

Chapter 14

A Step-by-Step Guide for Developing a Microcredentialing Program

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ABSTRACT

This chapter describes how institutions of higher education (IHEs) can create a multi-faceted microcredentialing/digital badging program that includes industry specific skills, transferrable skill development (career readiness skills), and reskilling/upskilling for regional community workforce partners. Drawing from the direct experience of Florida Gulf Coast University (FGCU), a regional, state comprehensive university, this chapter provides a blueprint for cultivating relationships with diverse constituencies, such as industry partners, faculty, staff, and students, to create a successful, comprehensive digital badging initiative.

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A Step-by-Step Guide for Developing a Microcredentialing Program

Microcredentials are a powerful and innovative vehicle institutions of higher education (IHEs) can utilize to provide students with specific skills identified by employers (Mulligan, 2022). Essentially, microcredentials reflect competencies required or desired by industry (Naidoo & Kinzel, 2022). Microcredentials are not intended to replace the traditional bachelor's degree; instead, they complement the degree by providing students with additional in-demand competencies, and by recognizing skills that are invisible in a standard transcript. In contrast to the broad scope of a bachelor's degree program, microcredentials focus on demonstrating mastery of a particular skill or area of knowledge. Thus, digital badges are a way to make visible a learner's successful completion of educational activities that lead to specific competencies and skills (Hickey, 2012). This chapter presents a toolkit to help IHEs create microcredentialing initiatives that meet the workforce development needs of regional and national employers.

Microcredentials are new in higher education, so there are few established best practices or models for creating robust digital badging initiatives (Hijden, 2019). This chapter proposes some best practices, based on the authors' ongoing experience implementing a multifaceted digital badging initiative at Florida Gulf Coast University (FGCU). Use the chapter as a guide to help your institution work through the critical implementation stages of launching a microcredential program strategically, and to avoid costly administrative missteps.

BACKGROUND

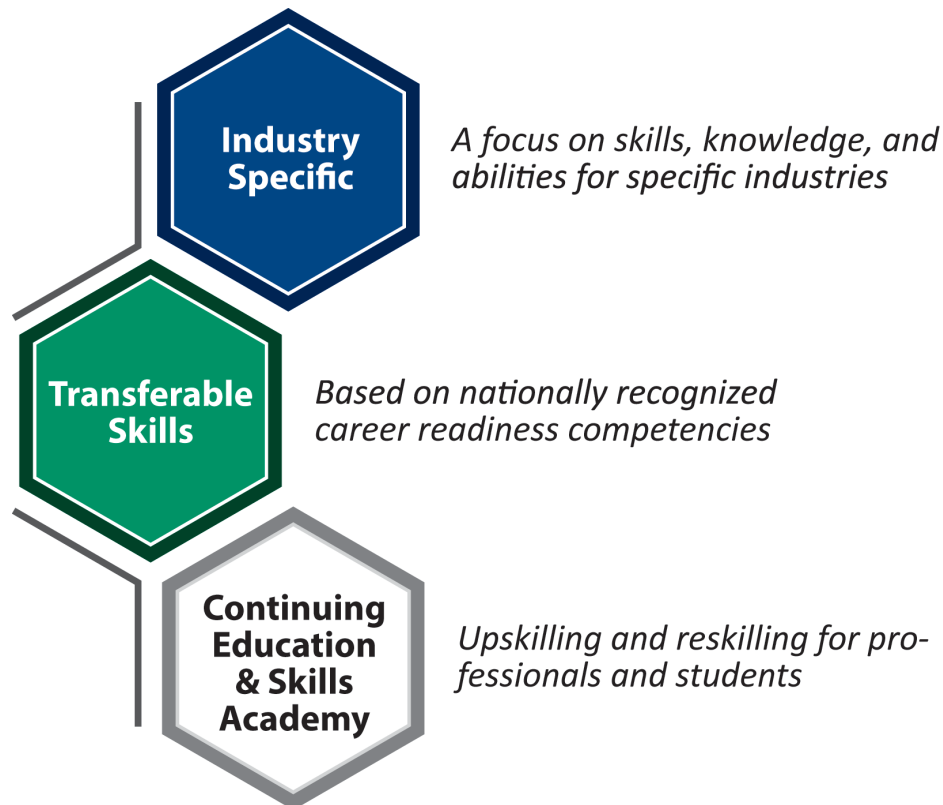
At FGCU and for the purpose of this chapter, a microcredential is defined as a credential issued to a student by an IHE for demonstrating competencies in a focused subject. It can be an addition, alternative, complement to or component of another program (Naidoo & Kinzel, 2022). A digital badge is the verifiable credential that allows students to show the skills they have demonstrated, while earning a microcredential that is shared with an external audience via platforms such as LinkedIn (Fein, 2021). For simplicity, we will use the terms interchangeably in this chapter. In essence, microcredentials and digital badges offer students the opportunity to gain focused, in-demand skills that complement their degree programs. Badges efficiently share and demonstrate student mastery with an external audience through digital badging technology which provides an intentional use of meta-data (listing learning outcomes, skills and competencies, linked to student work) (Proctor, 2021).

Effective microcredentialing programs can take a variety of forms, as the authors discovered through our experience at FGCU—a regional state comprehensive university of 16,000 students in Southwest Florida. Our analysis of the skills gaps in the region and of the barriers to effective communication of student skill achievements led us to develop three distinct forms of microcredentials (Figure 1):

- Badges associated with courses that have significant content developed in collaboration with industry partners. Students earn industry-specific badges through an assessment process over and above the requirements for the course.
- Badges that make transferrable career readiness skills visible. To earn these badges, students create a portfolio of artifacts to show how they developed specific transferable skills through a variety of course work and co/extracurricular activities.
- Badges that serve as alternative workplace credentials for anyone looking to expand their skills. Through stand-alone courses that do not bear academic credit, students, alumni, and working

professionals earn badges for upskilling or reskilling competencies such as cyber security and artificial intelligence.

Figure 1. FGCU microcredential categories: industry specific, transferable skills, and continuing education and skills academy



FGCU launched all three forms of microcredential at the same time, making our experience broadly applicable to a variety of IHEs' missions and priorities. Further, as a doctoral granting institution with 63 undergraduate degrees, 26 master's degrees, 7 doctoral degrees, and 17 academic certificates, FGCU's reach and variety of programs provide examples that will resonate with a broad spectrum of IHEs. As a regional comprehensive institution, investing and launching the badging program fits directly into the mission of the university.

With any initiative one must evaluate the return on investment (ROI); however, this initiative was driven by FGCU's mission and desire to connect industry with their university in a unique way. For us, the primary ROI sought is improving student employment outcomes, in line with our strategic plan and performance metrics. We do not envision the initiative as an opportunity to generate revenue, and, consistent with our priority on student career outcomes, we have committed to making badging opportunities no-cost or low-cost to current students. As much as that is true, we do expect indirect ROI from future philanthropic support from employer partners, and increased support from happy alumni. Additionally,

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this initiative pays off in better connections with industry partners, which impacts not just the badging initiative, but other areas of the university as well.

