Bridge Experience Program

Annual Report

2022-2023

Virginia Tech

Executive Summary

Overview

Bridge experiences integrate academic knowledge with an environment that is related to a student's intended career path and to bridge student development to the next step after graduation. Typical bridge experiences include internships, undergraduate research, and other site-based experiential learning. Students completing a bridge experience will be able to

- apply and connect their learning across academic and professional settings;
- demonstrate professional self-awareness by articulating their personal and professional development; and
- demonstrate a dedication to using their knowledge, skills, and talents in service to others, communities, and their field.

The Bridge Experience Program completed the second year of implementation in June 2023.

Key impacts

Implementation	Academic Programs	Students
The first academic program will require bridge experiences for students entering in fall 2023.	Currently, 88 faculty from 21 undergraduate degree programs are revising curricula to incorporate bridge experiences.	To date, 71 students have completed bridge experiences in 7 academic programs.
Communication	**Data**	**Opportunities**
The Board of Visitors heard updates from a faculty and student panel. VT News stories highlighted the program.	Based on statistical analyses, paid internships are associated with post-graduation work placements in all colleges.	The Student Opportunity Center, which is a database for students to find experiences, was piloted with 10 academic programs.

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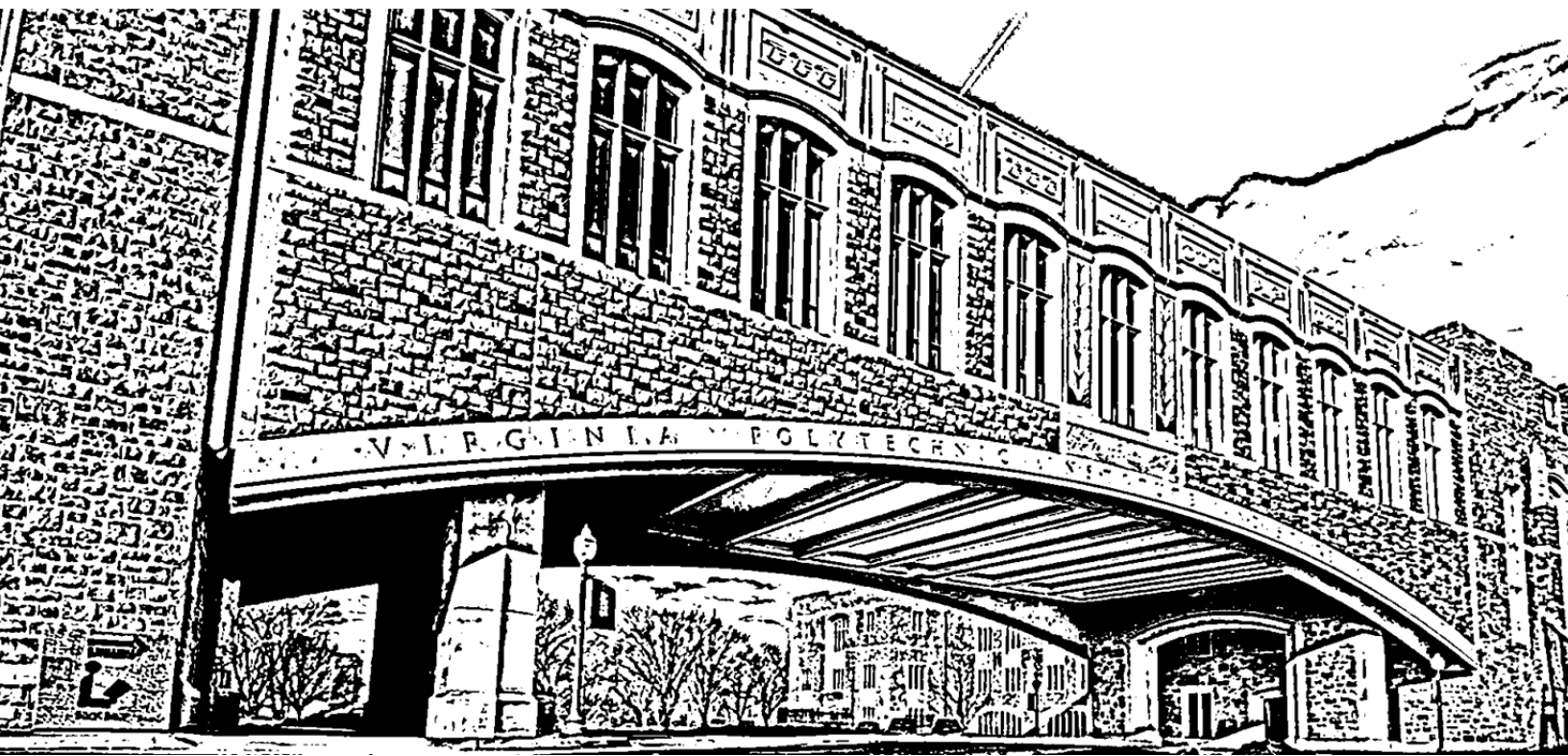
Strategic Milestone

Virginia Tech's strategic milestone is to have **50% of undergraduate degrees** with a required experiential learning component **by 2026 to 2027**. Fourteen of 74 undergraduate degree programs have a requirement for students entering in 2022 to 2023. Twenty-two degree programs have a requirement for at least some students. Degrees with requirements include Agricultural Sciences; Apparel, Housing, and Resource Management; Elementary Education; Fish and Wildlife Conservation; Geography; Hospitality and Tourism Management; Human Development; Interior Design; Meteorology; Music; Nanoscience; Public Health; Secondary Education; and Sustainable Biomaterials. Actual and projected progress towards the strategic milestone is shown below.

