SWIFT CODING NON-CREDIT CERTIFICATE

Digital Flagship Coding Curriculum Plan Summary

OVERVIEW

Why: Once upon a time, coding was something that only computer scientists and programmers knew how to do. In contrast, in the modern world, coding is best understood as a language that permeates through all that we do to solve problems. A base-level understanding of computational thinking and simple coding languages like Apple's Swift language is a powerful skill that spans across disciplines. A base knowledge of a coding language gives any professional the power to solve problems in their respective fields.

How: Digital Flagship is committed to providing opportunities for all at Ohio State to engage with and benefit from coding curriculum. To enable this opportunity, this means creating Swift coding curriculum that allows students to learn coding skills without increasing cost or time to degree. This four-course, co-curricular, competency-based, and self-paced online curriculum would lead students toward a continuing education certificate (non-credit) from Ohio State in the basics of Swift coding and app development processes.

SUMMARY DETAILS

1. **Title of certificate(s):** Swift Coding and App Development Certificate
2. **Anticipated date for launching certificate program**: May 2019
3. **Department(s) offering certificate**: The Office of Distance Education and eLearning
4. **Contact Person(s):**
    a. Jessica Phillips (phillips.1507@osu.edu)
    b. Sam Smith (smith.10439@osu.edu)
    c. Digitalflagship@osu.edu
5. **Aligned category for this non-credit certificate program**: Category 4, Workforce Development Certificate of Completion Program

6. **Main subject**: Swift coding and app development
7. **CIP Code**: 11.0201
8. **Certificate program details** (description, hours to complete, course and program outcomes)

COURSE 1: Start to Code with Swift
Hours to complete: 90
Course Outcomes: • Apply Swift coding basics and logic. • Use xcode and Swift basics to develop a basic app. • Identify importance of coding in current job market.
Topics: Myth-busting coding stereotypes, debugging and problem solving, building an interface, setup portfolio, Swift language basics and logic, introduction to Xcode, make a slideshow or flashlight app, app-developing/coding communities at Ohio State, reflecting on connections to major/interest areas.

COURSE 2: Build Your First App
Hours to complete: 90
Course Outcomes: • Apply design thinking and user-experience design to your app idea. • Engage in feedback and testing. • Build your own basic app.
Topics: Design thinking, storyboarding and sketching, user-experience design, feedback and testing, taking an app to the app store (cost and process), peer feedback, taking an idea forward to a basic app.

COURSE 3: Advance Your Swift Coding Skills
Hours to complete: 90
Course Outcomes:

COURSE 3: Advance Your Swift Coding Skills
• Use custom user-interface design strategies. • Identify key factors impacting privacy and security. • Identify protocols for app accessibility. • Explore the role of databases and file systems in app development and delivery.
Topics: Custom user-interface with Swift coding, databases and file systems, advanced debugging, privacy and security, accessibility standards

COURSE 4: Bring Your App to Life
Hours to complete: 90
Course Outcomes: • Explore development of a business proposal for your app idea. • Identify what intellectual property means to you and your users. • Apply app development best practices to your app project.
Topics: Capstone app project, portfolio completion, the business side of app development, working with teams, intellectual property, next steps forward (connection to CSE, pathway to Apple's Swift Coding certification, issuance of certificate through Canvas).

9. **Pre-requisites for participants:**
    a. Course 1: No prerequisites
    b. Course 2: Must have completed Course 1
    c. Course 3: Must have completed Course 1, 2
    d. Course 4: Must have completed Course 1, 2, 3
10. **Fees to participants**: Faculty, staff, and students will have access to the certificate program free of cost. Future plans include development of a fee-based model for participants in the Columbus community and across Ohio (K-12, partner adult education programs, etc.). We are also exploring possible free or low-cost access to the curriculum for alumni.
11. **Anticipated participation numbers**:
    a. Year 1: 500

   b. Year 2: 1000
   c. Year 3: 1500

12. **Delivery modes**: Delivered fully online using Carmen Catalog.
13. **Duration**: 90 hours, self-paced, course section closes after six months.
14. **Certificate completion requirements**: Successful completion of each course with 70% or higher. Submission of final capstone app project with rubric score of 70% or better. Resubmissions accepted after feedback/support provided from Digital Flagship staff.
15. **CEU Alignment**: Exploring for Year 2 expansion to community.
16. **Targeted audience**:
    a. Year 1: Ohio State students, faculty, staff.
    b. Year 2: Ohio State students, faculty, staff, alumni, select community partners (K-12, partner adult education programs)
17. **Evaluation methods**: Quiz, rubric evaluation of app submissions per course, rubric evaluation of capstone app project
18. **Student support**: In-course discussion forums, access to 1:1 support in the Digital Flagship Mobile Design Lab, virtual 1:1 support by request, remedial support via Swift Playgrounds for those with iPad, access to open-access Swift coding workshops on all campuses, access to Digital Flagship Student Mentors.
19. **Program review and success criteria**:
    a. Digital Flagship Student Mentors and staff will test courses prior to launch.
    b. Pilot capped at 45 launches in May 2019 to allow for observation and agile evaluation of course design.
    c. Pre-course and post-course surveys
    d. Post certificate program survey
    e. Success Metric: 25% retention rate from Course 1 to Course 2, based common completion rates for MOOC offerings.*
    f. Success Metric: 10% certificate completion rate, based common completion rates for MOOC offerings.*
    g. Success Metric: Determine impact of various levels of access to the program on skill development, career readiness, and workforce marketability.

References

*Reich, J. (December 2014). MOOC completion and retention in the context of student intent. EDUCAUSE. Retrieved from https://er.educause.edu/articles/2014/12/mooc-completion-and-retention-in-the-context-of-student-intent