In addition to outlining the steps toward creating a microcredentialing program, this chapter provides a blueprint for cultivating relationships with diverse constituencies, such as industry partners, faculty, staff, and students, in order to create a successful and comprehensive microcredentialing initiative. The needs, opportunities, and challenges of your institution and region will be specific; the strategies we present are designed to provide a flexible framework for creating a digital badging initiative applicable in many institutions. For each major step in implementing a digital badging initiative, we include general advice and information about best practices, followed by an account of FGCU's experience, to provide an example of implementing those principles in a specific institutional context.

The objectives of the chapter are:

- Describe the value of digital badging for IHEs
- Provide a step-by-step process for conceptualizing and implementing a university-wide digital badging initiative.
- Suggest ways to assess institutional readiness to implement a digital badging initiative.

The Value of Digital Badging for IHEs

Badging and microcredentialing initiatives are growing at IHEs primarily in response to student employability concerns posed by two related and much-discussed workplace trends: The future of work and the skills gap.

The future of work is itself the confluence of two long-term trends, namely the technological transformation of the workplace and longer working lives (Weise et al., 2018). Technologies such as artificial intelligence, robotics, and productivity software are revolutionizing the type of work people do, the modes and places in which they do it, even the kinds of jobs available for humans. These changes are taking place at an ever-accelerating pace. Meanwhile, people are living longer due to medical breakthroughs and lifestyle changes, and, increasingly, professionals are working longer, whether by choice or necessity (Crawford, 2021).

These accelerating changes in the workplace, in turn, drive a second workplace challenge: The skills gap. Workers starting their careers today can expect to see technology transform their workplace multiple times through their working lives. This is true not only for those who work in technologically-specialized STEM fields such as engineering or medicine; the rise of workplace productivity technologies and the migration of communication and creative work to online media increasingly means that everyone will need some degree of technological competency to get by. For employers, these changes lead to a mismatch between the new skills they need workers to have and the skills possessed by their current workforce or job candidates (Murphy, 2021).

Ironically, the very changes that are driving demand that employees become more tech-savvy are also increasing the value of those skills that are not commonly associated with technology. Recent research shows robust future demand not only for technological skills, but for the social/emotional, communication, and critical judgment skills computers cannot easily duplicate (Bughin et al., 2018). Future workers will need the right mix of human and technical/specialized skills to be competitive, and will need to re-skill or up-skill multiple times through their working lives.

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The skills gap is not a passing trend; it requires strategic and long-term solutions from colleges and universities. Badging initiatives can help higher education adapt to these challenges, and IHEs should exercise strong leadership to develop short-term credentialing programs that meet institution-wide goals (Rodenfels, 2021).

First, badges can be thought of as a bridge between a college education and a specific job. This is by no means a new challenge—almost by definition, college degrees are general and jobs are specific. However, the pace of change and specificity of skills needed in the workplace mean that students increasingly need on-ramps to particular career options, and IHEs need some educational tools that can be developed, deployed, and discarded more quickly than traditional university curricula. Once again, this is not an argument for replacing traditional college education with short-term badges or boot camps (Mulligan, 2022). To the contrary, today’s students desperately need core disciplinary understanding to apply new technological tools effectively, and they need strong human skills to lead, communicate, persuade, and make strategic use of information—and these are precisely the lasting skills a college education is designed to develop. Adding badging programs to traditional degree offerings allows IHEs to deliver a balance of lifelong-learning skills and the specific skills employers need today (Sullivan, 2021).

Second, badges can enable IHEs to extend needed education beyond the end point of a traditional degree program. In a future in which people will experience multiple and far-reaching shifts to their workplaces, people will need to dip back into education throughout their lives for shorter-term experiences. They will need to re-skill in order to be able to do the same job in a new technological context, and to up-skill to pivot to new opportunities (Blumennstyk, 2019).

Finally, badging programs enable IHEs to be players in the growing arena of continuing education, and to keep their core programs attuned to workplace change and employer needs. In short, the advantages of badging to higher education can be summed up as “the power of and.” Degrees and badges, education and training, human and job-specific skills, college and continuing education, enduring skills and timely trends. To adequately serve our students today, IHEs must preserve the type of education they have always done well, and develop new educational tools created to respond to the changes of the new world of work.

STEP-BY-STEP IMPLEMENTATION OF A DIGITAL BADGING INITIATIVE

We offer these 12 steps as a guide to the development of a badging initiative, based on our ongoing experience at FGCU. We stress that FGCU itself is currently on this path of development, not done with it. Currently, our institution is working actively on steps 8 through 10, and planning for steps 11 and 12.

Step 1: Identify which of the institution’s strategic goals digital badging will support.

Step 2: Recruit a core team from across the institution to develop the initiative to ensure varied contexts and challenges are represented.

Step 3: Write a white paper conceptualizing a badging initiative to address institutional strategic goals, taking into account best practices.

Step 4: Present a concise plan to campus stakeholders for buy-in, and to institutional leadership to secure necessary resources and support.

Step 5: Broaden campus involvement by establishing a steering committee.

Step 6: Collaborate with employer stakeholders to develop initial badging pilot programs.

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Step 7: Identify and implement the technology necessary to support the institution's badging plan.

Step 8: Conduct an inventory of existing curricular elements and cocurricular experiences to develop pathways for skills badges.

Step 9: Develop new courses and other activities associated with microcredentials to further initiative goals.

Step 10: Create branding and marketing materials and strategies, including a Web site, to inform multiple constituencies about the growing initiative.

Step 11: Determine appropriate staffing needs for continuing oversight, growth, and support of the initiative.

Step 12: Identify long-term budget models to ensure program scalability and sustainability.

Step 1: Identify Which of Your Institution's Strategic Goals Digital Badging Will Support

The main and most obvious goal supported by badging and microcredentialing is the one guiding FGCU's initiative, namely, improving employment outcomes for graduates. In today's tight labor market, employers struggle to fill vacancies with skilled workers. Each month since 2015, the number of monthly job vacancies has exceeded the number of monthly hires in the U.S. (Gallup, 2022). The skills employers need workers to have range from basic employability skills to industry-specific or technical skills. Sometimes, students need to develop these skills in order to be competitive. Sometimes, graduating students actually have the skills employers need, but employers are unable to ascertain that through school transcripts, or students are not adept at articulating how their academic and cocurricular experiences demonstrate achievement in those skills. Here, too, badges can identify and make visible competencies students acquire, particularly when employers use digital search tools for recruiting and hiring. Thus, a goal to meet rapidly-changing labor market demands will likely include both helping learners gain new skills and making visible their existing skills and knowledge.

The first step in creating a plan to achieve this goal is spending time with employers to ascertain what the changing workforce needs are. Rather than inventing a credential to launch and hoping that it finds an audience of learners and employers, it will be more strategic to determine the necessary competencies in partnership with employers and then collaborate with those employers to create a microcredentialing program that meets their needs. Through close collaboration with industry, IHEs can create microcredentials that enable students to graduate with a degree and an additional credential to launch them on a career path.

