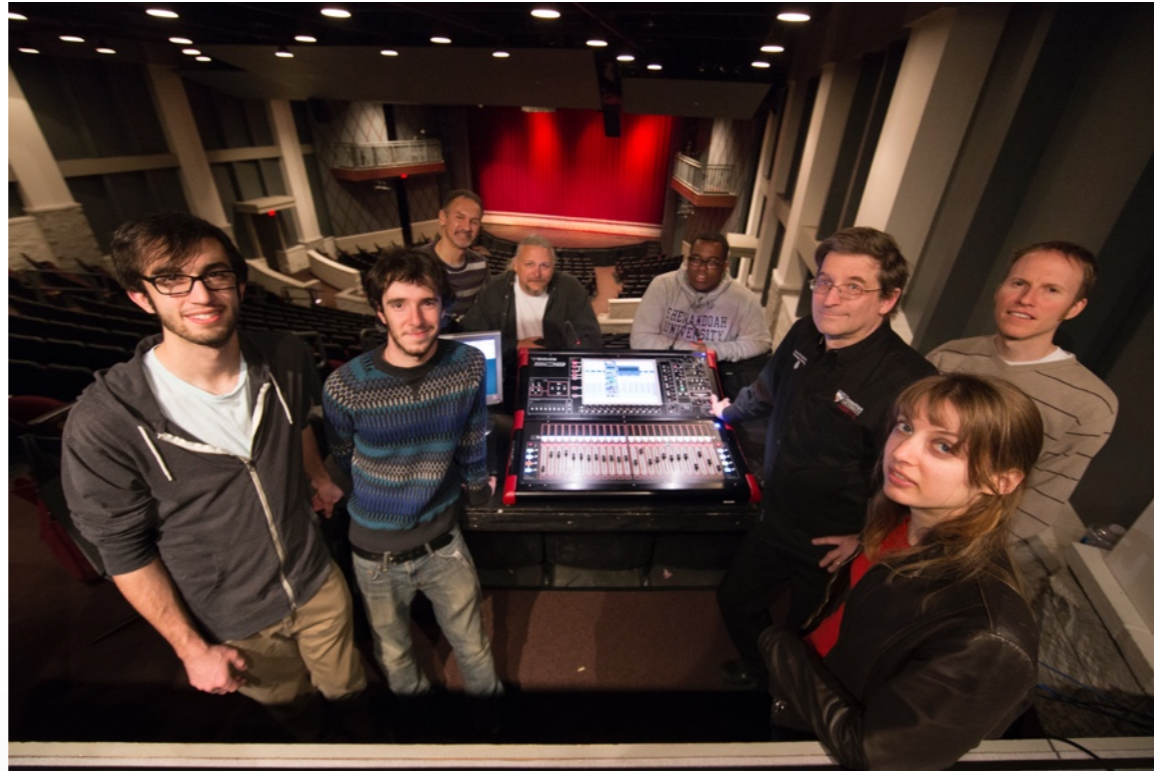


Music Production & Recording Technology



Music Production & Recording Technology

Shenandoah University Winchester VA

Shenandoah University is a private, nationally recognized applied liberal arts university that invites students to join a close-knit community rich in creative energy. In our dynamic academic community, curious, and academically prepared students connect with accomplished professors; engage in small, highly interactive classes; apply what they learn in a variety of experiences outside the classroom; and expand their understanding and perspectives by being involved in global initiatives.

The **Music Production & Recording Technology** Program, in which students learn how to produce and record commercial music, is one of Shenandoah's flagship programs for its use of technology. Thanks to Apple and Shenandoah University's iMLearning initiative, all faculty and incoming students are provided with a MacBook Pro and their choice of iPad or iPad mini. These devices help to make learning a personal experience for each and every student in the M.P.R.T Program and give students hands-on experience with the technology they will encounter in the industry.



Visionary Leadership

Shared Leadership

School leaders strive to harness the power of technology to facilitate greater learning.

Individual Leadership

Credible and inspirational Professors set and articulate the vision.

Community Engagement

Broad community sponsorship supports the institution's initiatives.