Progress towards strategic milestone
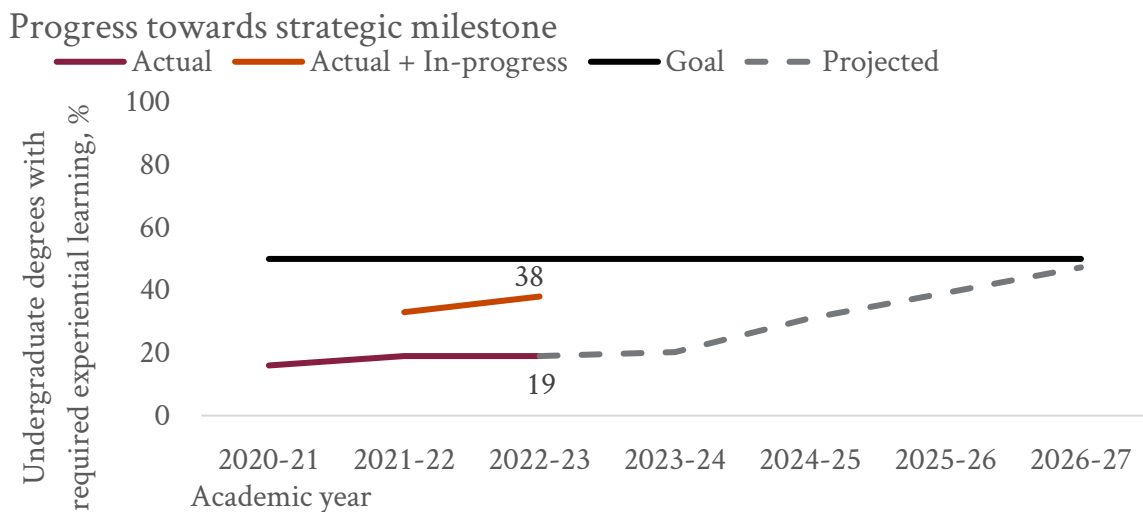
Fifteen degree programs are participating in the Bridge Experience Program and are working to implement a bridge experience requirement. Agricultural Sciences already has a requirement and is making improvements. Six new degree programs will be added for next year.

Bridge Experience Program participants expect to implement requirements for students entering in

+ 2023-24 (n = 1)
+ 2024-25 (n = 8)
+ 2025-26 (n = 6)

Academic Programs

Overview

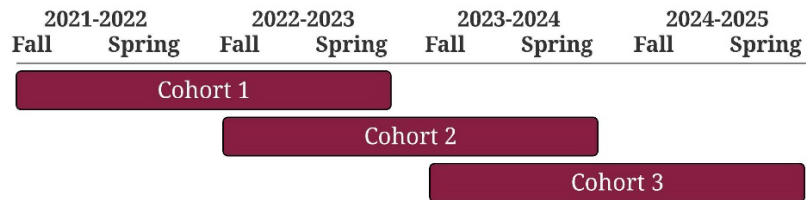The Bridge Experience Program brings on cohorts of academic programs for a 2-year design process. In the end, academic programs will implement bridge experience curricular requirements for all students. New academic programs start each summer. Currently, cohorts 1 to 3 have been engaged. Cohort 3 began with an onboarding retreat in May 2023. The diagram shows the overlapping nature of the cohorts, and the program will continue in the same structure beyond cohort 3.

Bridge Experience Program Rollout

2021-2022		2022-2023		2023-2024		2024-2025	
Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring

Cohort 1
Cohort 2
Cohort 3

During the 2-year design process, faculty spend the first year doing a gap analysis and developing draft plans. During the second year, they continue planning and begin piloting changes. The outcome is a curricular requirement for all students to complete a bridge experience. Academic programs implement curricular changes for students starting at the beginning of the fourth year.

Bridge Experience Program Structure

1 Gap Analysis
Fall Year 1
Document baseline participation, participation gaps, and barriers to participation. Determine opportunity capacity needs.

2 Planning
Spring Year 1
Draft curriculum and learning outcomes assessment process. Plan student learning journey to complete plan, experience, reflection, and showcase.

3 Pilot Implementation
Year 2
Pilot learning outcomes assessment. Increase opportunity capacity. Adapt advising and communication for bridge experiences.

