Question

Criterion I - Teaching Effectiveness: See Faculty Handbook, Part I: Section 8.3.1

Manager

Rating
4-Exceeds Satisfactory

Answer

Darryl, thank you for the great work you do teaching our students. I reviewed the student evals and took a look through your MATH 111 class which is very nice. I especially liked the announcements and your participation within the discussion. I would encourage you to continue building the video content and other ways to reach students, especially through feedback for specific assignments where the students maybe needing some direction towards resources to review etc

Employee

Answer

Teaching Goals and Objectives from Teaching Plan (CY 2023)

Teaching goals are the same as last year: provide exceptional teaching in my reduced teaching schedule while continuing to develop as an educator.

- Exceptional Teaching as Judged by Students – Average quantitative scores of Instructor Experience above 4.5 and above College average. Less than 10% of student free responses to Instructor Experience are neutral or negative.
- Ongoing Course Improvement – Make measurable improvements in at least one course. Target courses: MATH 111, CSCI 251.
- Ongoing Professional Development – Attend at least one teaching-related professional development offering each month while on contract.

Summary Teaching Statement for AY 23-24

While I had a reduced teaching load due to my startup package, associate chair, and acting chair responsibilities, I provided exceptional teaching for the 3 courses I was scheduled to teach. My mean of mean for Instructor Experience in courses were 4.84, 4.63, and 4.72, which are all above the 4.5 goal and higher than the College average. All 13 student comments were positive, with the most noteworthy copied for this evaluation. Students praised my communication, feedback, and general encouragement in discussions.

I developed CSCI 251 during Fall 2023. CSCI 251 is the first data science course at ERAU-WW. It provides a practical and brief introduction to data science with Python, a widely-used programming language. The course was designed for students with little to no programming experience. All lessons, activities, and assessments were developed with ERAU-WW students in mind. Includes non-traditional assessments such as students collectively creating Documentation (describes the uses of Python to introductory students), debugging provided code, and analyzing industry data. I created brief (5-10 minute) video lessons for a wide range of concepts in the course as well. The course uses an OER textbook, but every lesson is written in Jupyter Notebook and has corresponding videos that I recorded.

I also reached my goal of at least one teaching-related professional development offering each month while on contract. This primarily was completed through ERAU-WW offerings through RCTLE, VECTOR, or the Faculty Learning Community (FLC) hosted by Debra Bourdeau and Donna Roberts. Unfortunately due to my elevation to Acting Chair I left the FLC in January 2025. The external offerings were the most productive to my continued development as a teacher and I will prioritize fewer, more meaningful teaching professional development opportunities next academic year.

Mean of Means for Instructor Experience

- MATH 111 (Aug 23) Mean 4.84 vs College 4.52
- MATH 111 (Oct 23) Mean 4.63 vs College 4.43
- CSCI 251 (Jan 24) Mean 4.72 vs College 4.53

Sentiment Analysis on Instructor Comments

- MATH 111 (Aug 23) 7/7 positive (100%)
- MATH 111 (Oct 23) 4/4 positive (100%)
- CSCI 251 (Jan 24) 2/2 positive (100%)

Representative Comments Regarding Instructor

- [MATH 111 Aug 23] Dr. Chamberlain set a new standard for me when taking online math courses, he effectively communicates with us students and challenges us enough not only in our work but in our group discussions to get our gears turning.
- [MATH 111 Aug 23] Mr. Chamberlain has been an excellent instructor despite the challenges of remote education, always answering questions as quickly as possible and ensuring we understand the subject or the specific math problem we were facing. Also, Mr. Chamberlain, after every single Discussion and skills check, provided us with positive comments to keep the high level of motivation of every one of us and the reasoning behind the question we got wrong.
- [MATH 111 Oct 23] Dr Chamberlain was a great instructor and was very understanding! Highly recommend him!
- [CSCI 251 Jan 24] This was one of the best instructors I have had. I struggled a lot in this course, and I always knew that I could reach out to Professor Chamberlain for anything, and I would get a prompt response. He is very good at explaining things and walking you through issues. I always received very helpful and useable feedback on all assignments.

Reflection on Student Comments

As noted in previous years, students continue to praise my quick and effective communication. Several comments pointed to my ability to simultaneous encourage and challenge students. This was evident within courses as well. For example, see a CSCI 251 student's reflection after their Module 6 project below.