Shared Leadership

Thanks to the iMlearning initiative, Shenandoah University has achieved a universal computing and learning environment. Students and faculty are able to further advance and refine teaching and learning methods both inside and outside the classroom. Having the technology to face the tasks at hand has paved the way for a deeper kind of learning and exchange of information between teachers and students.

Individual Leadership

Shenandoah University Professors Golder O'Neill and Adam Olson have each been largely instrumental in the development of SU's MPRT program. Both professors are avid supporters of Apple products, and both agree that the program would not be where it is today without them.

Community Engagement

Shenandoah University enjoys a supportive relationship with the local community. Most MPRT students are routinely involved in community activities, gladly offering their services to local

Student - Michael Mason: Shenandoah Summer Music Theatre (SSMT) 2015



Michael discusses the advantages of using the iPad in the theatre for live sound reinforcement purposes.

studios, churches, and concert venues. A great example is Michael Mason's role in the SSMT.

In the future, the MPRT program is planning to offer students bundled software for the MacBook Pro. We are currently working with our IC department to prepare for this endeavor. This past year, our Studio Systems, Maintenance & Networking class worked closely with IC to unlock certain features on the MacBook Pro. This allowed students to change things in the system software to do networking and collaborate with one another on the MacBook Pro.

Early Beginnings: MPRT Program

MPRT Program Director Golder O'Neill recalls, "When this program started, all we had to work with was analog tape!" He can remember a time when the Ruebush Midi Lab only had six Compaq computers to work with. Most students in the current MPRT program would find that fact very hard to believe. Professor O'Neill can also remember the numerous complaints he used to receive about those computers. O'Neill recalls, "Students were always complaining that the computers weren't working in the lab." One morning, Professor O'Neill decided to call the Institutional Computing department in an attempt to resolve the issue. During the course of that conversation, it was decided that Institutional Computing would provide a handful of Macintosh computers as replacements for the ones that were having issues. Professor O'Neill claims, "I've had no problems since then!" In the years following, the Ruebush Midi Lab has accumulated a plethora of both analog and digital equipment that students use on a daily basis to explore their craft. At the heart of each midi lab station, you'll find an Apple iMac, which is the one thing that has remained the same throughout the years since then.



Current Changes and Improvements

The MPRT Program is continuing to press forward as the Fall 2016 semester approaches. We are now able to offer our students Pro Tools classes as a part of the MPRT curriculum. Students enrolled in Pro Tools I and Pro Tools II classes will learn the skills necessary to operate **Pro Tools** and obtain their **Pro Tools certifications**. This certification makes our students even more competitive in the recording industry, which is of paramount importance to the department. We have also been able to branch out and offer a **Sibelius** certification course, which is a huge advantage for the Conservatory's Music Composition students as well as students enrolled in the MPRT Program. Pro Tools and Sibelius are just two of many applications that students will encounter in the MPRT Program. Students will use **GarageBand**, **Logic**, **Cubase**, **Nuendo**, **Finale**, **Reason**, and a whole host of other applications. Students have 24/7 unrestricted access to these applications thanks to the iMLearning Program. They have access to one-on-one learning environments like the Ruebush Mac Lab as well as the ability to work on their own outside of the classroom on their MacBook Pro laptops.

Innovative Learning and Teaching

Student Learning

Small class sizes help make learning a personal experience for every student.

Instructional Practices

Faculty are always refining their technological skills to improve the process of teaching and learning.

Curriculum Design

Innovative and rigorous curriculum is designed to leverage technology.

Student Learning

Students in the SU MPRT Program are encouraged to bring their Apple devices into the classroom. Students can often be seen using them to take notes, do research, participate in classroom polls, and take tests. Outside of class, students use their Apple devices to communicate with professors and record on-location performances of students and faculty. Today's learners are collaborative learners. Having the same computing devices facilitates group work, making study time more experiential and resulting in deeper learning.

Instructional Practices

Faculty at SU strive to maintain the foremost level of mastery when it comes to teaching students in the classroom. With the support of iMLearning devices, MPRT faculty are able to give presentations that walk students through complex application tasks and real world scenarios that students will encounter in the industry. The goal is an enhanced learning experience, and that is achieved through the power of technology.