4 Full Implementation
Fall Year 4
Bridge experience curriculum requirement implemented for entering students.

Academic programs

The Bridge Experience Program encompasses 21 undergraduate degree programs and 88 faculty across 5 colleges. Some colleges have groups of academic programs that start together and collaborate across the college. Cohorts are shown below.

Cohort 1: 2021-2023

1. Agricultural, Leadership, and Community Education
2. Biochemistry
3. Biomedical Engineering and Mechanics
4. Chemistry
5. Civil and Environmental Engineering
6. Engineering Education
7. English
8. Food Science and Technology
9. Industrial and Systems Engineering
10. School of Architecture
11. School of Neuroscience
12. School of Visual Arts

Cohort 2: 2022-2024

1. Agricultural and Applied Economics
2. Computer Science
3. School of Public and International Affairs

Cohort 3: 2023-2025

1. Geosciences
2. Industrial Design
3. Management
4. School of Communication
5. School of Plant and Environmental Sciences

CALS has the most degree programs (n = 7) taking part in the Bridge Experience Program representing 70% of their bachelor's degrees. AAD, COE, COS, and CLAHS each have 3 or 4 degree programs participating. Pamplin recently joined with 1 program in cohort 3.

Bridge Experience Program participation by college
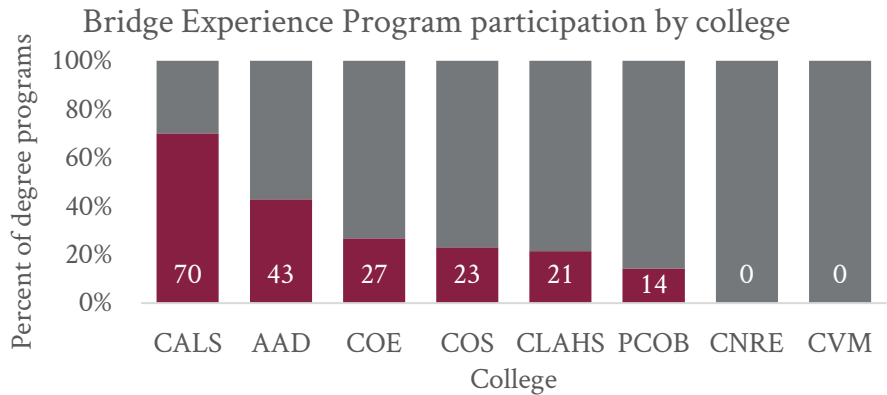
Academic programs are actively formulating strategies for curriculum development, academic advising, effective communication, and fostering opportunities. Each program caters to its specific needs, taking into consideration the students, disciplinary focus, and existing infrastructure. While all programs are adopting creative approaches for implementation, the following highlights supply a glimpse into the accomplishments of various programs.

Food Science and Technology

Lead: Herbert Bruce

Food Science and Technology will be the first academic program at Virginia Tech to require bridge experiences for all students beginning in fall 2023.

ALCE developed lesson plans to introduce bridge experiences during early courses in the curriculum. These materials are open educational resources and can be accessed on VTechWorks.

Agricultural, Leadership, and Community Education

Lead: Donna Westfall-Rudd

Civil and Environmental Engineering

Lead: Caroline Branscome

Civil and Environmental Engineering was the first program to propose a curricular model that included multiple touchpoints with students to communicate the importance of bridge experiences and to ensure students reflected on their learning.

The college piloted a 1-credit special study course to help students reflect after their bridge experience. Students showcased their internship experiences in the Cowgill Lobby.

Architecture, Arts, and Design

Lead: Kathryn Clarke-Albright

Biochemistry

Lead: Anne Brown

Biochemistry developed student personas that captured distinct types of students and their academic and career journeys. Personas were used for curriculum mapping to support students in finding the right bridge experience.

English has been aggressively building internship capacity for their students including technical writers for NIS, grant writers for VTTI, teaching opportunities for Montgomery County Public Schools, and field studies for publishers.

English

Lead: Netta Baker

Chemistry

Lead: Tim Saarinen

Chemistry created a professional development course to help students refine resumes, practice interviewing, and gain skills to be successful in their future careers. They have been networking with employers to build internship capacity for their students.

Professional development

The Bridge Experience Program includes programming to enable collaboration and sharing ideas.

1. The year started with a retreat in August including experiential learning theory, developmentally appropriate experiential learning across the curriculum, and alignment with work-based learning.
2. A monthly Community of Practice was hosted to share ideas and hear from campus partners.
3. At the end of the year, an onboarding retreat was held for new programs. One participant noted, "The retreat should be considered essential to all who will be working on bridge."

Events from the past academic year are shown below.