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I thoroughly enjoyed working on this project overall. Initially, I harbored doubts about my abilities as I didn't feel completely confident in grasping all the content. However, I adopted the mindset that the only way forward was to attempt, possibly fail, and then persist until I arrived at the correct solution.

Completing this project was immensely satisfying, particularly after struggling with the previous one. Although this endeavor presented its challenges and I'm uncertain if I performed exceptionally well, I could confidently say that I exerted my best effort and persevered through the obstacles instead of succumbing to them.
>>>
This student, after being unable to complete the Module 2 Coding Practice and Module 3 Project, emailed to ask if they should drop the course. After encouraging the student by reminding them everyone, even I, fail when they are learning and continuing to provide targeted feedback as the student completed assignments in Modules 4 and 5, they were able to break through the proverbial ceiling and became an amateur coder. My go-to quote to encourage students is "The master has failed more times than the beginner has ever tried." This student's success story is exemplary of why students mention that I encourage and keep up high levels of motivation. It also points to my efforts to increase student retention in courses as enrollment is everyone's responsibility.

Peer Review
Dr. Tim Smith reviewed my October 2023 MATH 111 course. His review was generally positive, stating:
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Darryl, overall I feel the course is outstanding and could serve as a template for other faculty to view best practices etc. Please find below my notes on the main areas that I felt were outstanding, and other than to say keep doing what you're doing I do not have any comments and there are definitely not any areas of concern. The only suggestion I have is in line with the college's current project of adding more custom made video resources for our students, and while this project primally is focusing on course redevelopments there is also an opportunity to add a vid here or there in places such as announcements
>>>
Including more instructor videos, particularly in announcements and feedback, will be included in my Teaching Plan for next year.

Course Development
MATH 111 Pre-Calculus for Aviation
In the AY 22-23 redevelopment, I included an aviation-focused word problem for a Module discussion. This discussion significantly increased student engagement as well as interest in the mathematics behind aviation. In AY 23-24, I improved upon the word problem by including a choose-your-own-thinking applet. This interactive helps students visualize and check their answers for the particularly challenging discussion problem.

In Spring 2024, I further extended that interactive to be a full discovery-based learning activity that responds as students posit how to progress in a question with multiple ways to find the answer. Unlike assignments students might see in paid third-party sites, the focus is on how students think as they solve the problem. The activity prompts the student to (1) consider any additional information they want to solve for, (2) think about what a "realistic" answer might look like, (3) consider an approach they want to take, and (4) encourage students as they step through the process based on their thinking and choices. There are hidden trackers that save student responses throughout the process to check if students are making mathematically sound steps as they go and provide feedback if they do not. Again, this is different than the final product-focused type questions a student would normally work through in an online paid homework system and push the boundaries of what online education can achieve.

One long-time adjunct made the following comment about the new activity and interactive applet:
The new Module 7 Group Discussion Exercise in Math 111 was a tremendous addition to the course. Cognitive presence was demonstrated significantly in the various ways students sketched, formulated, solved and analyzed the given problem. Several students supplemented the work of others through extensive collaboration and tackling the problem from different angles...literally and figuratively! This was a welcome addition to an "aviation" course which up until recently didn't have many aviation applications

or examples. I received the most comments and questions from students (by far) about the discussion exercise.

CSCI 251 Introduction to Programming for Data Science
CSCI 251 is the first data science course at ERAU-WW. It provides a practical and brief introduction to data science with Python, a widely-used programming language. The course was designed for students with little to no programming experience. All lessons, activities, and assessments were developed with ERAU-WW students in mind using open-source materials. Includes non-traditional assessments such as students collectively creating Documentation (describes the uses of Python to introductory students), debugging provided code, and analyzing industry data.

Students praised the course in the first term it ran, stating "The course content was very well spaced, readings were always relevant (and were supplemented with videos that were also relevant), and the course was organized in a way that progressed well." As I created all of the course readings and videos, it was satisfying to see students found them useful and relevant. Some students expressed that the course ramps up too quickly in Module 5, so I will create more resources and make clear that while a high-level programming technique (RegEx) is introduced in Module 5, students can complete assignments without relying on it. I will also create more educational resources so students that want a further in-depth description can be pointed to ERAU-created materials rather than external sources like YouTube.

