Poster 198, 22nd Symposium on Education



Introduction



Madison Area Technical College is part of the Wisconsin Technical College System and is accredited by the Higher Learning Commission (HLC). It offers more than twelve dozen career programs as well as College Transfer classes. Enrollment, including degree students and other students, wisconsin Fort Atkinson Waukeesa Blackhawk Monroe Blackhawk Monroe Blackhawk Kenosha Monroe Kenosha K

Madison Area Technical College has a College Credit Transfer program wherein credits transfer easily to University of Wisconsin campuses – both to the flagship campus in Madison and to UW campuses in Milwaukee, Green Bay, Oshkosh, Eau Claire, etc – wherever a like class is taught. Credits earned for this "Climate & Climate Change" class, developed for Madison Area Technical College, will transfer directly to the UW-Madison, where the same course will be taught by Steve Ackerman in Spring 2013. Climate & Climate Change class credits can also transfer as general science class credits.

Class Design

Two 15-week classes were offered: one was entirely online, the second was a 'hybrid' class wherein content was presented online, with 50-minute face-to-face class meetings each week with group discussion and guest speakers.

Because instructional support and curriculum development was funded by a NASA grant, tuition was not charged for the class; in order to attract only motivated students, we required a short sentence stating their motivation for taking the class as a condition for enrollment. Interestingly, the class format had no discernible influence on the learning outcomes of the students.

The class included readings from various peer-reviewed journals, and this was problematic for some students who struggled with jargon and the level of math.

The class had no educational prerequisites, and enrolled students had a variety of skill levels. Some students had very little scientific background, others had taken Weather and Climate (an introductory class at Madison College) and done well.

A syllabus is available upon request.

HYBRID AND ONLINE CLIMATE INSTRUCTION AT MADISON AREA TECHNICAL COLLEGE

Scott S. Lindstrom¹, Matthew A. Lazzara¹, Monica K. Harkey¹, Susan E. Lynds²

¹Madison Area Technical College, Madison, Wisconsin ²University of Colorado at Boulder, Boulder Colorado



Internships

One student from the Hybrid class and one student from the Online Class worked as interns for Madison Gas and Electric; they reported on the availability of an electric car charging station located at Madison College and documented the use of other Charging Stations around Madison



Future Plans



Some students were put off by the lack of a book. We have used grant funds to purchase copies of Michael Mann's book *Dire Predictions* for future Climate & Climate Change classes. This book is intended to help introduce meteorological and limatological terminology to the students as well as to familiarize them with key concepts.

The online version of the class suffers from a lack of discussion time. Although this can be addressed in some ways by online discussions (written), a more interactive and ynchronous discussion – such as those allowed in Google Hangouts – may be used in Spring 2013.

Students had notable difficulties with the terminology that percolates through some of the technical readings that were assigned. As a result, student feedback has been used to develop a Glossary of Terms. This glossary includes both Meteorological Phrases – such as ENSO – and scientific words like hysteresis and bifurcation that students were unfamiliar with to the extent that they interfered with comprehension.

Acknowledgements/Contact Information

Curriculum development and instructional support was provided by NASA/NICE grant NNX11AL99A **Please contact the authors below to discuss or receive** any information discussed in this poster

> Scott S. Lindstrom Matthew A. Lazzara Monica K. Harkey Susan E. Lynds



ulled just as much power as Greenway Station - 414.856 kWh or 12% of total kWi

slindstrom@madiscollege.edu mlazzara@madisonncollege.edu harkey@madisoncollege.edu susan.lynds@colorado.edu