Date	Event
Aug 2022	Retreat
Sept 2022	Welcome back and semester overview
Oct 2022	Advising strategies for bridge experiences Guest: Zack Underwood
Nov 2022	Strategies for engaging alumni recognizing barriers Guest: Mike Kender
Dec 2022	Preparing students to find internships Guest: Career & Professional Development
Feb 2023	Managing change initiatives
March 2023	Lesson plans and resources for bridge experiences Guest: Logan Layne
April 2023	3900 Management System
May 2023	Onboarding retreat

Students

"

Experiential learning is very important. People tell me all the time that when you work with a real client, there's a lot of things that were left out in class. When you're working in school, they're like this is what you have to do and walk you along, but when you're on a client project, you need to first communicate with the client, take feedback and critique, and implement what the client wants. You don't get that in school.

"

"

The Bridge Experience class has equipped me with the tools and techniques to critically assess my internships, allowing me to extract valuable lessons, identify areas for improvement, and set strategic goals for my professional journey.

"

"

This experience has prepared me the best for my career; it's a real job. 10-20 times more valuable than my schoolwork. It's incomplete if you don't have an experience like this. This experience is the perfect bridge from college to world. Real job, real clients, real problems.

"

Faculty

"

I had the sense from talking with graduating seniors during their exit interviews that we were not doing all that we could to help students explore career options and obtain valuable work-related experience. As a department fundamentally committed to student success, it did not take long for us to agree that experiential learning and career readiness for all of our students should be leading department priorities.

Matthew T. Holt, Agricultural and Applied Economics

"

"

The students in ALCE have shared with us that the Bridge experiences are important in helping them figure out the career options that best align with their talents and skills. Many of our students are looking at multiple opportunities after graduation. Experiencing an internship before graduation allows them to confirm their preference for their first job experience. The reflection and evaluation assignments required in the bridge program give them the structure to organize their reflections on their experiences.

Donna Westfall-Rudd, Agricultural, Leadership, and Community Education

"

Learning Outcomes Assessment

Overview

Learning outcomes assessment aligns with best practices for experiential learning. The process is diagrammed below, and students complete items in blue. Students submit a plan to their academic program detailing why this experience is their bridge experience. Once approved by the academic program, the student enrolls in a 3900 administrative tracking course before beginning the experience. Near the end, the student completes an evaluation, reflection, and showcase of learning. Students can retry each part until the academic program submits a Satisfactory score. Once all 3 components are Satisfactory, the bridge experience is complete.
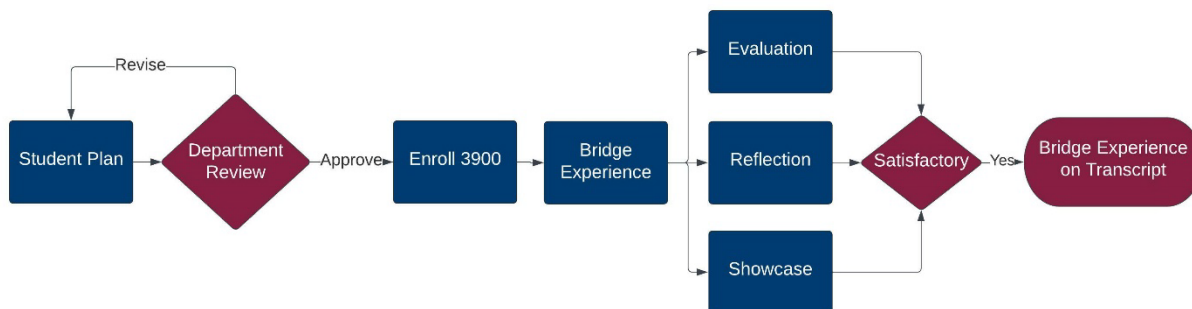
Some programs with existing requirements struggle to track student progress and completion. The 3900 Management System was developed to simplify organization and scoring. Everything after enrollment in 3900 happens in the 3900 Management System.

Curriculum

The Registrar heard feedback from faculty and developed the 3900 administrative tracking course to meet needs while not requiring tuition for summer experiences. These tracking courses exist within academic programs and are 0 credits. The course description and details appear later. Pilots follow based on the first semester of use.