Professional Development
A list of all professional development related to teaching is provided below. Note in 5 of 10 months I undertook 2 teaching professional development opportunities and that 2 of 10 months I engaged in national-level teaching professional development. These national-level professional developments were the most impactful and thus next year I will focus on engaging with primarily national-level professional development.

- Aug 23 - National Offering: Mathematics Association of America MathFest (conference), COAS Offering: Faculty Learning Community
- Sep 23 - COAS Offering: Faculty Learning Community
- Oct 23 - RCTLE Offering: What's Under the Hood? How Generative AI Models Work, COAS Offering: Faculty Learning Community,
- Nov 23 - RCTLE Offering: Practical Pedagogy and ChatGPT, COAS Offering: Faculty Learning Community
- Dec 23 - COAS Offering: Faculty Learning Community
- Jan 24 - COAS Offering: Faculty Learning Community, RCTLE Offering: Creating Presence in the Online Classroom
- Feb 24 - COA Offering: Exploring the Delphi to Build Consensus on Relevant Curriculum in Space Studies Graduate Education, National Offering: SIGMAA on RUME Conference
- Mar 24 - RCTLE Offering: Navigating Virtual Discussions
- Apr 24 - National Offering: Invitation-only In-Person Workshops
- May 24 - RCTLE Offering: Mastering Quality Feedback for Student Success

Question

Criterion II - Scholarly and Professional Activity: See Faculty Handbook, Part I: Section 8.3.2

Manager

Rating 4-Exceeds Satisfactory

Answer

Darryl, thanks for the great work you are doing developing your expertise as a researcher. It is my opinion that a tenure track faculty member in the general felid of applied maths working at an University such as ours (e.g. one with a fairly heavy teaching/service load) will be meeting research expectations with 1-2 papers published in reputable journals, in addition to some conference presentations to share the work and taking some action to seek support, such as external funding, for their future work. Moreover, you are clearly more than exceeding these expectations, so a score of exceeding expectations is appropriate. While I feel confident to say that continuing on your current trajectory will be heading in good direction towards tenure, a suggestion for improvement would be to secure funding of your own grant as PI, which could also justify future ratings of outstanding here!

Employee

Answer

Research Goals and Objectives from Research Plan (CY 2023)

Research goals are guided by T&P Guidelines to stay on-track to earn Associate Professor title.

- 1 Grant - Submit One New External Grant. While this is not needed to earn Associate Professor, it ensures my solo research agenda continues to flourish.
- 2 Peer-Reviewed Publications - Submit Two Articles to Peer-Reviewed Journals. This will ensure I stay on-track to have at least one published article per year.
- 1 Presentation - Present Once at a National or Regional Conference. This will ensure I stay on-track to have at least one national or regional conference presentation per year.

Summary Research Statement for AY 23-24

Research achievements far exceeded research goals. For grants, I received 2 external grants ($400,000 [co-PI], $500 [solo PI]) while another external grant was not funded ($27,000 [co-PI]). I also received 1 internal grant ($2,000 [co-PI]). Compared to the expectation of submitting 1 internal/external grant in 5 years as an Assistant Professor, this is far beyond expectation. For publications, I submitted 5 publications, 4 of which were accepted (1 proceedings, 2 book chapters, 1 journal article) and 1 that is still under review (journal article). Compared to the expectation of publishing 1 peer-reviewed paper a year, this is far beyond expectation. For presentations, I was part of 4 peer-reviewed national presentations and delivered 2 invited talks. Compared to expectation of presenting 1 regional/national presentation a year, this is far beyond beyond expectation. In all metrics as counted for my tenure and promotion, I far exceeded the yearly quota.

Grants:

- Co-PI: Undergraduate Research for Fully Online STEM Students: Impact of Expanded Curricular Options on STEM Attitudes, Identity, & Career Ambitions
  Research Team: Robert Deters (PI), Emily Faulconer (co-PI), Brent Terwilliger (co-PI)
  Funding: $400,000 - Externally through NSF, 10/14/23--10/13/26.
  Roles: Data Management, Data Analysis, Manuscript Writing, Presentations.
  Brief Description: Follow-up study to improve upon previously-funded NSF project (Research Scholars Program) that developed model for fostering undergraduate STEM research.