FGCU tied the badging initiative to our 2017 strategic plan, which included a pillar for "Community Engagement and Outreach," which focuses on opportunities for innovative educational partnerships in Southwest Florida. The specific objective for this pillar was:

FOCUS on building partnerships and relationships with our five county school districts, area businesses and organizations to optimize opportunities to put FGCU expertise to work to support the region's economy, model innovative and sustainable practices and advance the community (Florida Gulf Coast University, 2017, p. 10).

With a focus on working with local employers, monitoring national trends in skill needs, and creating a structure to address skill gaps, we created a microcredentialing initiative in order to address FGCU's

multidimensional strategic goal. We explain more about the process that led to this structure in the section on writing a white paper.

Step 2: Recruit a Core Team From Across the Institution to Develop the Initiative to Ensure Varied Context and Challenges are Represented

Recruiting a diverse team of initial champions is an essential step toward building an institutionally sustainable badging model and achieving buy-in for the initiative, because microcredentialing is a new paradigm in higher education. IHEs have historically viewed the credit-bearing course as the basic building block of the curriculum. At FGCU, microcredentials can be related to coursework, but they do not bear credit, are not tied to a specific major, department or academic college, and are not required by any degree program. Unlike traditional courses, microcredentials can step outside the credit-bearing curriculum to make strategic use of cocurricular activities; also, unlike the for-credit curriculum, which is rightly the province of the faculty, microcredentials may be designed and assessed by teams of IHE faculty and outside industry partners. Thus, implementing a large-scale microcredentialing initiative requires a cultural shift, which, in turn, requires input from diverse stakeholders to represent an array of opportunities and challenges across the university.

For all these reasons, introducing microcredentials to the IHE community can be fraught with misunderstanding, and vulnerable to opposition, at least initially. From the inception of the initiative, a core team of innovative and persuasive faculty, administrator, and staff champions should provide organizational leadership and strategic vision to engage faculty and staff. The initial executive committee should be relatively small. At the inception of the digital badging initiative, it is imperative to work quickly and efficiently by assigning specific projects to team members. A large committee will slow down these efforts and diffuse individual responsibility for assigned projects. The following items are good principles to consider in the construction of your team:

- The team should have different areas of expertise and professional responsibilities.
- If possible, you should identify potential team members who are already working on initiatives that align with the goals of digital badging. This could be faculty already working on skills pedagogy or career readiness, or an administrator already working with local industry to identify workforce needs.
- You should invite interested faculty members and staff members into conversations with employers to develop shared assumptions about employer needs.
- You should share literature about best practices and successful examples of microcredentialing programs.
- You should invest time in personal meetings with potential team members. They need to understand first-hand how microcredentialing fits into the IHE's mission, benefits students, and connects to their own professional expertise and goals. This takes time.
- You should engage senior leadership who can listen, articulate the benefits of the institution's initiative, and connect diverse teams across it.

At FGCU, the Vice President and Vice Provost for Strategy and Program Innovation led the recruitment of the initial digital badging executive committee. This committee included the Dean of the Honors College, Associate Dean of the College of Arts and Sciences, and the Director of Digital Learning.

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Each person brought to the executive committee relevant knowledge and experiences, including prior experience with digital badging and curricular innovation, substantial connections with local industry, programmatic experience related to transferrable skills, technological expertise, and significant experience with workforce readiness.

Even though FGCU's digital badging executive committee developed a shared vision, not everyone was initially equally familiar with digital badging. Much of the early work of the committee focused on developing a common understanding of digital badging and the workplace challenges it responds to, familiarizing members with the literature on the subject, and developing a common strategy for creating and implementing a plan. It was an enjoyable and collegial process, but it was not quick or easy. Institutions launching this type of initiative should not expect everyone on an executive committee to start at the same conceptual place in terms of digital badging. The early goal is to create that common vision and then quickly start spreading it to the rest of campus. After the initial pilots have been launched, the executive committee should be expanded to include those in charge of implementing the full initiative. At FGCU, the Assistant Vice President of Innovative Education and Partnerships was added after the initial stage to oversee the microcredentialing initiative.

Step 3: Write a White Paper Conceptualizing a Badging Initiative to Address Institutional Strategic Goals, Taking into Account Best Practices

A white paper is commonly used to highlight a complex issue, or promote a project, solution, challenge or methodology. Once the microcredentials idea has been circulating among university faculty and staff and local industry leaders, developing a white paper is a natural next step to formalizing a proposed strategic initiative. This white paper is also a way of getting buy-in across the institution, because it provides a systematic overview of the initiative, answers potential questions, and helps the institution understand how the initiative is tied to the identified strategic goals.

The purpose of this white paper is threefold:

1. To provide an overview of alternative digital credential programs across IHEs, as potential models and strategies for your own institution.
2. To identify potential successes and failures for the institution, based on assessing the published literature in light of institutional and regional context.
3. To develop, explain, and recommend a conceptual framework for the microcredentialing initiative at the institution.

The major points of the white paper should include:

- Why this initiative?—tied to the published literature, to information from surveys of employers, and to the institution's mission
- Benefits to students and employers.
- Benefits to the institution, including defining who you serve.
- The basics of badging.
- Best practices.
- Conceptual framework for microcredentials.
- Technology needs.

- Funding needs
- Proposed next steps.

FGCU's white paper incorporated the above elements to address the needs of students, employers, and established workers while achieving the University's strategic goal of community engagement and outreach (Timur et al., 2020). FGCU's analysis of industry skills gaps led the white paper team to recommend a badging framework based on three types of microcredentials to address multiple needs apparent in the ecosystem that is developing between IHEs and employers (Figure 2).

Industry-Specific Microcredentials

FGCU provides a talent pipeline for several industries of strategic importance to regional growth. Through conversations with industry leaders, the team identified credentials, such as a "Fundamentals of the Medical Device Industry" badge, that provide a competitive advantage for FGCU students and create a bridge between a college degree and employment. Current studies indicate that digital credentials created with employer engagement can enable powerful results (Credly, 2017). These microcredentials can also help address the equity and skills gaps found in fast-paced marketplaces.

Transferrable Skills Microcredentials

Employers in the Southwest Florida region talk about transferable skills being as important as technical skills and knowledge in a specific discipline. Research shows this conclusion is widespread (e.g., Emsi/Strada, Robot Ready; MGI, Skill Shift) (Weise et al., 2018). Beyond immediate career outcomes, many IHE leaders and employment researchers believe students who develop these skills will be better prepared to adapt and flourish in an evolving economy (Blumenstyk & Selingo, 2018). FGCU used the National Association of Colleges and Employers (NACE) competencies as a portfolio of core skills widely endorsed by employers, and developed badges for transferable skills such as critical thinking and communication skills, creating opportunities to: (a) Increase student awareness of the importance of general skills alongside the specialized knowledge of a major; (b) empower students to "name and claim" the general skills they are developing in college in an interview context; (c) translate academic transferable skills into the language of the workplace that employers will recognize; (d) acknowledge the value of skills taught in all parts of the curriculum—general education, electives, and cocurriculars as much as the major. The close link of transferable skills to liberal arts education crucially enables buy-in from Arts & Sciences faculty, who are politically powerful, but too often neglected in campus career initiatives.

