Collin County Community College District
APPLICATION FOR SABBATICAL LEAVE

Instructions

Please complete this application by responding to **all** items. Attach requested documentation (in the order requested) and secure the appropriate signatures prior to submitting the application to the chair of the Sabbatical Leave Committee. **Please submit the original and 10 copies.**

Name Dr. Kristi Clark-Miller CWID 100039642

Title Professor Division Sociology

Have you ever been granted a sabbatical? ☐ **If yes: Dates of Prior Sabbatical(s):** _____

Please provide a brief description of your *previous* sabbatical project:

n/a

Sabbatical Leave Period Being Requested

Dates: **Beginning Date** 01/2023 **Ending Date** 05/2023

Length: ☑ One semester ☐ Two semesters ☐ Other _____

Applicant's Agreement

ABSTRACT

Please give a summary description of the project and its significance in improving teaching and learning at Collin College. Please use language that can be readily understood by persons in areas of expertise other than your own. **PLEASE DO NOT EXCEED SPACE PROVIDED BELOW.**

Study after study has shown that active, cooperative learning (or student-centered), practices in the classroom improve student outcomes. (Kyndt, et. al., 2013). A 2019 study at Harvard concluded that even when students think they learned better with a traditional lecture style presentation of material, assessments (measurement) showed they learned more when they had engaged in active learning exercises (Delauriers, et. al., 2019). Students in my own classes have asked for more active learning exercises, reporting they perceive they have learned a lot from them and the cooperative learning has kept them engaged in the course. The learning activities/exercises, however, must have a particular structure in order to successfully improve student outcomes (Loh and Ang, 2020). Unstructured activities do not provide the same advantages (Pai, et. al., 2015).

My project would focus on creating a catalog of detailed, active learning exercises, assessment tools and rubrics that could be used for various topics covered in the four courses in our Sociology Field of Study at Collin College. The exercises would all include specific assessment methodology allowing for direct measurement of course and module level student learning outcomes as well as program level outcomes. The exercises would be adaptable to both on campus and online course modalities which would be a key component of this project. Ultimately, this project would result in a catalog of resources for faculty in their individual courses, and on a district level to have shared measurement tools for core objective and program level assessment.

Description of the Project

Study after study has shown that active, cooperative learning (or student-centered), practices in the classroom improve student outcomes. (Kyndt, et. al., 2013). A 2019 study at Harvard concluded that even when students think they learned better with a traditional lecture style presentation of material, assessments (measurement) showed they learned more when they had engaged in active learning exercises (Delauriers, et. al., 2019). Students in my own classes have asked for more active learning exercises, reporting they perceive they have learned a lot from them and the cooperative learning has kept them engaged in the course. The learning activities/exercises, however, must have a particular structure in order to successfully improve student outcomes (Loh and Ang, 2020). Unstructured activities do not provide the same advantages (Pai, et. al., 2015).

In 2018, the THECB approved a Sociology Field of Study (FOS) which was subsequently approved at Collin College. The Field of Study includes four courses: Introduction to Sociology (Soci1301), Social Problems (Soci1306), Marriage and Family (Soci2301) and Minority Studies (Soci2319). Both Introduction to Sociology and Social Problems are in Collin's General Education Core Curriculum. In 2021, the Sociology department faculty started working on a plan for program review, associated with the FOS, which included program level learning outcomes.

My project would focus on creating a catalog of detailed, active/cooperative learning exercises that could be used for various topics covered in the four courses in our Sociology Field of Study at Collin College. The cooperative learning exercises would all include the following elements:

1. Detailed instructions on implementing the exercise in both online and face-to-face classroom environments. The exercise would be developed/modified using current recommendations and best practices found in cooperative learning research.
2. In Soci 1301 Introduction to Sociology and Soci 1306 Social Problems, the exercises would be mapped to the Core Objectives of Critical Thinking, Communication, Empirical and Quantitative Skills and Social Responsibility.
3. Specific assessment methodology allowing for direct measurement of course and module level student learning outcomes as well as program level outcomes. Thus, the exercise would be mapped to one or more of the learning outcomes for the course.
4. A rubric to be used when evaluating student responses for each assessment. The rubric would be mapped to the rubrics used by COAT.

The final product would be a catalog of detailed exercises, assessment tools and rubrics that could be utilized by any Sociology faculty member to improve the learning outcomes for students in our courses. This catalog could be revised and added to over time as needed.