Fall 2022 pilots

- ✓ ALCE 3900
- ✓ CHEM 3900
- ✓ CEE 3900
- ✓ ENGL 3900

Spring 2023 pilots

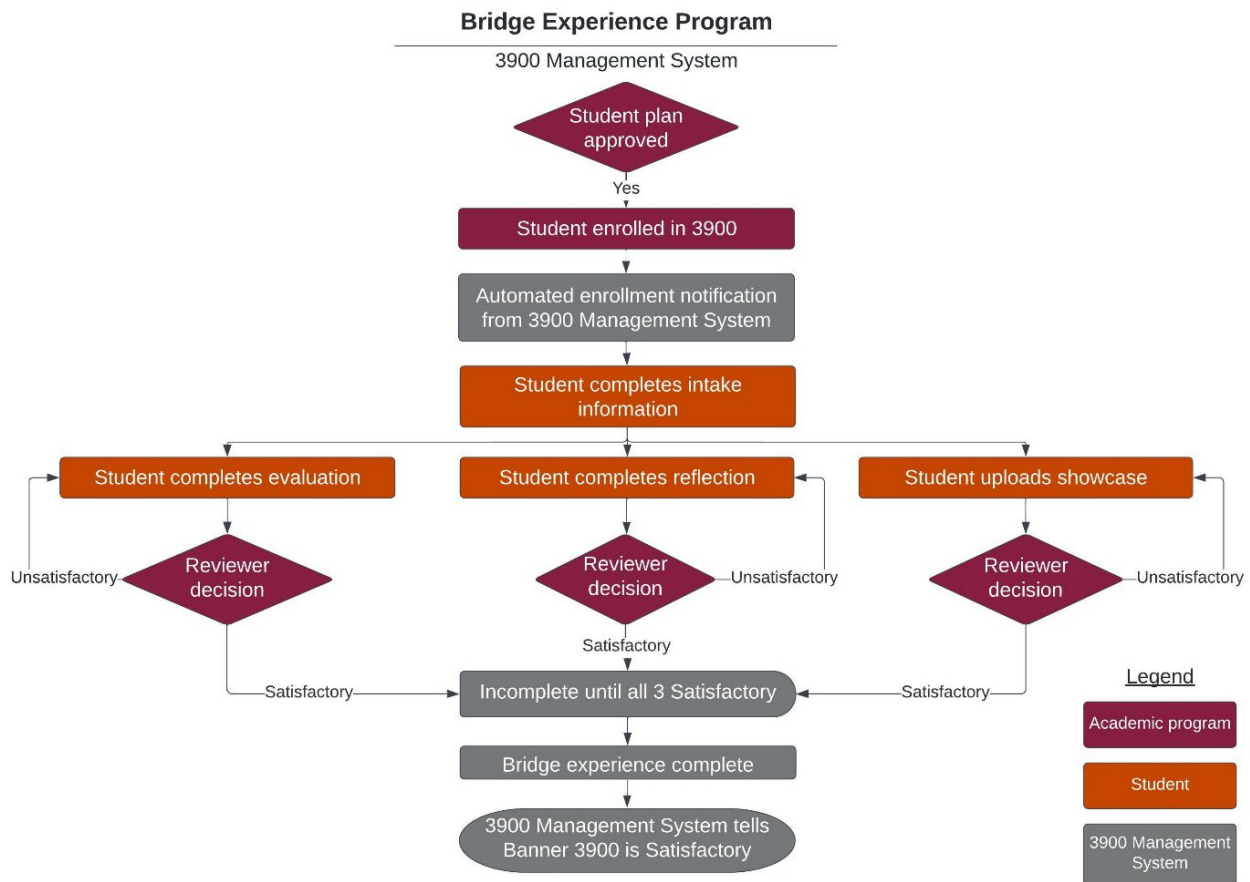- ✓ BCHM 3900
- ✓ BMES 3900
- ✓ NEUR 3900

Summer 2023 pilots

- ✓ ARCH 3900
- ✓ ART 3900
- ✓ SPIA 3900

Sample student scenarios include:

- An Architecture student finds a paid summer internship. The student's plan is approved. The student is enrolled in ARCH 3900, does the internship, and completes the 3900 requirements.

- A Chemistry student does for-credit research with a faculty member. The student's plan is approved. The student is enrolled in CHEM 4994 and CHEM 3900. The student completes 4994 for credit and completes the 3900 requirements.

- An international Computer Science student has a summer internship. The student's plan is approved. During summer, the student enrolls in CS 3900 and CEP 4084 through Career and Professional Development. The student completes CS 3900 and CEP 4084 requirements.

3900 Management System

The 3900 Management System launched in fall 2022. Once a student is enrolled in a section of 3900, all student submissions, scoring, and final grades are completed through the system. The diagram below shows the workflow between the student, academic program, and system. Students receive regular email reminders until they have completed all requirements satisfactorily.

Bridge Experience Program

3900 Management System

```
                    ┌─────────────────┐
                    │  Student plan    │
                    │    approved      │
                    └─────────────────┘
                            │ Yes
                    ┌─────────────────┐
                    │ Student enrolled │
                    │     in 3900      │
                    └─────────────────┘
                            │
                    ┌─────────────────────────┐
                    │ Automated enrollment     │
                    │ notification from 3900   │
                    │ Management System        │
                    └─────────────────────────┘
                            │
                    ┌─────────────────┐
                    │ Student completes│
                    │ intake           │
                    │ information      │
                    └─────────────────┘
```

Student completes evaluation — Reviewer decision — Unsatisfactory / Satisfactory

Student completes reflection — Reviewer decision — Unsatisfactory / Satisfactory

Student uploads showcase — Reviewer decision — Unsatisfactory / Satisfactory

Incomplete until all 3 Satisfactory

Bridge experience complete

3900 Management System tells Banner 3900 is Satisfactory

Legend
- Academic program
- Student
- 3900 Management System

The following screenshot shows the student responding to the reflection prompts. For more information, see the onlin euser guide.