Continuing Education for Upskilling and Reskilling

Fifty percent of all employees will need upskilling by 2025, as adoption of technology increases (Rodenfels, 2021). Alumni, working professionals, and people who are looking for new careers, will all need additional credentials regardless of their current education. Professionally-focused learning goals require small, simpler, and more applied learning programs that are shaped by industry need and are modest in cost (Fong et al., 2016). A fundamental reality of the future of work is that professionals cannot treat college as the end of their professional education; Our white paper proposes a way for FGCU to meet

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the need for lifelong learning through a Continuing Education and Skills Academy. For FGCU, this is a crucial opportunity to serve our own alumni as well as benefitting professionals in the region.

Figure 2. FGCU digital badges conceptual framework

<u>Industry Specific</u>	<u>Transferrable Skills</u>	<u>Continuing Education</u>
<i>GOAL</i>		
Meeting needs with industry competencies through alignment and partnership for talent pipeline and workforce development.	Increase awareness of the importance of general skills, empower students to articulate their skills to employers, and acknowledge the value of skills taught throughout a curriculum.	Meeting the skill development needs associated with business and/or economic changes and career changes of the workforce.
<i>AVAILABILITY</i>		
Digital badges are integrated into existing academic programs.	Digital badges are embedded throughout a student's experience from start to graduation.	Digital badges are offered through applied learning programs that are shaped by career changes.
<i>OUTCOME</i>		
Industry Readiness	Confidence Building	Upskilling/Reskilling

Step 4: Present a Concise Plan to Campus Stakeholders for Buy-In, and to Institutional Leadership to Secure Necessary Resources and Support

A white paper developed by a core group of campus champions supplies the badging initiative with a coherent vision, a proposed structure, and an estimate of resources needed and benefits expected. However, moving toward piloting and implementation requires that a much larger constituency on campus be invested in the idea. This investment needs to include both political and monetary capital.

A broad and intensive campaign to present the badging plan to stakeholders across campus is a crucial next step toward implementing the ideas in the white paper. This is a little different from an “awareness campaign” that might accompany an already-completed initiative and be designed to recruit student or faculty/staff participation. Instead, in this campaign the badging plan is being presented to the people who will be needed to implement and fund it. The plan should still be considered as evolving at this point. The concerns, ideas, and suggestions of campus stakeholders will need to be heard and may indeed modify the plan. It might be best to consider this stage as a speaking and listening tour rather than a campaign in the marketing sense. There is a balance to be struck, here. Campus stakeholders

may have some legitimate concerns or new ideas that should be considered—one is always well advised to listen to the people who will implement or pay for your plan. At the same time, it is important to preserve the core concepts and goals of the initiative and not let them be watered down or hijacked by other agendas. In many cases, stakeholder reluctance or skepticism is the result of not fully grasping the vision behind badging, or not understanding how it is different from more familiar academic structures and procedures. Skeptical stakeholders may require a second or one-on-one version of the pitch to catch on. If a single stakeholder is still reluctant after this, it may be best to work around that person, where possible; if larger numbers or whole sectors of stakeholders are reluctant, it is probably a sign that the plan needs to be revised.

With this in mind, the core audiences recommended for this speaking and listening tour are faculty and staff, and institutional leadership. For an initiative to be successful, faculty and staff must be able to buy in to the core idea, imagine their own roles in it, see the benefit to themselves and their unit, and have their concerns taken into account. If the core ideas are grasped and accepted, institutional hurdles or roadblocks will be seen as details to be worked out; without that buy-in to the core idea, “Yes, but what about...?” will constantly derail meetings and encourage cynicism about the project. Still, it’s important that the implementation details—and people’s concerns about them—be acknowledged at this stage of the process. Faculty and especially staff are used to having new imperatives come down from administration or regulators, and it is not always the case that their input is sought or their additional time and effort acknowledged or compensated. Faculty and staff should be empowered to see themselves as having important roles in the badging process, to understand how new responsibilities will relate to existing ones, and to see the project as aligned with their values.

Communicating with institutional leadership presents a somewhat different challenge. Upper level administrators, who are constantly hearing about the need for career readiness from legislators, trustees, and employers, are likely to welcome an idea that offers a clear path to such readiness. They also need to understand what makes badging distinct from other career initiatives, so they can communicate that distinction clearly to external constituencies. To address a common concern within IHEs, administrators should be able to explain how badging complements established academic programs without replacing them. Our earlier explanation of the “power of and” was particularly useful at this stage for FGCU. Administrators will also need to know what kind and level of resources they are being asked to provide. At this stage, the badging team will not be able to produce a detailed budget, and administrators likely will not expect one; however, you can outline the kinds of human and financial resources needed for the project. University leaders are often aware of projects and resources across the institution and beyond that might be leveraged to help a badging project get off the ground, so these conversations can be very useful for development of the project. For meetings with upper level administration, we recommend providing the full white paper along with a shorter executive summary and presentation.

At FGCU, badging champions conducted an extensive speaking and listening campaign from the point the white paper was completed through the next semester; a less intensive version of that campaign is still ongoing. An upper level administrator led the white paper group, so administration was aware that a badging initiative was in development well before the plan was completed. Still, a formal presentation to put the full plan in front of leadership was necessary to keep the project in line with institutional imperatives.

For example, in Florida, State University System institutions are rated by the state Board of Governors using a complex system of performance metrics. These metrics are ultimately tied to funding, and are the subject of intense interest from the state and local oversight boards. One metric measures percent of