Summary Timetable

Weeks	Topic/Course
1 -3	Review of most recent research on active/cooperative learning and student centered pedagogy (2019-2021). Specific Journals: Active Learning in Higher Education, Teaching Sociology, Research in Social Sciences and Technology Additional scientific articles and Teaching and Learning resources outside of these journals as well.
3-6	Create and catalog exercises and measurement tools and rubrics for **Soci 1301 Introduction to Sociology.** Topics to be included: Sociological research and methodology, Sociological Imagination, Culture, Socialization, Social Interaction, Groups and Organizations, Social Class, Gender, Race and Ethnicity, Institutions
7-9	Create and catalog exercises and measurement tools and rubrics for **Soci 1306 Social Problems** Topics to be included: Claims Making, Economic Inequality, Sexuality, Aging, Crime, Violence and Criminal Justice, Physical and Mental Health, Social Media, Family, Education
10-12	Create and catalog exercises and measurement tools and rubrics for **Soci 2301 Marriage and Family** Topics to be included: Gender, Dating, Love, Marriage, Divorce, Remarriage, Conflict Resolution, Communication
13-15	Create and catalog exercises and measurement tools and rubrics for **Soci 2319 Minority Studies** Topics to be included: Assimilation and Pluralism, Prejudice and Discrimination, Slavery, Racial and Ethnic Groups in the United States, Gender, Sexuality, Education

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Loh, R.C.Y., & Ang, C. S. (2020). Unraveling cooperative learning in higher education: A review of research. *Research in Social Sciences and Technology*, 5(2), 22-39. doi.org/10.46303/ressat.05.02.2

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Swanson, E., McCulley, L. V., Osman, D. J., Scammacca Lewis, N., & Solis, M. (2019). The effect of team-based learning on content knowledge: A meta-analysis. *Active Learning in Higher Education*, *20*(1), 39–50.

Reading List

Barkley, Elizabeth. (2014). Collaborative Learning Techniques: A Handbook for College Faculty, 2nd edition. San Francisco: Jossey-Bass.

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Fisher, R., Perényi, Á., & Birdthistle, N. (2021). The positive relationship between flipped and blended learning and student engagement, performance and satisfaction. *Active Learning in Higher Education*, *22*(2), 97–113.

Geertshuis, S. A. (2019). Slaves to our emotions: Examining the predictive relationship between emotional well-being and academic outcomes. *Active Learning in Higher Education*, *20*(2), 153–166.

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Henderson, M., Ryan, T., Boud, D., Dawson, P., Phillips, M., Molloy, E., & Mahoney, P. (2021). The usefulness of feedback. *Active Learning in Higher Education*, *22*(3), 229–243.

Hermida, Julian. (2015). Facilitating deep learning: pathways to success for university and college teachers. Oakville, ON: Apple Academic Press.

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Luna, Y. M., & Winters, S. A. (2017). "Why Did You Blend My Learning?" A Comparison of Student Success in Lecture and Blended Learning Introduction to Sociology Courses. *Teaching Sociology*, *45*(2), 116–130.

Micari, M., & Calkins, S. (2021). Is it OK to ask? The impact of instructor openness to questions on student help-seeking and academic outcomes. *Active Learning in Higher Education*, *22*(2), 143–157.

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Vahedi, Z., Zannella, L., & Want, S. C. (2021). Students' use of information and communication technologies in the classroom: Uses, restriction, and integration. *Active Learning in Higher Education*, *22*(3), 215–228.

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Name Shawna Masters **CWID** 100008084

Title Professor of Mathematics **Division** Academic Affairs, Mathematics

Have you ever been granted a sabbatical? No **If yes: Dates of Prior Sabbatical(s):** _____

Please provide a brief description of your *previous* sabbatical project:

Never been granted a sabbatical.

Sabbatical Leave Period Being Requested

Dates: **Beginning Date** August 2022 **Ending Date** December 2022

Length: ☑ One semester ☐ Two semesters ☐ Other _____

Applicant's Agreement

ABSTRACT

Please give a summary description of the project and its significance in improving teaching and learning at Collin College. Please use language that can be readily understood by persons in areas of expertise other than your own. **PLEASE DO NOT EXCEED SPACE PROVIDED BELOW.**

As district course coordinator for MATH1324 Mathematics for Business and Social Sciences, I am regularly looking for real world examples and applications that will help students in MATH1324 see the usefulness of the mathematics they are required to learn. In 2018, I attended a mathematics conference session titled Spreadsheets for Quantitative Reasoning, presented by Dr. Eric Gaze of Bowdoin College. I was intrigued by the idea of incorporating Microsoft Excel in mathematics courses to help our students improve their mathematical reasoning skills. Since using spreadsheets is common in business fields, integrating spreadsheets seemed to be most beneficial for our business field of study students taking MATH1324.