Preliminary Results: There was strong interest by students and professors for an undergraduate program that encouraged research. Pilot provided evidence of efficacy related to workshops and the mentoring program as well as underscored barriers for students to begin research.

- PI: Autonomous Procedural and Conceptual Interactive Lessons
  Research Team: None
  Funding: $500 - Externally through mini-grant (from NSF Doenet grant).
  Roles: All aspects of the project.
  Brief Description: Development of interactive procedural and conceptual activities by leveraging automated feedback based on how a student responds.
  Preliminary Results: MyLab assignments may yield high scores on procedural assessments, but do not develop mathematical concepts. Students unable to transfer procedural skills to aeronautical contexts.
- Co-PI: Generative AI Feedback Across the Disciplines
  Research Team: Alex Rister (PI), Anastasia Angelopoulou (Co-PI), Cihan Aydiner (co-PI), Logan Gerber-Chavez (Co-PI), Iuliia Hoban (Co-PI), Zackery Reed (Co-PI), Meghan Velez (co-PI)
  Funding: $2,000 - Internally through ERAU-WW COAS Start-Up Funding, 1/1/24--6/30/24.
  Roles: Student Worker Management, Data Management, Data Analysis, Manuscript Writing, Presentations.
  Brief Description: Investigate how students perceive GenAI feedback across multiple disciplines through GenAI grading and providing feedback on a variety of discussion and short writing activities.
  Preliminary Results: GenAI does not consistently grade and has difficulty with the grading of meta-tasks (e.g., grading student's evaluations of hypothetical student work).
- Co-PI: EXCELing in STEM: The Impact of Empowering Student Engagement with the Public
  Research Team: Emily Faulconer (PI), Amy Gruss (supporting research), Effie Kartsonaki (supporting researcher), and Dong Jun Kim (supporting researcher)
  Funding: $26,962 - Externally through Spencer Foundation Small Grants Program, declined funding.
  Roles: Data Management, Data Analysis, Manuscript Writing, Presentations.
  Brief Description: The EXCELing in STEM project aims to address the persistent challenge of retaining STEM students in higher education by recognizing the importance of humanizing STEM education, making it more relatable and engaging. The proposed solution involves the creation of a student-authored blog called EXCEL (Exploring eXpertise in STEM through Creative, Engaging Learning), which provides a platform for students to disseminate artifacts generated in humanized STEM courses to a wider audience.

Publications:

- [journal article] Velez, M., Reed, Z., Chamberlain Jr., D., & Aydiner, C. (2024). Black Boxes Revisited: Understanding GenAI Responses to Students' Written Work. Thresholds in Education.
  CRediT Roles: Data Curation, Formal Analysis, Methodology, Writing - Original Draft.
- [journal article] Faulconer, E., Terwilliger, B., Chamberlain Jr., D., Deters. R., & Kam, C. (2024). Virtual Mentorship for Online Undergraduate Research: Analysis of Mentors and Mentees' Perspectives. Journal of Mentoring & Tutoring.
  CRediT Roles: Data Curation, Formal Analysis, Writing - Original Draft.

- [book chapter] Reed, Z. & Chamberlain Jr., D. (2024). A Framework for Analyzing Asynchronous Discussion Activities. Teaching and Learning Mathematics Online 2e, CRC Press, FL.
  CRediT Roles: Conceptualization, Data Curation, Formal Analysis, Funding Acquisition, Investigation, Methodology, Project Administration, Software, Visualization, Writing - Original Draft, Writing - Review & Editing.
- [poster, short paper in proceedings] Chamberlain Jr., D., McGuinness, P., Faulconer, E., & Wood, B. (2024, Feb 22-24). Using Trees to See a Forest: Leveraging Machine Learning to Classify Student Thinking. Poster at 26th Annual Conference on Research in Undergraduate Mathematics Education: SIGMAA on RUME, Omaha, NE.
  CRediT Roles: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Writing - Original Draft, Writing - Review & Editing.