Golder O'Neill: MPRT Program Director



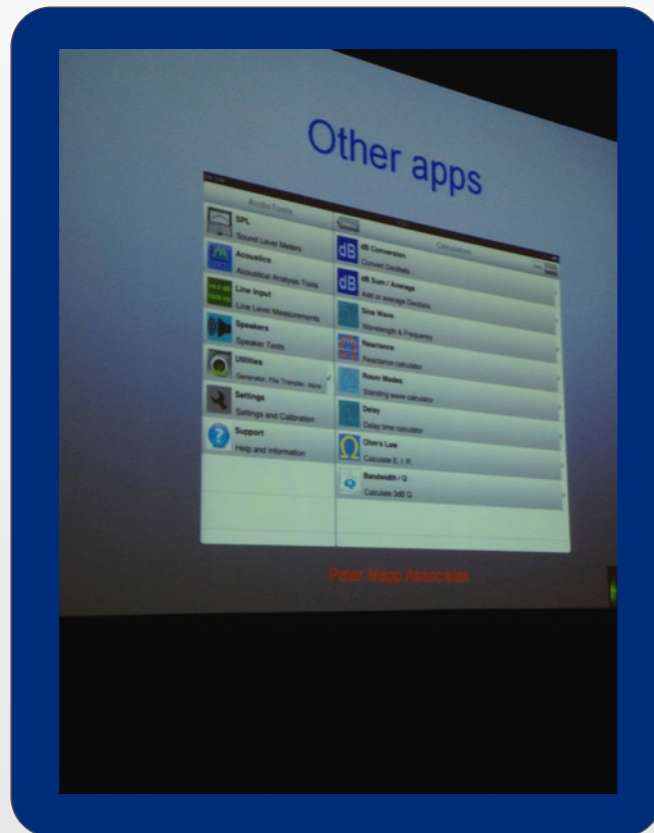
Golder O'Neill speaks about the advantages of the iMLearning Program and student expectations.

Curriculum Design

The MPRT Program curriculum is designed to give students the tools necessary to go into any real world situation and excel. Technology is such a large part of what we do here at SU that students learn how to use technology as a springboard for success. MPRT students will use their Apple products to: give presentations, record university performances, research and write papers, and much more. It is safe to say that without technology, this program simply would not exist!

2012 Audio Engineering Society (AES) Convention

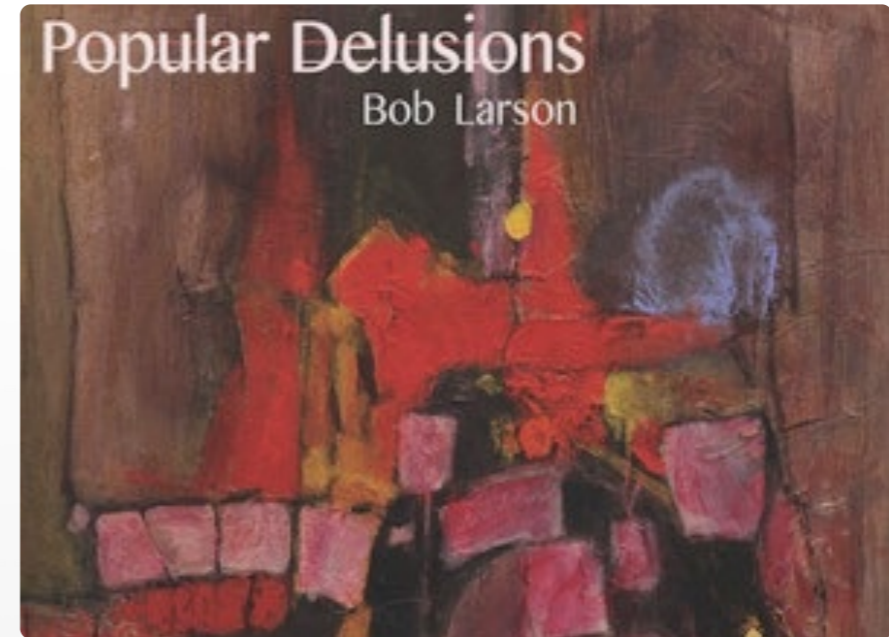
Professors O'Neill and Olson attended the 2012 AES Convention in San Francisco, CA where they participated in many workshops. One of these workshops presented information regarding Acoustic and Audio iPhone Apps. The chair of the workshop was Peter Mapp. The workshop reviewed and discussed a range of audio and acoustic apps that are available for the iPhone, iPad, and other smartphones. Both measurement and calculation apps were presented and discussed reviewing current apps along with their uses and limitations.