I began exploring information provided in Dr. Gaze's presentation along with other resources about using spreadsheets in mathematics and quickly realized my Excel knowledge is lacking. This sabbatical would allow me to improve my Excel knowledge, research mathematics lessons utilizing spreadsheets, and develop meaningful MATH1324 lessons and assignments that incorporate spreadsheets. Collin College students will benefit by using technology applicable to their future careers which should improve motivation and understanding of course content.

Sabbatical Leave Plan: Fall 2022
Shawna Masters, Professor of Mathematics

A. Research Plan

As district course coordinator for MATH1324 Mathematics for Business and Social Sciences, I am regularly looking for real world examples and applications that will help students in MATH1324 see the usefulness of the mathematics they are required to learn. In 2018, I attended a mathematics conference session titled *Spreadsheets for Quantitative Reasoning,* presented by Dr. Eric Gaze of Bowdoin College. I was intrigued by the idea of incorporating Microsoft Excel in mathematics courses to help our students improve their mathematical reasoning skills. Since using spreadsheets is common in business fields, integrating spreadsheets seemed to be most beneficial for our business field of study students taking MATH1324.

I began exploring information provided in Dr. Gaze's presentation along with other resources about using spreadsheets in mathematics and quickly realized my Excel knowledge is lacking. I have basic spreadsheet skills acquired from keeping my gradebook and tracking my home mortgage, but very little practice related to algebra-based mathematics as seen in most mathematics courses taught at Collin College. This sabbatical would allow me to improve my Excel knowledge, research mathematics lessons utilizing spreadsheets, and develop meaningful MATH1324 lessons and assignments that incorporate spreadsheets. Additionally, I would like to collaborate with colleagues and to share my findings by providing faculty development.

Research indicates students who use spreadsheets in their mathematics courses increase their understanding of algebra-based course content (Marley-Payne & Dituri, 2019), improve critical thinking skills (Cahill et al., 2018), and improve communication skills (Gaze, 2015). Collin College students will benefit by using technology applicable to their future careers which should improve motivation while addressing core objectives for our mathematics courses.

MATH1324 State-mandated Outcomes: Upon successful completion of this course, students will:

1. Apply elementary functions, including linear, quadratic, polynomial, rational, logarithmic, and exponential functions to solving real-world problems. (Critical Thinking, Communication Skills)
2. Solve mathematics of finance problems, including the computation of interest, annuities, and amortization of loans. (Critical Thinking, Empirical/Quantitative Skills)
3. Apply basic matrix operations, including linear programming methods, to solve application problems. (Critical Thinking, Communication Skills)
4. Demonstrate fundamental probability techniques and application of those techniques, including expected value, to solve problems. (Critical Thinking, Empirical/Quantitative Skills)
5. Apply matrix skills and probability analyses to model applications to solve real-world problems.

Thank you for reviewing my application.

B. Summary Timetable

Summer 2022

- Explore possible mathematics conferences offering sessions related to using spreadsheets
- Explore possible online Microsoft Excel courses or tutorials

August 2022

- Improve Microsoft Excel knowledge by completing online Microsoft Excel courses or tutorials
- Begin research into using spreadsheets in college mathematics courses by reading articles, books, and exploring online resources

September - October 2022

- Continue improving Microsoft Excel knowledge
- Continue research into using spreadsheets in college mathematics courses by reading articles, books, and exploring online resources
- Begin applying spreadsheets to MATH1324 curriculum and developing MATH1324 lessons and assignments incorporating spreadsheets

November – December 2022

- Continue developing MATH1324 lessons and assignments incorporating spreadsheets

Spring 2023

- Incorporate new lessons and assignments into spring MATH1324 course

C. Bibliography

Baker, J. & Sugden, S. (2003). Spreadsheets in education –The first 25 years. *eJournal of Spreadsheets in Education. 1*(1). https://sie.scholasticahq.com/.

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Gaze, E. (2015). Addressing the skills gap for students and young adults. *Diverse Issues in Higher Education Magazine*. Retrieved December 6, 2021, from http://diverseeducation.com/article/76145/.

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Shi, Y. (2005). Building math confidence in classroom learning using microsoft excel. *Online Journal for Workforce Education and Development*, *1*(2). Retrieved November 24, 2021, from https://opensiuc.lib.siu.edu/ojwed/.