Presentations:

- Chamberlain Jr., D., McGuinness, P., Faulconer, E., & Wood, B. (2024, Feb 22-24). Using Trees to See a Forest: Leveraging Machine Learning to Classify Student Thinking. Poster at 26th Annual Conference on Research in Undergraduate Mathematics Education: SIGMAA on RUME, Omaha, NE.
- Faulconer, E.*, Terwilliger, B., Deters. R., & Chamberlain Jr., D. (2024, Jul 30). Supporting Undergraduate Research for Fully Online Students. Distance Learning Administration Conference, Jekyll Island, GA.
- Velez, M.*, Chamberlain Jr., D., & Hoben, I. (2024, Jul 22-24). Beyond Text Generation: Incorporating GenAI Feedback in Asynchronous Online Courses. 2nd Annual Teaching and Learning
  with AI Conference, Orlando, FL.
- Chamberlain Jr., D.* & Quinlan, J. (2023, Aug 2). Technology Use in Undergraduate Mathematics Classrooms. 2023 Mathematical Association of America MathFest, Tampa, FL.

Invited Talks

- Chamberlain Jr., D. (2024, Mar 21). Constructing Isn’t Enough: Considering All Aspects of Proof. Invited by University of Florida College of Education Special Topics Seminar Course.
- Chamberlain Jr., D. (2024, Mar 18). What Your Course Design Says About You: How Epistemological Lens Can Drive Course Design. Invited by University of Florida Mathematics Department
  Pedagogy Seminar Series.

Non-Peer Reviewed Publications

- [under review, preprint] Chamberlain Jr., D., & Faulconer, E. (2024, July 3). Structural Framework for Interactions Between Community of Inquiry Presences, Cognitive Load, Demographics, and Grades.
  https://doi.org/10.31235/osf.io/7ay4t
  CRediT Roles: Data Curation, Formal Analysis, Writing - Original Draft.
- [white paper] Faulconer, E., Chamberlain Jr., D., & Wood, B. (2024). Community of Inquiry and Cognitive Load in online STEM: Transferability plan. Zenodo. DOI: https://doi.org/10.5281/zenodo.11203344
  CRediT Roles: Data Analysis, Writing - Review & Editing.
- [white paper] Wood, B., Faulconer, E., & Chamberlain Jr., D., (2024). Gathering Nuanced

Data for Understanding Student Withdrawals. Zenodo. DOI: 10.5281/zenodo.11094757
CRediT Roles: Writing - Review & Editing.

- [white paper] Faulconer, E., Chamberlain Jr., D., & Wood, B. (2024). Community of Inquiry and Cognitive Load: Research Summary Document. Zenodo. https://doi.org/10.5281/zenodo.11398144

Question

Criterion III - Service: See Faculty Handbook, Part I: Section 8.3.3. Include special appointment duties

Manager

Rating 5-Outstanding
Answer

Your service during AY 23/24 was outstanding and speaks for itself. Thank you for stepping up to help team MST in a time of need. I understand the workload of such responsibilities is extremely time consuming and you far than exceeding the time expectations for the service duties of a tenure track faculty member.

Employee

Answer

Service Goals and Objectives from Service Plan (CY 2023)

Service goals are to sustain the outstanding service I provide to the department, university, and professionally to my research community. If an opportunity presents itself, I will run for a leadership opportunity in my specialized research community RUME.

- Associate Department Chair – Help the new chair become familiar with ERAU-WW and MST. Exceptionally perform all ADC duties.
- ERAU-WW Senate Academic Technology Committee Chair – Continue to complete tasks as assigned by ERAU-WW Senate.
- Department Duties (Coordinator, Mentor, Developer) – Complete all departmental duties assigned to me, including coordinate Applied Mathematics Minor and mentor in MATH 111, CSCI 251, and STAT 412.

Summary Service Statement for AY 23-24

The presented Service Plan was written under the assumption that a new department chair would start Jan 24, which did not happen. Rather than helping the new chair become familiar with ERAU-WW and MST, I served as Associate Department Chair (Aug 23-Dec 23) and Acting Department Chair (Jan 24 - May 24). This added approximately 10 hours of work per week to my schedule, commonly due to numerous meetings, emails, and administrative responsibilities such as reviewing adjuncts' courses due to low evaluations. These responsibilities were in addition to my normal Associate Chair responsibilities such as academic course reviews, evaluating course equivalencies, interviewing adjuncts, and reviewing

course outlines. While I received 2 course releases for my efforts, I was only able to use one in AY 23-24 due to my other course releases.