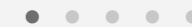
Recent Faculty Achievements

Within the MPRT Program, faculty members are always pushing to refine their technological skills. Below are a few examples of some of the amazing things our professors have been able to accomplish recently.

Professor Golder O'Neill recently engineered and produced Harrison Endowed Chair in Piano and Associate Professor of Jazz Piano Dr. Robert Larson's album entitled, "**Popular Delusions**," which was all recorded and mixed on a Mac using Pro Tools. The album was created in collaboration with Auxiliary Adjunct Associate Professor of Jazz and Trumpet Craig Fraedrich, M.M., (trumpet and flugelhorn); Adjunct Associate Professor, Classical and Jazz Trombone Matt Niess, D.M.A., (trombone), Adjunct Lecturer of Jazz Saxophone Luis Hernandez, B.A., (tenor saxophone); Paul Henry (bass); and Carroll "CV" Dasheill III (drums). Professor O'Neill teamed up with Adjunct Assistant Professor of Music Production and Recording Technology Dan Shores, who mastered the album. Dan Shores graduated with the Shenandoah class of 99' with a B.M. in Music Production and Recording Technology. Shores currently works for the Grammy Award-winning Music Label **Sono Luminus**, based in Boyce, VA along with fellow Shenandoah graduate and Grammy Award-winning producer Dan Mercurio.



Popular Delusions: Album Artwork



"Popular Delusions" is also the first album to be released by Shenandoah Conservatory's premier record label, **Swarm Music Group**. Managed by students under the supervision of Distinguished Adjunct Assistant Professor of Music Production & Recording Technology (MPRT) Paul DiFranco, Swarm Music Group was established to promote music throughout the conservatory with a particular focus on artists within the university (faculty, staff, students), as well as guest artists associated with the university. Additional Shenandoah Conservatory faculty advisors work with students to offer publishing and promotion for the artists' original music.

Recent Faculty Achievements Cont.

Adjunct Professor of Music Production and Recording Technology Mike Sokol is a reviewer of software and hardware audio. He has been a contributing editor for magazines such as Church Productions, EQ, Electronic Musician, and Mix, as well as a technical consultant to Apple Computer and Microsoft. Professor Sokol recently gave his “NoShockZone” presentation at the 2015 Audio Engineering Society (AES) Convention in New York. Sokol was also the Chair for the convention’s Live Sound Seminar “AC Power and Grounding,” which many of Shenandoah’s MPRT students attended. Professor Sokol can frequently be seen typing up product reviews on his MacBook Pro. He never misses an opportunity to encourage his students to seek publication, and, in the future, he has plans to do more than just encourage his students. Professor Sokol is planning to offer a seminar in the future to teach students how to write reviews and articles for magazines. Many students not only have an interest in this class, but they also have the aid of Apple technology at their disposal. Professor Sokol recently taught a Surround Sound seminar where each student was given a unique challenge that involved applying his/her cumulative knowledge of material covered during the course of the semester. These student projects were all mixed in the surround sound format using Logic and were from there DTS encoded and handed in for review.



These projects ranged from recording live ensembles using surround miking techniques to immersive theatre of the mind that involved manipulating sound in such a way as to make the listener the centerpiece of a 360 degree theatrical performance. These projects put the students in a position where they were forced to push the boundaries of not only what they were capable of creating but also the boundaries of the technology at their disposal. Students were able to work independently outside of the classroom and bring their creations back into the classroom setting to get feedback from their professor and their peers. This type of quality learning would not have been possible without the help of Shenandoah University’s iMLearning initiative and such a visionary professor!