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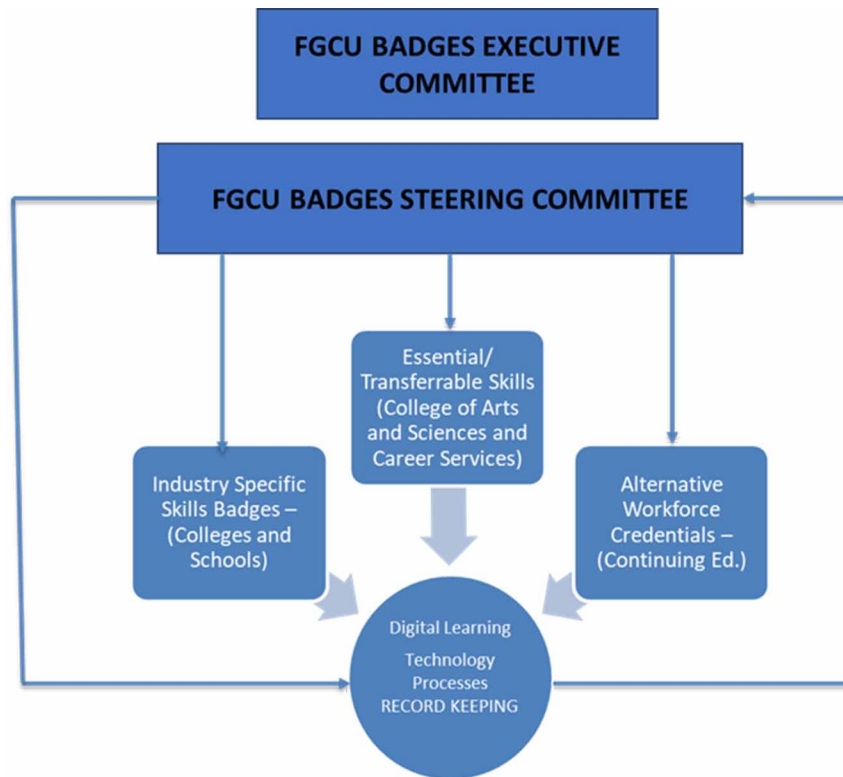
graduates employed above a certain salary threshold one year from graduation. Being able to position the badging program as a remedy to the challenge posed by that metric was an important selling point to administration; the badging initiative in turn gave our administration something concrete to offer in response to trustee and Board of Governors demands for action to improve on this measure. When the Florida state legislature passed a bill mandating implementation of skill badges that students in each State University System institution, FGCU had already been planning and piloting badges for more than a year. Upper administration was attracted to the idea that FGCU could become a leader in the system by going above and beyond what the statute mandated.

On the faculty and staff side, our speaking and listening campaign was more dispersed. Members of the white paper team spoke with faculty from different Colleges and units, including the Academic Engagement unit, which at FGCU encompasses a range of student success functions from internships to career development. Relatedly, forming the FGCU Digital Badges Steering Committee was itself an exercise in building understanding and buy-in. The members FGCU recruited for that team were chosen for their potential to influence their respective units or offices. At your institution, as at FGCU, some units or majors may perceive the benefits of a badging program more readily than others. Also, faculty across the institution may struggle to understand why badges should be structured across academic silos, rather than focused only on students from their own unit. For example, we have had to constantly reinforce the message that we intend to badge transferable skills such as critical thinking in their transferable form, and not just as a measure of competence within one discipline. FGCU's badge pathways guide students to show achievement of core skills across the whole of the college experience (i.e., general education, electives, course in the major, and cocurricular activities), which is different than the major-centered focus to which some faculty may be used. Faculty may also be concerned about how a badging initiative will affect faculty compensation and how it will figure into faculty loads. This is true particularly if badges involve implementing new assessments, as this type of faculty work is frequently uncompensated when undertaken in program or accreditation assessment contexts. It will be vital to have a plan for valuing badging work publicly, and rewarding it fairly.

Step 5: Broaden Campus Involvement by Establishing a Steering Committee

The white paper group is in charge of making the case for badging and creating the initial conceptual framework. The steering committee represents a second stage in development and implementation. The goal of the steering committee is to create a comprehensive plan to design and implement digital credentials in line with the conceptual framework outlined in the white paper. The steering committee focuses on designing a new credential ecosystem and infrastructure within the institution, as well as on working with employers and other stakeholders in the region. Steering committee members bring the voice of the campus community to the University's implementation plan through their engagement with peers. For this communication pipeline to be effective, members of the committee must be diverse, and the committee must include representatives from across the campus, including faculty, staff, and administrators. Within the larger steering committee, an executive committee focuses on defining strategies and researching best practices (Figure 3).

Figure 3. FGCU digital badges committee structure



At FGCU, the Badging Steering Committee was charged by the President to implement the strategic initiative on Microcredentials and Digital Badges as described in the white paper. Core members included:

- Faculty credentialing champions, ideally from each College and School.
- Deans and/or Associate Deans, ideally from each College/School.
- Career Services.
- Student Advisor(s).
- Curriculum specialist(s).
- Representatives from continuing education/Alumni Association.
- Representatives from Digital Learning.

The external employer advisory team includes:

- Targeted Industry Leaders (industry-associated champions)
- Regional workforce initiatives
- Non-profit organizations

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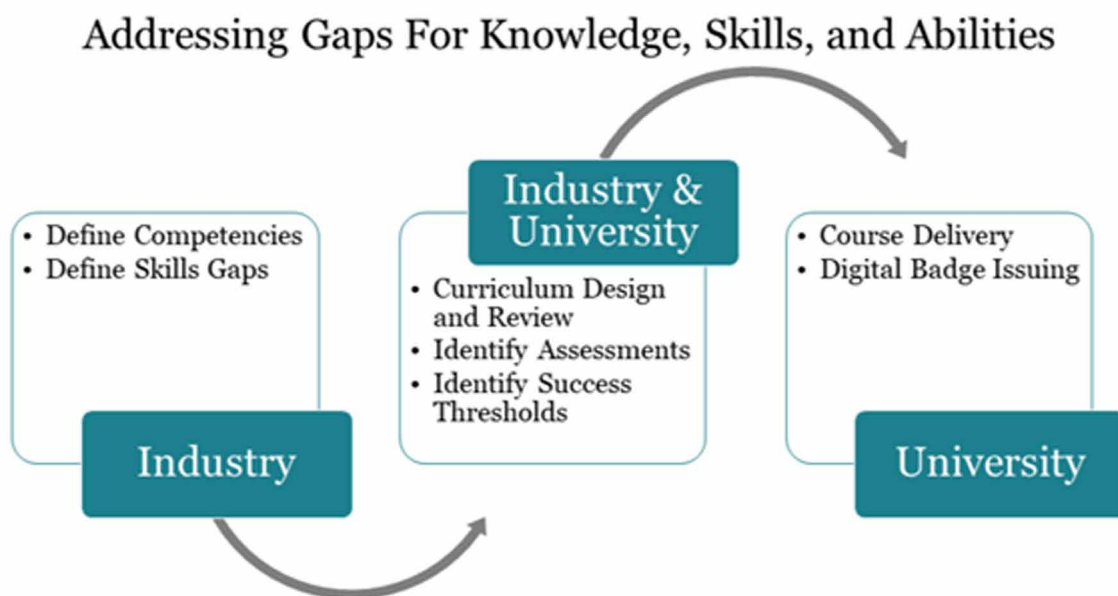
The core objectives of the steering committee include:

- Assessing information coming from pilot badging programs to inform planning for a scaled-up badging initiative within a defined time frame.
- Adapting the badging concept to the needs and strengths of different parts of the university.
- Recommending a sustainable institutional structure, including processes, procedures, policies, and resources.
- Recommending policy changes that may be necessary for adopting digital badges.
- Becoming a team of digital credentials champions.
- Coordinating decision makers at all levels of the institution to adopt the digital credentials through effective processes and procedures.
- Establishing key data points to help inform employers and industries about the needs for a new approach to skills recognition and demonstration.
- Creating internal and external communication and marketing plans to publicize the value of the microcredential initiative.