VIRGINIA TECH Center for Excellence in Teaching and Learning
3900 Management System

Welcome hbradford!   Home   Help   Logout
HOME > REFLECTION

NO AUTOSAVE!
Page expires in 59:56 minutes

Reflection

Heather Bradford - Internship - CEE 3900

Internship

06/01/2022 - 08/15/2022
ABC Company
Blacksburg, VA
40 Hours
Jane Mentor

Responsibilites:
I will be doing an internship with ABC Company. This company provides consulting services in the New River Valley. I will be working with customers.

Write a detailed response for each category. If examples are requested in the prompt, they are required for a grade of "Satisfactory." An incomplete response will result in a grade of "Unsatisfactory/Redo" for the Reflection.

(CATEGORY 1) WHAT? [DESCRIBE YOUR OBSERVATIONS AND EXPERIENCES WITHOUT JUDGEMENT.]

Describe your bridge experience by answering the following:

What did you do (projects worked on, daily/weekly tasks, research focus, etc.)?

What was your role (your title or position on the team or in the internship or research project, study abroad experience, etc.)?

Learning outcomes assessment

The Assessment Committee, consisting of 9 faculty in 4 colleges, met in August 2022 to finalize the assessment instruments for the 2022 to 2023 academic year. Primary changes included transforming the self-evaluation into a site evaluation and revising the showcase instructions. Data were collected during the year, and the committee will meet again in July 2023.

During the first year, 71 students completed a bridge experience representing 4 of the 8 undergraduate colleges with enrollments shown below. Experiences included internships (62%), research (18%), field experience (7%), co-op (4%), and others including study abroad, service learning, and clinical shadowing.

CLAHS, 28	COE, 19	COS, 16	CALS, 8

Assessment follows for the 3 student learning outcomes (SLO).

1. **Students will be able to apply and connect their learning across academic and professional settings.**

Most students were able to relate their experience to their coursework, although some students noted that their academics did not adequately prepare them for the experience. More than 40% of students were able to give specific examples of how their coursework related to the experience.

SLO 1: Apply accademics to professional setting

	Below Average	Average	Above Average
Showcase	16%	69%	15%
Reflection	24%	35%	41%
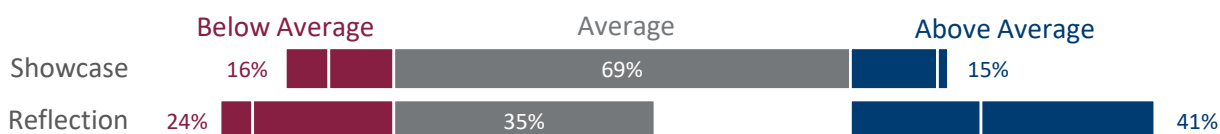
2. **Students will be able to demonstrate professional self-awareness by articulating their personal and professional development.**

Students generally identified the professional competencies that they gained through the experience. However, students often reflected superficially and were less likely to evaluate changes in their performance during the experience or for future experiences.

SLO 2: Demonstrate professional self-awareness

	Below Average	Average	Above Average
Showcase	31%	41%	28%
Reflection	21%	60%	19%
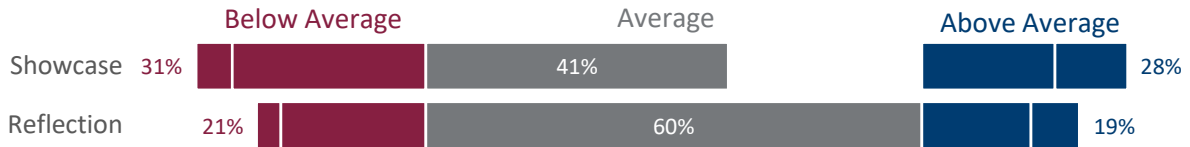
3. **Students will be able to demonstrate a dedication to using their knowledge, skills, and talents in service to others, communities, and their field.**
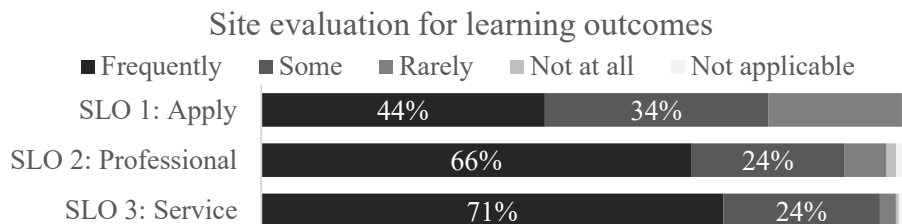
Most students named actions they did for others but did not identify how their actions affected the people they interacted with. Few students had a changed sense of purpose because of their experience.

SLO 3: Demonstrate dedication to service

	Below Average	Average	Above Average
Reflection	72%	22%	6%

Other indicators of quality

Students were asked to respond to questions about how often they had the opportunity to do activities related to the 3 learning outcomes. Questions were aggregated at the outcome level, and results are shown below. Students most often felt they had the opportunity to serve others followed by developing a professional identity. The application of their classroom learning was the least, and students reported having knowledge gaps and needing to learn new skills.