Ongoing Professional Learning

Relevant and Timely Professional Development

Faculty engage in a cycle of inquiry that promotes reflection, experimentation, and sharing.

Faculty members rely on industry professionals to help encourage professional development.

Finding new and creative ways to utilize technology in the classroom is of key importance.

Relevant and Timely Professional Development

Shenandoah University has long supported a culture of instructional technology professional development. In 2012, the Center for Teaching and Learning (CTL) hosted a regional conference “The Metamorphosis of Higher Ed: mobile technologies to support new teaching paradigms.” Shenandoah’s CTL also supports a “Technology Liaisons” Committee. These are faculty who are paid a stipend to meet monthly during the school year to share knowledge and best practices with respect to instructional technology. MPRT’s Adam Olson led one of these sessions on AppleScript and ways to automate workflows. Every August, the CTL hosts a 2 day “Course Design Academy” for new faculty and experienced faculty who want to polish their courses. Instructional technology, particularly collaborative technologies and the creation of digital artifacts, is stressed in this workshop. Additionally, the CTL publishes a monthly newsletter that contains articles on pedagogy and instructional technology. Institutional

Computing publishes weekly “Tips and Tricks” to help users develop their technical proficiency. Below is a list of workshops offered to the campus community over the past 18 months that are specific to Shenandoah’s Apple infrastructure:

5/12/14	iPads in the Classroom (CTL)
5/14/14	iPads in the Classroom (CTL)
5/15/14	iPads in the Classroom (CTL)
7/18/14	Digital Scholarship/iPads in the Classroom (Apple)
9/3/14	iPads and AirServer (Apple)
9/19/14	iBooks Author and e-Publishing (Apple)
9/19/14	Apple Distinguished Educator Program (Apple)
9/23/14	iPads in the Classroom (CTL)
11/5/14	Applescript Automation (Adam Olson)
5/14/15	iPads in the Classroom (CTL)
6/10/15	iBooks Author (Apple)
6/10/15	Apple Distinguished Educator Program (Apple)

Compelling Evidence of Success

Research Practices

Course Evaluation Surveys allows us to measure the success of technology in our program.

Student learning is being supported by the technology we offer here at SU.

iOS in the MPRT Classroom

As part of the MPRT Course Evaluation Survey, students are asked to rate several statements that allow faculty to measure the effectiveness of technology in the classroom. These statements are based on the Likert Scale 1 (Strongly Disagree) to 5 (Strongly Agree). One of the questions reads as follows: "If technology was used to support instruction in this class, it was effective in supporting my learning." To the right is a chart outlining student responses to that question from 2013-2015. Clearly, our students are benefitting from having Apple mobile technology in the classroom here at SU.