Step 6: Collaborate with Employer Stakeholders to Develop Initial Badging Pilot Programs

Because the goal of microcredentials and digital badging programs is to respond to specific workforce challenges, partnering with employers is key to the success of your initiative. Working with regional industry partners to design the programs will help you close specific and real skills gaps, secure employer endorsement, and enhance the efficacy and credibility of your program.

Figure 4. Industry and university roles in the development of FGCU's industry specific micro-credentials



IHEs and local industry have mutual goals and interests. Microcredentialing programs are both a consequence of this interdependence, and a catalyst for recognizing and leveraging it. Students are attracted to a regional university in part because they expect high-skills/high-wage employment in the region; but employers can grow employment opportunities in those higher wage jobs only if higher education teaches the competencies needed. Through microcredentialing programs, IHEs and industry can collaborate to create “on ramps” to connect graduates with emerging employment opportunities (Figure 4). If an IHE is to be a driver for economic diversification in the region, it needs to find creative ways to connect general degrees to specific jobs or careers and industries (Felton et al., in press).

To develop microcredentials in partnership with expert faculty members, FGCU dedicated institutional resources to the task and created opportunities to have strategic conversations with industry leaders to identify skills gaps:

- The Office of Strategy and Program Innovation schedules periodic meetings with local employers and industry leaders to talk about competencies needed in specific industries. Once these conversations identify a skills gap that needs addressing, subject matter expert faculty members are invited to these conversations to discuss creating curricula and relevant assessments. Then, the expert faculty member becomes the University point of contact to lead the partnership.
- In the President’s Advisory Circle on Workforce and Economic Development, the FGCU President meets with industry leaders for strategic conversations about building talent pipelines for specific industries. This is an effective channel to identify workforce and professional development needs.
- FGCU is in partnership with a community-based workforce development program, the Southwest Florida FutureMakers Coalition. FGCU representatives attend regional conversations with employers and collaborate to help Southwest Floridians earn the high-quality credentials needed to enter the workforce. The regional goal, which aligns closely with FGCU’s microcredentialing initiative, is to make sure 55% of adults between the ages of 25-64 in the region have education beyond high school by 2025 (Southwest Florida FutureMakers Coalition, 2020).

Step 7: Identify and Implement the Technology Necessary to Support Your Badging Plan

IMS Global Learning Consortium oversees the specifications of Open Badges, a technical standard for microcredentials. Open Badge standards ensure the issuing institution and learner’s identities can be verified, confirm specific criteria were met to receive the badge, empower the badge earner to combine the badges earned at one institution with open badges they have earned elsewhere, and retain student choice over which badges to share (IMS Global Learning Consortium, 2020). A number of badge management systems are compliant with the Open Badges standards (Open Badges, 2020) and, as the market for these products continues to grow, the choices available to IHEs are likely to expand.

Similar functionality exists across the available systems. They all document the requirements for earning a digital badge, track student participation and progress towards meeting badge requirements, award badges when competencies are met, and store and share badges earned. Less common features include pathways that allow multiple badges to be combined or stacked to demonstrate competency of a broader skillset, and a portfolio for students to store artifacts of evidence of the work completed during their skill development journey. Some badge management systems can be integrated with a learning management system (LMS). This allows IHEs to use LMS tools to measure competencies—either within

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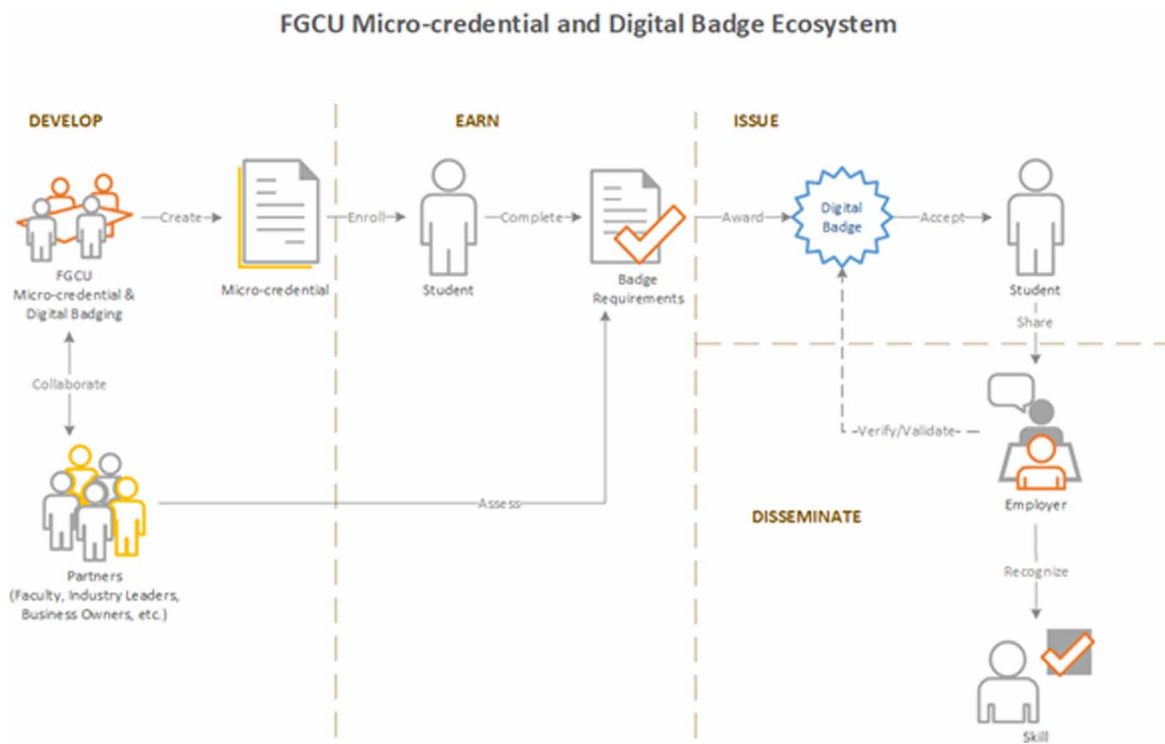
existing courses or within unique badge assessments—and communicate with the badge management system when the criteria for earning a badge are met.

Your institution should consider the following features and functionality during their selection of a badge management system:

- Issuing multiple badges that are independent of each other.
- Issuing badges that can be combined to satisfy requirements of a badging pathway.
- Integration within an LMS.
- Compliance with institutional policies, such as data security.
- Alignment with budget and staffing resources.
- Flexibility to accommodate an expansion from a pilot program to a full scale-up.

Because FGCU plans to develop badging pathways in which multiple digital badges are stacked, we selected an Open Badges certified badge management system that supports this functionality. FGCU's three distinct badge categories (i.e., industry-specific, transferable skills, and continuing education) required slightly different LMS integration and processes, and the institution had to consider the impact scale-up might have. Above all, decisions regarding technology should be driven by the goal of matching available tools to the goals of your comprehensive digital badging ecosystem (Figure 5). FGCU invested significant time on the badge system selection.

