis on topics; Providing more tutoring help; Progressive measurement of the same learning goals in multiple courses; Redesigning assessment instruments such as assignments, exams, labs, and quizzes. (250 words)

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Revised Version (2016 and later): MISLG4: Design information system infrastructure for a given business scenario.

Once they graduate, students are expected to be familiar with technical topics such as cloud infrastructure and virtualization and present the requirements of an infrastructure proposal to key stakeholders; hence this change was made to the learning goal. Because of this change, the rubric for assessment was also redesigned (see Appendix A for rubric details): Infrastructure proposal technical requirements; Infrastructure business proposal; Infrastructure/network diagram.

When the class was redesigned in 2017, our goal was to look at the expanded picture of modern networking and introduce the terminology and concepts of implementation methodology. With IPv6, NATs, IoT, Cloud Technologies, and Virtualization much was and continues to evolve within the ever broadening field of Networking. The class was expanded to include Cloud Technologies and Virtualization along with the challenges and opportunities these concepts bring to the field of Information Technology. As an introduction course in these concepts, focus is on the concepts and terminology and their correct utilization in a broad number of interrelated topic areas. We strove to connect how the Computer Networking concepts of old, that everyone uses but few understand, are still there underneath all of the technology and infrastructure taken for granted. We also bring forward the top challenges facing current practitioners in the areas of networking revolving around security, big data, complexity, efficiencies, green computing, and their tie-in to business requirements and ROI. IT Infrastructure exists to support the business goals and must be looked at from within that lens in MIS. Students are expected to articulate the underlining business need and then design the Infrastructure including Network .

Q13 13. Please write an abstract of no more than 250 words to summarize your assessment report this year. Your abstract should address items completed above, including which learning outcome was assessed, which data were collected and analyzed, how the department discussed the findings, and what changes are planned as a result of what was learned. In addition, please emphasize the changes made to your program since the last assessment report (see questions 11 and 12). This abstract will be the basis of the assessment poster that the OIE will generate for the Assessment Showcase, and will be used as an easy way to share a summary of your report with others on campus.

Abstract:

In MIS 327, students learn how to design information infrastructure including computer networks for a given business scenario. In fall 2019, adjunct professor Heather Miles used the following homework lab-work 8 and presentations on the infrastructure components to determine student proficiency in the following rubric dimensions: Infrastructure proposal technical requirements; Infrastructure business proposal; Infrastructure/ network diagram.

In 2016, MISLG4 was revised to place a stronger emphasis on computer/IT infrastructure and not just computer networking. Some topics that have been revised and more emphasized since 2016 include cloud infrastructure and virtualization. Once they graduate, students are expected to be familiar with technical topics such as cloud infrastructure and virtualization and present the requirements of an infrastructure proposal to key stakeholders; hence this change was made to the learning goal. Because of this change,

the rubric for assessment was also redesigned (see Appendix A for rubric details): Infrastructure proposal technical requirements; Infrastructure business proposal; Infrastructure/network diagram. Student performance in labwork 8 was analyzed using this rubric. Overall, student performance in various rubric dimensions is satisfactory; no students were in the exemplary or unsatisfactory categories. Thus, the revised learning goal placed more emphasis on designing the overall IT infrastructure and students seem to understand these concepts well. These results will be monitored in future years. The results from this assessment will be discussed with the department in Fall 2020.

SPECIAL QUESTION RELATED TO DISTANCE EDUCATION COURSES:

If your program is delivered fully or partly via distance education (online, hybrid, or flex-option/competency-based), please indicate the assessment efforts/plans undertaken in distance education (DE) courses/programs. Please emphasize topics such as assessment plans for distance education courses/programs, assessment results for DE courses/programs. (No limit on the length)

MIS program is a face-to-face program and, except MIS 320 and PMGT courses, no courses are offered online. In future, assessment results from online sections of MIS 320 and PMGT courses will be shared.

Appendix A: Rubric to Measure Student Performance for MISLG4

MISLG4: Design information system infrastructure for a given business scenario.

	Exemplary	Satisfactory	Unsatisfactory
Infrastructure proposal technical requirements	Student's proposal includes all of the required infrastructure technical elements. In addition, the proposal includes at least two optional software/hardware enhancement products that will improve the infrastructure's operation.	Student's proposal includes all of the required infrastructure technical elements. No optional software/hardware products are included.	Student's proposal does not include all of the required infrastructure technical elements.
Infrastructure business proposal	The proposal is a well written business proposal. All sections of the proposal are included and are properly organized.	The proposal is an adequately written business proposal. All sections of the proposal are included but may not be properly organized.	The proposal is poorly written or not all of the sections of the proposal are included.
Infrastructure/ network diagram	Student submits a complete infrastructure diagram with all required technical components. The diagram is fully documented.	Student submits a complete infrastructure diagram with all required technical components. The infrastructure documentation is incomplete or missing.	Students submit an incomplete infrastructure diagram that does not include all of the technical components.

Appendix B: Assignment to Measure Student Performance

You have just been hired as the only IT support staff for a manufacturing company that employs approximately 70 people. Your first assignment is to design a network that supports the companies needs while providing security for their data and operations.

The company has the following departments:

- Sales with five employees who use laptops both in and out of the office.
- Finance with five employees, **each** with a desktop computer and network-connected printer for reports and/or checks.
- Engineering with five employees, each with a high-end CAD workstation. The department shares a networked plotter for printing drawings
- Information technology with one employee (you!), a desktop and laptop.
- Manufacturing with two shifts of 20 employees that operate two network-enabled machines to produce the company's products.

You are currently responsible for (in addition to the printers in Finance & Engineering) four networked printers available to everyone in the company, an authentication server, a DHCP & DNS server, a file server, a database server, and an Internet webserver.

The president of the company is security and cloud aware, and has set the following requirements that your design must meet:

- The company cannot afford to maintain their "server closet", so there will not be any additional servers installed on-site. Future server needs (including replacements for the current servers as the age) will be handled in the cloud.
- Individual machines must be identifiable in system logs for both on-site and cloud services.
- Sales and Finance are the only departments that need access to the database server.
- Engineering saves final CAD documents to the file server for Manufacturing to use in production.
- The web server accepts orders from the general public.
- The company has obtained 203.0.113.0/26 from their Internet Service Provider.

In your assigned groups, create a table of machines with assigned IP ranges and subnet masking as learned to isolate functional groups for security reasons. Be sure to include the network and broadcast addresses for each domain. It might be helpful to create a network map for visualization purposes but this is not mandatory. You will present your solution to the class on Wednesday, December 11 @ 3:30 pm during the final exam time slot. All members of your group must speak and you will have 10 minutes to share your design, talk about the choices you have made and why. I expect your time to be utilized effectively and efficiently. (Meaning, 9:15-10:45 minutes is your target presentation time. More or less will be penalized.) If it helps, think of it as a design proposal for your client (me)!