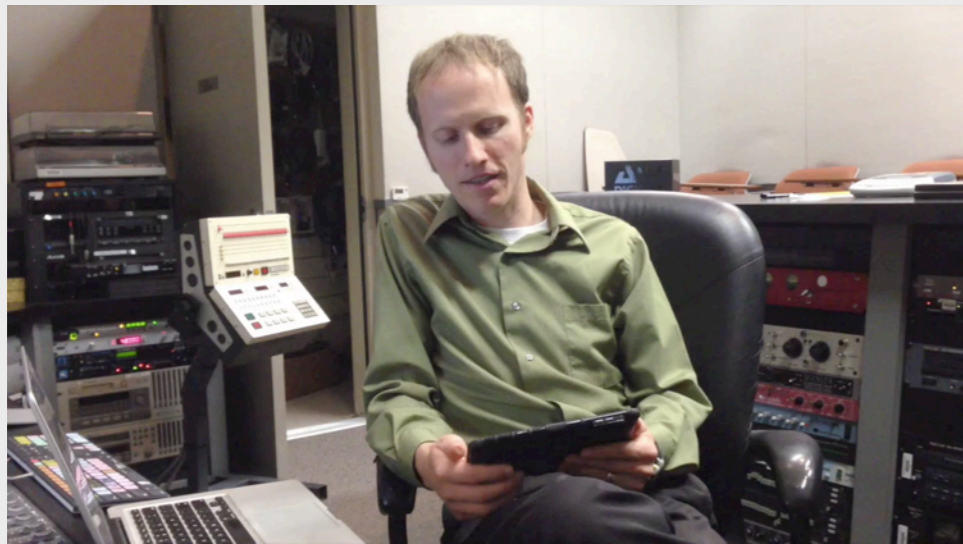


MEAN BASED ON (LIKERT SCALE 1-5):		
COURSE	TERM	MEAN
Pro Tools I	Fall 2014	4.65
Pro Tools II	Spring 2015	4.90
Record Systems: Design/Application I	Fall 2013	4.50
Record Systems: Design/Application II	Spring 2013 Spring 2014 Spring 2015	4.76 4.64 4.33
Sound Reinforcement	Spring 2013 Spring 2014 Spring 2015	4.33 4.70 4.60
Remote Recording Practicum	Spring 2013 Fall 2013 Spring 2014 Spring 2015	4.56 4.43 4.60 5.00
Sound Reinforcement Practicum	Fall 2013 Spring 2015	5.00 4.57
Studio Maintenance & Workflow	Spring 2013 Spring 2014 Spring 2015	4.75 4.33 4.73
Music Production I	Fall 2014	4.50
Music Production II	Spring 2015	4.20

A Positive Influence

Students in SU's MPRT Program benefit from having great examples of what it is to really utilize the technology at their fingertips. Our faculty members are always pushing the bar with regard to how Apple devices can be used inside and outside the classroom. SU MPRT Assistant Professor Adam Olson is one of those faculty members who is always discovering new ways to utilize this technology.

Adam Olson: SU MPRT Instructor



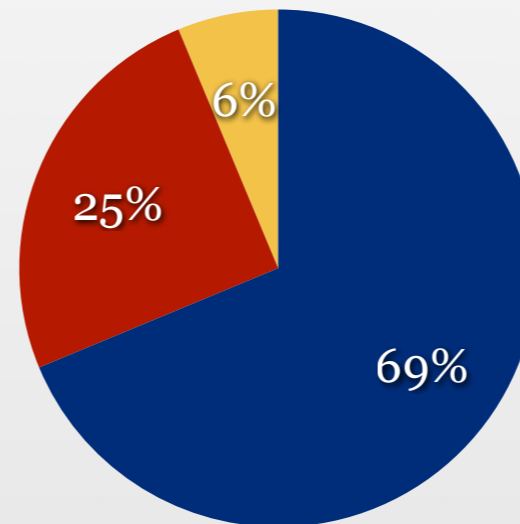
Adam discusses how he utilizes Apple technology inside and outside the classroom.

Student Success

In the summer of 2015, students were asked to complete an anonymous survey. The aim of this survey was to poll students in the MPRT program and alumni specifically about the use of Apple technology in the MPRT program. 75% were current students, and 25% were graduates. The results of that survey are as follows:

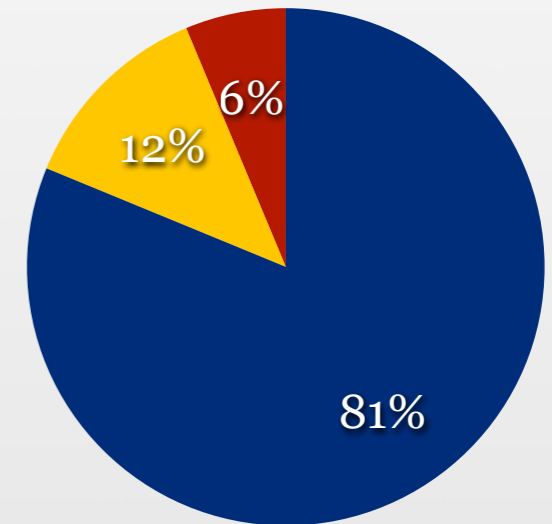
1. Macbooks and/or iPads are/were used creatively in the classroom.