74% of students are extremely likely to recommend their experience to others.

Site evaluation for learning outcomes

■ Frequently ■ Some ■ Rarely ■ Not at all ■ Not applicable

	Frequently	Some	Rarely	Not at all	Not applicable
SLO 1: Apply	44%	34%			
SLO 2: Professional	66%	24%			
SLO 3: Service	71%	24%			

Data and Analytics

Overview

The Bridge Experience Program provides data about student placements and experiential learning participation to faculty and administrators. For example, the following reports were provided on:

- ✓ participation and post-graduation placements to all academic programs (n = 16);
- ✓ participation, post-graduation placements, and statistical analyses to colleges (n = 7);
- ✓ data justification for grant proposals (n = 2); and
- ✓ participation gaps to the Access and Affordability student working group.

Participation and equity

- ✓ 78% of Virginia Tech graduates have placements, which is average nationally for R1 institutions.
- ✓ Paid internships are associated with work placements in all disciplines. Participation has been steady over time with 55% of graduates reporting a paid internship. Colleges range from 33 to 77%.
- ✓ Transfer and first-generation students have fewer placements, co-ops, and paid internships. Gaps for transfer students are systemic across the university. Gaps for first-generation students are increasing. Both groups have lesser starting salaries than their peers.
- ✓ Paid internship participation varies across the Commonwealth, with graduates from counties surrounding D.C. reporting the most participation and rural graduates reporting the least.

College-specific statistical analyses

To complement the university-level analysis, placement data were analyzed by college to determine which experiences were associated with work placements and with continuing education.

Students with work placements	Students continuing education
Students with **paid internships** are significantly more likely to secure a work placement in ALL colleges.	Students with **paid internships** are significantly more likely to secure more education in ALL colleges. Students with **research** experience are significantly more likely to secure more education in STEM and liberal arts.

Opportunity Capacity

Overview

Zach Coffren was hired as the Assistant Director for Learning Opportunities and started in March 2023. His position centralizes support for work-based learning including helping academic programs increase capacity, connecting external partners to academic programs, and developing templates for partnerships. In addition to new personnel, the Student Opportunity Center pilot began to increase participation in disciplines with historically less participation.

Student Opportunity Center

The Student Opportunity Center (SOC) has technology solutions to help campuses centralize experiential learning opportunities. SOC is a searchable database for students to find internships, research, and study abroad on one platform. SOC takes feedback from faculty about what types of internships their students are looking for, searches websites and online databases, and posts related opportunities within the platform.

Pilot outcomes

For the pilot, 7% of students used SOC by the end of fall and 15% by the end of spring. Most academic programs were less than the 10% target at the end of their first semester and increased during the second semester to be in the target range of 15 to 20%.

Students had positive feedback on the concept but suggested technical improvements to the platform. Targeted marketing to students was more effective when opportunities were in their discipline and local.

The pilot will continue from 2023 to 2024 and will expand to more disciplines in agriculture, liberal arts, and science. Planning is underway to increase student engagement through strategic email communication and engaging academic advisors.

SOC pilots

1. Agricultural and Applied Economics
2. Agricultural, Leadership, and Community Education
3. Biochemistry
4. Chemistry
5. English
6. Food Science and Technology
7. Graphic Design
8. School of Neuroscience
9. School of Plant and Environmental Sciences
10. School of Public and International Affairs

Ongoing Operational Support

Overview

Overall program implementation continues on schedule. To support ongoing progress, college-level grants were awarded for the coming year to pilot systems for sustained impact. University communication efforts are ongoing with plans to enhance communications for next year. To support program planning, the Student Advisory Board was reengaged this year.

University communication

Presentations were given to the following groups

- ✓ Career and Professional Development on Aug. 5;
- ✓ Provost Clarke on Aug. 19 & Nov. 2;
- ✓ Academic advising directors on Sept. 1;
- ✓ Don Taylor on Oct. 18;
- ✓ School of Public and International Affairs on Nov. 9;
- ✓ Academic Affairs Council on Nov. 10;
- ✓ CLAHS undergraduate directors and advisors on Jan. 18 & 25;
- ✓ Access and Affordability Student Working Group on Feb. 10;
- ✓ Board of Visitors on Mar. 20; and
- ✓ PCOB undergraduate curriculum committee on Apr. 24.

> **For more information, check out these VT News stories or the website.**
>
> Program introduction
>
> English
>
> Food Science and Technology
>
> Agricultural, Leadership, and Community Education
>
> Board of Visitors

Committees

The Student Advisory Board was reestablished in fall 2022 with students from academic programs involved in the Bridge Experience Program. Considerations identified by students included

- needing more information about getting involved in undergraduate research and hearing that information multiple times during their studies;
- needing more information about graduate school, applications, and funding;
- wanting to see the variation in opportunities available to them and hear from peers about their experiences; and
- communicating intentionally with students who change majors.