I did not let the additional responsibilities impede my work on other assigned duties. I completed all tasks assigned to me as chair of the ERAU-WW Academic Technology Senate Committee, including a review of potential evaluation systems and design review meetings for the new portfolio and ERAU web presence. I also worked as a committee member on the Educational Experiences for the ERAU-WW Quality Enhancement Plan (QEP) and reviewed ERAU FIRST grants.

To compensate for my increased service responsibilities, the Applied Math minor was shifted to Beverly after I assumed the Acting Department Chair role in Jan 2024. Based on perceived interest in data science, I began development of BSDS for Fall 2024 submission.

I continued to serve my professional community in the following ways:

- Subcommittee Chair, MAA Subcommittee on Technology in Mathematics Education
- Committee Member, MAA Committee on Teaching Undergraduate Mathematics
- Council Member, MAA Council on Teaching and Learning
- NSF Grant Reviewer, IUSE (fall 2023)
- Journal Reviewer (8 papers between 5 journals)
- RUME Conference Reviewer (3 papers)
- Workshop Organizer, Technology in Mathematics Education at RUME Conference
- Ran for RUME Secretary, did not win election

Major Department Service

Acting Department Chair
While Debra Bourdeau was Interim MST chair for issues I could not act directly on (FTF personnel and finances), I took over day-to-day chair responsibilities. I've presented a list of the major responsibilities and provided some context below.

- Weekly Leadership Team meetings - Attend and report on departmental progress each week. I kept a running notebook and added to it as faculty raised concerns to my attention or as I kept track of faculty questions or successes.
- RCTLE, Scheduling, Advising meetings - Attended and contributed to all regularly occurring RCTLE, Scheduling, and Advising meetings.
- Lead MST monthly meetings - While leading MST monthly meetings, I also kept notes in OneNote for faculty to reference.
- Mid-Year COAS Contributions review - Reviewed faculty contributions in June-December to provide for Mid-Year COAS contributions report.
- All academic reviews and associated meetings - MST completed at least 5 course redevelopments (DSCI 201, MATH 201, MATH 202, MATH 502, CHEM 110) while others were started and moved to later terms (DSCI 310).
- Review course schedule each term - In particular, there were numerous scheduling issues for the Calculus and Physics for Engineering courses that required reviewing adjunct CVs for potential instructors.
- Resolve adjunct issues - Coordinate discussions between adjuncts and course mentors as well as review adjunct courses that were flagged by student evaluation scores. Two particularly stressful adjunct issues were resolved without student complaints: when Chris Fallen suddenly passed away in February and when Tatsuki Matsui lost use of his extremities and needed to be removed during Module 9 of the March term.

- Advocate for MST faculty interests and concerns - MST faculty are highly motivated and vocal with their concerns. Some of these interests were in the form of course changes (such as math courses removing time on assessments). Others were in recording current practices as we were quickly losing long-standing members of the department.
- Advise Debra Bourdeau on MST issues I could not act directly on - This included discussions on adjuncts that were eventually deactivated as well as helping faculty set their teaching schedule for AY 24-25.

Associate Department Chair
Beyond the normal responsibilities of Associate Chair, I completed two major tasks in AY 23-24: Faculty Activity Reporting and Hiring Committee Member for MST, BSS Chairs.

- Faculty Activity Report - To facilitate the reporting of activity to the chairs and eventually Steph for external reporting, I created a Qualtrics survey. This had several benefits with the largest being the uniform structure of reporting for Monthly Reports. Moreover, I created scripts to automate the Monthly Report, report to Kimberly Luthi, and individualized faculty reports for use in self-evaluations. I have updated and improved upon this activity reporting as necessary throughout AY 23-24.
- Hiring Committee for MST, BSS Chairs - Beyond normal hiring committee responsibilities of reviewing and interviewing candidates, I took on additional responsibilities normally reserved for the hiring committee chair. This included the initial review of candidates to ensure all candidates met minimum qualifications, contacting all MST chair references before on-campus visit, and traveling to ERAU-WW Headquarters to facilitate all on-campus interviews.