● Agree Strongly
● Agree Somewhat
● Agree



2. Being able to use MacBooks and iPads in the MPRT program have helped prepare me for my career.

● Agree Strongly
● Agree
● Disagree Somewhat



Student Success Cont.

Students were also asked as part of the survey to provide some personal feedback to two requests. Those two requests were as follows:

1. Please give an example of how having a MacBook or iPad was helpful to you in the MPRT program:
2. Please add any other comments about the use of technology in the MPRT program.

Student responses to statement 1:

“Having a MacBook allowed me to record, mix, and create music for classwork, as well as starting my own career and having paid work. Having an iPad was incredibly useful for buying digital books and using it for apps in Live Sound Reinforcement applications (mainly having an RTA going throughout entire performances).”

“I have used my Macbook to do on-location recordings for Remote Recording Practicum, and edit sessions I've recorded in the studio. I have used my iPad as a real time analyzer, guitar tuner, sample pad, control surface, and portable DAW. Both the MacBook and iPad are invaluable tools that I use each and every day in this program.”

“Being provided a Macbook when entering the program is of its greatest use in that we immediately have a place to download programs and software. It also means that every student is using Mac versions of all the programs that we use, which comes in handy for little things like having the same shortcuts and being able to communicate with each other about those things. They are also useful when working on documents that professors share with us. I remember countless times this past year that my fellow classmates and I sat around with all of our laptops and worked on assignments together.”

Student responses to statement 2:

“Having access to the best technology as MPRT students is essential, because our industry is one with extremely high standards. Working with Apple products allows us the opportunity to become familiar with industry standard equipment. That's a huge advantage for us.”

“Recording would not exist without technology, therefore its advances advance and enhance the creative palette available for engineers and musicians alike.”

“Technology is so much of what we do that it would be impossible to have an MPRT program without it.”

2014 National Survey for Student Engagement (NSSE) Data

SU participates annually in the NSSE survey. Part of this survey is a technology module where Shenandoah students are compared with peer institutions. A short summary of these findings is included below.

86% of First Year (FY) students and 85% of seniors report that technology contributed to their understanding of course materials and ideas. (Very much or quite a bit)

82% of FY students and 84% of seniors report that technology contributed to demonstrating their understanding of course content. (Very much or quite a bit)

87% of FY students and 90% of seniors report that technology contributed to learning, studying, or completing coursework on their own. (Very much or quite a bit)

74% of FY students and 77% of seniors report that technology contributed to learning, studying, or completing coursework with other students. (Very much or quite a bit)

74% of FY students and 71% of seniors report that their institution emphasizes teaching with new, cutting-edge technologies.

88% of FY students and 84% of seniors report that their institution provides technology to help them learn, study, or complete coursework.

75% of FY students and 83% of seniors report that their institution teaches them how to use available technologies to learn, study, or complete coursework.

The spreadsheet below shows how SU's mean scores compare to the Learning with Technology Comparison Group's mean scores.