Tyrrell, S. (2006). Introducing "Excel." *Mathematics Teaching Incorporating Micromath*, *194*(1), 16–17.

Wagner, G. (2006). Excel exercises for first-year engineering students. *Teaching Mathematics and Its Applications: An International Journal of the IMA*, *25*(3), 109–119. https://doi.org/10.1093/teamat/hri013

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D. Resources

No additional resources or agreements with other organizations will be used for this project.

Collin County Community College District
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Name Luke Sides CWID 110618566

Title Professor of Art Division Academic Affairs

Have you ever been granted a sabbatical? ☐ If yes: Dates of Prior Sabbatical(s): _____

Please provide a brief description of your *previous* sabbatical project:

Sabbatical Leave Period Being Requested

Dates: Beginning Date August 2022 Ending Date December 2022

Length: ☑ One semester ☐ Two semesters ☐ Other _____

Applicant's Agreement

ABSTRACT

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Digital Fabrication has become an integral part of sculptural practices. 3D printers, CNC machinery and laser cutters are the tools used in digital fabrication and while they are complicated to learn to run the real issue is creating sculptures in a digital format. I have incorporated digital fabrication in all my 3D Design and Sculpture classes at a rudimentary level. Students can manipulate simple objects and models found online but are unable to create a sculpture digitally. Much of the software used is more editing software and not sculpting software.

The Plan for the project is to learn about how to use the sculpting software so I can then teach our students how to create a sculpture from a virtual ball of clay. This would be a threefold process. First, I would like to learn how to use ZBrush. Zbrush is one of the predominant software used in the creation of digital sculptures and is the software I would like to learn for this project. Learning how to use this software will enable me to navigate many of the other sculpting software's. I would also like to familiarize myself with another software Blender that is free and will ultimately be the software students will utilize. The other software I would like to familiarize myself with is Fusion 360. Currently we are using unsupported Autodesk Software Meshmixer, and Slicer for Fusion 360 and I fear these could be discontinued. Fusion 360 has all the capabilities of Meshmixer and Fusion 360 and so much more and is the industry standard for digital Fabrication. The second phase of this project is to learn how to operate three to five axis CNC routers. This would round out our digital fabrication needs at Collin. This would allow students to digitally create larger scale sculptures and would allow them to use traditional materials as the finished product. The last phase of the project would be for me to put all these skills into action. I have been invited to participate in an artist in residency at Fort Hays State University in Hays, Kansas. I will be collaborating with Tobias Flores in the creation of sculptures using the above techniques. I will also attend a residency at the Carrie Furnaces in Pittsburgh Pennsylvania.

Collin College
Sabbatical Leave Proposal
Professor Luke Sides Professor of Art

Objectives and Rationale:

Digital Fabrication has become an integral part of sculptural practices. 3D printers, CNC machinery and laser cutters are the tools used in digital fabrication and while they are complicated to learn to run, the real issue is creating sculptures in a digital format. I have incorporated digital fabrication in all my 3D Design and Sculpture classes at a rudimentary level. Students can manipulate simple objects and models found online but are unable to create a sculpture digitally. Much of the software used is more editing software and not sculpting software.

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Timetable

August -September: begin classes on Zbrush 3D modeling Software

October: Begin classes on Fusion 360 3D CAD software

Attend Fort Hays State University Artist in Residency

November: Continue Classes on Zbrush and Fusion 360

Attend Carrie Furnaces Artist-in-Residency

December: Complete projects created at residencies.

Bibliography:

Zbrush (Computer Software). (2021). Retrieved from https://pixologic.com/get-zbrush/

Fusion 360 (Computer Software). (2021). Retrieved from https://www.autodesk.com/products/fusion-360/overview

Blender (Computer Software). (2021). Retrieved from https://www.blender.org/download/

Meshmixer (Computer Software). (2018). Retrieved from https://www.meshmixer.com/download.html

Slicer for Fusion 360 (Computer Software). (2020). Retrieved from https://knowledge.autodesk.com/support/fusion-360/downloads/caas/downloads/content/slicer-for-fusion-360.html

Resources:

Tobias Flores- Fort Hays State University, Hays, KS.

Andrew Scott-University of Texas Dallas, Richardson, TX.

Ed Parrish-Carrie Furnaces, Homestead, PA.

Kurt Dyrhaug-Lamar University, Beaumont, TX.

Marshall Pittman- Collin College, Plano, TX.