Figure 5. FGCU microcredential ecosystem



Implementation of the badge management system took place over a period of two months, leading up to the first pilot program allowing for system administrator training provided by the vendor, process design (e.g., creating the badge issuer profile, setting up unique email accounts for badge communications, and developing naming conventions), and fine-tuning specific responsibilities (e.g., routing of helpdesk calls).

Step 8: Conduct an Inventory of Existing Curricular Elements and Cocurricular Experiences to Develop Pathways for Skills Badges

Badging and microcredentialing may be a new trend in higher education, but IHEs are likely to have in place many of the elements needed to launch a badging program. Indeed, one way to pitch badging initiatives to your institution's internal stakeholders is as a repackaging of things the institution is already doing. To a significant degree, the function of badges is to render the invisible visible by giving recognition to skills that are taught in college, but never explicitly recognized. This invisibility is particularly apparent for transferable skills such as critical thinking, communication, and teamwork. In fact, any IHE offers students multiple opportunities to learn and develop these skills; they just do not show up on a traditional transcript because they are not the name of a course or major. In order to badge skills of this kind, it is not usually necessary for institutions to add additional instructional content. Rather, IHEs need a way to track skills development across courses and academic silos, as well as cocurricular activities where students practice those skills outside the for-credit curriculum.

Recognizing that a badging initiative will utilize elements from across the institution and taking an inventory of existing assignments, events, programs, and offices are important next steps. The goal here is to identify items that might make a suitable component of a badging pathway. This process will engage faculty and staff, which will also help secure buy-in for the initiative. Once you have found components for badging pathways, you will need to sort them according to the skills you wish to badge. The challenge here will be to step outside the traditional boundaries of a specific curriculum or program to recognize which components fit into a given cross-disciplinary badging pathway.

FGCU initially looked to existing assignments and campus activities for badging elements to support our transferable skills badges. By their nature, transferable skills are deployed in a wide variety of contexts—this is what makes them “transferable.” This is true in the workplace, where a core skill (e.g., oral communication) is applied in a sales call, an interview, a product pitch, a shareholder meeting, a video post or a training workshop. It is also true in the college curriculum, where oral communication techniques are formally studied in a course such as Public Speaking, but also developed through assignments in other courses (e.g., a research presentation, a group discussion, a debate, a team project), or in cocurricular or extracurricular activities such as being an admissions tour guide or being in the mock trial club. Understanding the distributed nature of transferable skills in both curriculum and career, we knew it would not be appropriate to identify such skills with a specific course or academic discipline. To capture the wide distribution of transferable skills in the workplace and classroom, the badging initiative needed to cast a similarly wide net.

FGCU's goal was responding to workforce needs identified by employers while ensuring that badges would not tie transferable skills to a single employer. With this balance in mind, we categorized skills according to the competencies developed by NACE, a trade group of corporate recruiters and college career offices (NACE, 2021). These competencies are widely recognized by employers as the core skills

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required for professional success across a range of industries, and we have found that employers are happy to participate in badging events that reference NACE competencies.

For each transferable skill, FGCU wanted to ensure that the student both developed the skill and could articulate the skill to others. To those ends, we structured each transferable skills badge to include three elements: Education on the components of the skill and its workplace application; a pathway of badging artifacts designed to demonstrate achievement in the skill; a communication component in which students articulate their skill achievement in a job interview format. Students may propose both curricular and cocurricular elements as artifacts in a particular badging pathway. The badging subcommittee maintains a list of suggested components and has final authority over which count toward completion of a badging pathway. FGCU's badging system allows students the autonomy to choose their own artifacts—including some the badging committee did not anticipate—while still providing them with guidelines and proven pathways.

Step 9: Develop New Courses and Other Activities Associated with Microcredentials to Further Initiative Goals

As we noted above, microcredentials can take many forms. In some cases, it makes sense to create a new course—either credit bearing or noncredit—to which a badge can be attached. In these cases, the badge is supported by the course content, but the badging assessments are separate from the regular grading structure of the course. Considerations for developing new credit-bearing courses with associated badges include:

- Aligning with the institution's processes and submission deadlines for new curricula.
- Drawing a clear distinction between the grades a student receives in the course and the badging assessment activities. Badging assessments measure specific knowledge, skills, and abilities in a work context, rather than in an academic context. Fencing off badge components from the main graded parts of the course helps IHE's respond to industry-identified needs while protecting the faculty member's academic freedom.

One of the earliest successes of FGCU's microcredentialing initiative was the development of an industry-specific badge tied to a new for-credit course. Faculty followed the curricular approval processes to create an elective open to the entire University: "Medical Device Industry." Developed through an 18-month process working in collaboration with an industry partner who is a leader in the global medical device industry, the Medical Device Industry course and its associated badge created a model for incorporating the industry partner's expertise. In this model, the insight of the employer helps ensure needed competencies are being taught, in much the same way a specialized program accreditor might do; the faculty member determines how best to teach them.

Students receiving a grade of B or higher in the academic course become eligible for the badging assessment, which, in turn, involves several steps: A competency exam on which they need to score at least 80%, a written presentation, and an oral presentation to industry experts at the employer's corporate headquarters. Thus, a passing grade in the academic course does not guarantee achievement of the microcredential badge; rather, the badge is tied to a demonstration of specific knowledge and competencies in a work context.

Step 10: Create Branding and Marketing Materials and Strategies, Including a Web Site, to Inform Multiple Constituencies About the Growing Initiative

Because digital badging is so new in higher education, the initiative will require ongoing marketing to familiarize all stakeholders with the concept and the benefits of the program. It takes succinct and powerful messaging to educate your institution's stakeholders on microcredentials, and to interest students in pursuing badges.

A comprehensive plan will include internal branding and marketing to create organic conversations about microcredentials before the team makes formal presentations to faculty and chairs at the colleges. The process of building a culture of support for the microcredentialing initiative will take time; this is an early and critical step in your branding and marketing campaign. A benefit of starting with less-formal conversations is discovering already existing work by faculty that aligns with the microcredential initiative—these may become your pilot programs. When the microcredentialing initiative is ready to be shared with an external audience, a well-designed Web site can efficiently reach diverse constituencies, quickly motivate them to earn one or more digital badges, and enroll interested students without requiring much staff effort. A Why Earn Digital Badges section should head the Web page, to define digital badges and provide reasons students will want to earn one or more. Videos (either animated or with live actors) are particularly useful to describe how digital badges work, demonstrate how to earn them, and emphasize their value. As with any Web site, the key is to keep the audience's attention. Although academics are inclined towards detailed explanations, student and public facing Web sites work better if they are not text heavy. A Web site with powerful visuals and short videos, along with concise text, can quickly and efficiently educate a diverse audience, including faculty, students, and employer partners.