**NSSE 2014 Technology Module
Comparison of SU scores vs. Learning with Technology Comparison Group**

2014 NSSE Questions	SU		Learning With Technology Group	
	First Year Mean	Senior Mean	First Year Mean	Senior Mean
During the current school year, how much has your use of technology contributed to: 1 = Very Little 2 = Some 3 = Quite a bit 4 = Very Much				
Your understanding of course materials and ideas?	3.3	3.3	3.2	3.3
Demonstrating your understanding of course content?	3.2	3.3	3.1	3.2
Learning, studying, or completing coursework on your own?	3.4	3.5	3.4	3.5
Learning, studying or completing coursework with other students?	3.1	3.2	2.8**	3.0*
Distracting you from completing your coursework?	2.6	2.7	2.7	2.5
During the current school year, how much have your courses improve your understanding and use of technology?	2.8	2.6	2.5***	2.6
During the current school year, about how often have you used the following technologies in your courses?	Mean	Mean	Mean	Mean
Electronic Textbooks?	2.0	2.0	2.1	2.1
Online portfolios or e-portfolios?	1.7	1.8	1.7	1.8
Blogs?	1.7	1.7	1.6	1.6
Collaborative editing software?	2.6	2.7	2.2***	2.3***
Multimedia software?	2.1	2.1	1.8***	1.9
Social networking?	2.4	2.4	2.1***	2.0***
Mobile computing (smartphones)?	2.7	2.6	2.4**	2.4*
During the current school year, about how often have you used technology to communicate with the following people?	Mean	Mean	Mean	Mean
1 = never, 2 = sometimes, 3 = often 4 = very often				
Students	3.5	3.6	3.4	3.5*
Academic Advisors	3.2	3.3	2.6***	2.7***
Faculty	3.2	3.4	2.8***	3.1***
Student services staff	2.6	2.6	2.2***	2.1***
Other administrative staff and offices	2.5	2.5	2.2***	2.3***
How much does your institution emphasize the following?	Mean	Mean	Mean	Mean
1 = Very Little 2 = Some 3 = Quite a bit 4 = Very Much				
Teaching with new, cutting edge technologies	3.0	2.9	2.6***	2.6***
Providing technology to help you learn, study, or complete coursework	3.4	3.2	2.8***	2.8***
Teaching you how to use available technologies to learn, study, or complete coursework	3.1	3.0	2.8***	2.7***
Providing support services to assist you with your use of technology	3.2	3.1	2.7***	2.6***

* Mean score for SU was significantly higher than comparison group at the p<0.05 level
 ** Mean score for SU was significantly higher than comparison group at the p<0.01 level
 *** Mean score for SU was significantly higher than comparison group at the p<0.001 level

Flexible Learning Environment

School Design and Facilities

Facilities and schedules are designed to maximize learning opportunities that technology provides.

Information Technology (IT)

IT infrastructure supports innovation in teaching and learning.

School Design and Facilities

By adopting the “ubiquitous computing model” students always have their course content and technology available, both inside the classroom and out. This both facilitates technology-enhanced instruction as well as allows for more collaborative work among students. Classrooms utilize Mac minis as podium computers and have Air Server installed, so that instructors can display content via the projection system wirelessly, freeing them to move about the classroom. This makes it easier for faculty and students to interact and helps to keep students engaged.

Information Technology (IT)

Training and support for faculty is provided through Institutional Computing and the Center for Teaching and Learning. New faculty are given instruction on using the iPad in the Classroom and instructional technology workshops are offered on a variety of topics throughout the year. The university employs an Apple Engineer and iMLearning Manager to ensure that Apple

Shenandoah University: Ruebush Mac Lab



The Ruebush Mac Lab is open 7 days a week from 9AM-12AM



software and hardware are kept up to date and in good working order. Shenandoah uses the Casper system to provide software updates and to manage licenses. In addition, HelpDesk staff are trained to provide the campus community with all basic technical support. **Why Mac?** The new MacBook Pro runs both Mac OS and Windows OS, which is the best of both worlds. Conservatory students benefit from all of the creative applications, and programs like the business school benefit from all of the analytic applications. It's an all in one machine that's environmentally friendly.

Student Collaboration

MPRT students are collaborating with our theatre students by recording voice and diction class projects. Students in the TH 449 - Theatre Voice Over class come up with the content, and MPRT students in the MUPR101-ProTools 1 class record the projects using the MacBook Pro. This enables both classes to work together at a flexible time and in a flexible environment, which gives both students experience working together to achieve a common goal.



Voice Over Class Project

Example of a collaborative student project with three short segments.

Innovate with Teaching and Learning

Since the MPRT program began, it has evolved into a program that is collaborative with other departments because of Apple technology. The MPRT program continues to innovate with teaching and learning, and other programs on campus have followed suit. We are becoming a template for other curriculums such as applied music lessons within the conservatory where students bring their laptops to lessons to document via recording their progress and get immediate feedback from their teachers.

Contribution and Credits



School Liaison

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Director, Center of Teaching and Learning
Email: amarchan@su.edu

In addition to the school liaison, the following people are able to address these areas.

Visionary Leadership

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Innovative Learning and Teaching

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Associate Professor
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Ongoing Professional Learning

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Compelling Evidence of Success

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