Bridge experience curriculum

Bridge experience

Key characteristics of bridge experiences include

- a clear purpose and intentional learning outcomes for the student;
- an immersive, transformational experience that will serve as a bridge between the student's academic experience and future employment in the professional world;
- evidence that the experience type is predictive of a successful transition to a career or continuing education in the discipline based on student goals;
- student agency as opposed to an experience that is mainly orchestrated by a faculty or staff member through a course or other program;
- a supervisor and/or faculty member that the student is accountable to and who can serve as a resource and mentor for the student during the experience;
- a prolonged workplace experience of sufficient length to include preparation, orientation, ongoing support, reflection, and a showcase; and
- an opportunity for students to appropriately showcase their learning and transformation.

Completion of a bridge experience is tracked through enrollment in a section of 3900.

3900 tracking course information

Course: XXXX 3900 Bridge Experience

Description: Application of academic knowledge and skills to a work-based experience aligned with post-graduation goals using research-based learning processes. Satisfactory completion of work-based experience often in the form of internship, undergraduate research, co-op, or study abroad; self-evaluation; reflection; and showcase of learning. Pre: Departmental approval of 3900 plan.

Course titles can be customized by CRN through the same process as similar courses. In this case, the course shows on a transcript as BEXP: *Custom title here.*

Checksheet examples

Example A:

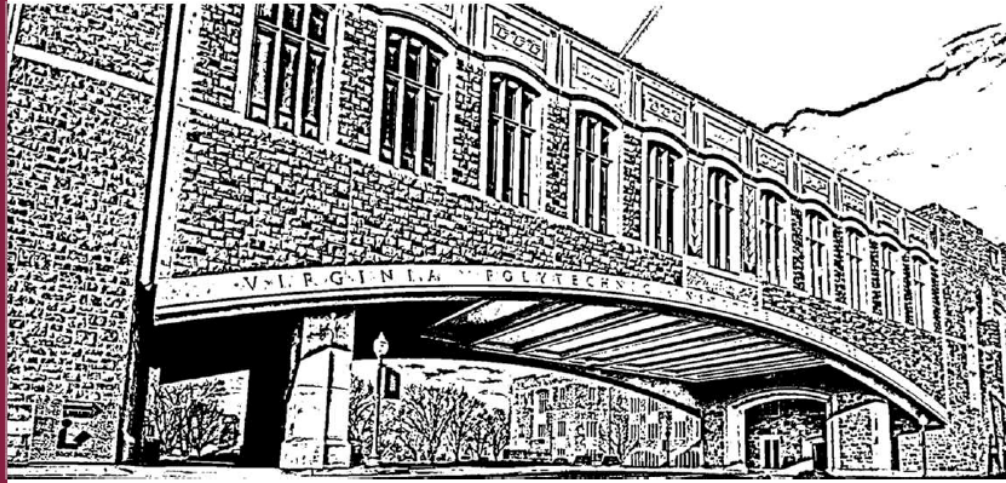XXXX 3900 Bridge Experience (0) (requires departmental approval)

Example B:

Semester	Credits
XXXX 3900 Bridge Experience *Pre: requires departmental approval*	0

Example C:

XXXX 3900   Bridge Experience   *pre: requires departmental approval*   0 _____

Note: XXXX should be replaced by your program's course subject

Bridge Experience Program

WHAT IS A BRIDGE EXPERIENCE?

Bridge experiences are authentic, work-based experiences that match a student's post-graduation goals and support the transition to life after VT.

- ✓ Internships
- ✓ Research
- ✓ Work experience
- ✓ And others…

WHAT DO STUDENTS SAY?

"This experience is the perfect bridge from college to world. Real job, real clients, real problems."

"If you can guarantee an opportunity for every student I think it's a great idea."

"Work experience distinguishes a student's resume. All the employers I've spoken with or even at career fairs say having an internship is preferable."

WHY BRIDGE EXPERIENCES?

- ✓ Degree requirements ensure equitable access for **ALL** students.

- ✓ Virginia Tech's strategic plan

- ✓ Co-ops, paid internships, and undergraduate research are positively related to post-graduation outcomes.

THE PROGRAM

Undergraduate academic programs are supported through a 2-year design process to implement a bridge experience requirement in their curricula. The program includes funding, planning resources, technology support, and a Community of Practice to share ideas and learn from other disciplines.

Gap analysis — Fall year 1
Programs will identify baseline participation, participation gaps, student barriers, and opportunity capacity needs.

Planning — Spring year 1
Programs will draft curriculum and the student learning journey to complete a plan, experience, reflection, and showcase.

Pilot implementation — Year 2
Programs will pilot learning outcomes assessment, adapt advising and communication strategies, and increase opportunity capacity.

Full implementation — Fall year 4
Programs will implement a bridge experience curricular requirement for entering students.

Applications open each spring for programs starting in May, and information sessions will be held before the deadline. For more information, see www.teaching.vt.edu or email teaching@vt.edu.

Come join the program!

Center for Excellence in TEACHING AND LEARNING