The Web site can also make enrolling for a digital badge course more efficient. Because earning a digital badge is a completely elective activity, students may not follow through if enrolling in a digital badging pathway is cumbersome or takes an inordinate amount of time. Ideally, students will be able to enroll in a digital badging pathway through the Web site; at minimum, they should be able to enter their contact information and then quickly be contacted by a staff member. The Web site should not be made public until it includes several active digital badge pathways in which students can enroll right away.

A centralized branding campaign for the entire digital badging initiative will complement the Web site and establish the identity of the initiative. This branding effort—whether it is created in-house or through an outside firm—should be led by the microcredential executive committee to ensure all the parts of the initiative are presented accurately, and seen as part of a coherent plan. For example, graphic design elements common to all badges and marketing materials will create cohesive branding. In tandem, faculty and staff champions from different departments and colleges can reinforce the message that this is a strategic and IHE-wide initiative.

At FGCU and with any complex digital badging initiative, we have had to promote (and explain the differences among) badges that fall into different categories. At FGCU, the categories are “industry specific,” “transferrable skills,” and “continuing education and skills academy.” With an eye to demonstrating that these categories are all part of the FGCU microcredential system, we used similar FGCU icons and changed the font and color of the ribbon to make it easy to distinguish the different types of badges (Figure 6).

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Figure 6. FGCU's digital badge designs for each microcredential category



The FGCU digital badging Web site sorts the current and upcoming digital badging opportunities into these three categories, so that an interested student or working professional can quickly find the type of digital badge of interest to them. For example, to learn more about the Oral Communication badge, a prospective badge earner can click into the Transferable Skill Badges subpage and have access to content that explains both transferable skill badges in general and the specific requirements and instructions for earning the Oral Communication badge.

Step 11: Determine Appropriate Staffing Needs for Continuing Oversight, Growth, and Support of the Initiative

A new initiative will make new demands on personnel and resources. A successful comprehensive digital badging initiative requires sufficient staffing for oversight, development, implementation, and support; also, your institution will need to develop a staffing model that allows it to scale the initiative. Badge management system administration, end-user training, and technical support usually operate more efficiently if they are centralized within a single department. The department that supports the technology used to deliver academic courses is often a good choice, although the institution may need to budget for expanded staffing.

During the pilot phase at FGCU, the FGCU Digital Badging Executive Team oversaw the development of new processes and policies related to adding new badges, which provided an opportunity for the team to learn what resources would be needed to implement and oversee this new initiative. Once the pilot phase was in progress, centralized oversight of the FGCU Digital Badges initiative moved to FGCU's Office of Innovative Education and Partnerships, in the Office of Strategy and Program Innovation, which includes the Department of Digital Learning and Continuing Education & Skills Academy. This centralized oversight ensures efficiencies in attending to critical tasks such as reviewing new badge suggestions, continuous review of existing badges, developing new processes and policies related to adding new badges, marketing and dissemination of information, and managing the growth of the program.

We found that, in order to leverage faculty and staff expertise, the task of developing new microcredentials is best divided among a faculty subject matter expert, an instructional designer, and an instructional technologist. Because FGCU instructional designers are assigned to support specific departments/programs, faculty and instructional designers develop a solid and trusting working relationship. These

existing relationships facilitate collaboration on microcredential courses and can expedite the design and development of microcredential courses.

With support from upper administration, new resources have been provided for scaling the micro-credentials programs, including addition of an Assistant Vice President with badging as a major part of her duties, and another staff member attached to the Assistant VP. Funding was also approved for a new Instructional Technologist position whose primary responsibility is administration and support of the badge management system, and one Instructional Designer to offset the workload associated with developing new digital badging courses.

Step 12: Identify Long-Term Budget Models to Ensure Program Scalability and Sustainability

For early start-up costs, most IHEs rely on support from upper administration. However, to ensure scalability and sustainability, your institution will need to identify long-term sources of support for its budget. Promising sources of financial support could be from an industry partner, from philanthropy, legislative budget requests or perhaps through a redistribution of existing resources. It is important to begin these conversations early; faculty champions, Department Chairs, and Deans may have suggestions for auxiliary revenue streams.

Creating standard budget modules will help you explain your budget to potential funders. For example, for a badge that is not associated with a credit-bearing course, you will need to know how much to budget for compensating faculty and expert instructors and how much for administrative and technology support. If a badge is specific to an established course, the institution might need only to compensate the faculty member or course coordinator for the badging competency examinations.

Budget design has been an iterative process at FGCU, and we are still developing best practices. Issues that are likely to surface for microcredentialing programs at IHEs include:

- Standardizing faculty costs across divisions and colleges.
- Establishing the cost of maintaining the badge inventory, including faculty and staff costs, marketing, and Web site design and development.
- Creating compensation models for faculty assessing badge artifacts and interviews for the transferable skill badges.
- Identifying point people with specific expertise in content areas, so that IHEs have human capital devoted to the initiative in multiple areas of the IHE.
- Continually benchmarking against other microcredential programs, so that IHEs do not outprice the market.
- Strategizing about the most efficient and sustainable way to organize the microcredentialing infrastructure at an IHE.
- Timing the scaling of the IHE's program to leverage complementary initiatives.

Next Steps: Developing a Process for Assessment and Quality Assurance

It is necessary to plan and create a process for assessment and continuous improvement of the badging initiative. Because FGCU's is still a new microcredentialing program, we are still developing best practices for assessment and quality assurance. With so many stakeholders (i.e., students, industries,

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faculty, and administration), FGCU's assessment model will need to encompass a number of different strategies to measure:

- The impact of the badge on the learner's employment outcomes.
- The value of the badge to industry.
- The need for new technologies to deliver badges.
- The need for resources such as staff and budget.
- The adequacy of faculty involvement and compensation models.
- The efficacy of marketing strategies.
- The impact of the microcredentialing program on IHE auxiliary revenues.

CONCLUSION

Rapid changes in the world of work have called for IHEs to rethink their approach to student employability. Some think these changes call for a complete overhaul of undergraduate education, while some even question whether the curriculum and institutional structures of the IHE are equal to the task of preparing students for the future of work. To the contrary, at FGCU, we have found that career preparation can fruitfully be integrated into the traditional college experience; the two do not need to be at cross purposes. Badges and microcredentials can both supplement existing academic programs, creating bridges to specific jobs, and can recognize valuable core career skill development that is already a feature of IHE curriculum. FGCU's experience developing and implementing a comprehensive digital badging initiative has benefited our students, energized our faculty, and created opportunities to partner with regional industry. We believe that microcredentials and digital badges will continue to be a complement to degree programs and a way to verify learning achievement for particular skills, knowledge, and abilities needed to meet employer needs and prepare students for the world of work. The badging initiative being implemented at FGCU will not match exactly your institution's needs or context, but the career preparation need and institutional toolbox are sufficiently similar across IHEs that some of FGCU's practices can likely be adopted by others. We trust that the blueprint they presented in this chapter will provide a foundation for other IHEs creating their own digital badging programs.

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