Area of Interest: Arts and Design

Mobile Application Design and Development

Ontario College Diploma

Program Code: 1515X01FWO

2 Years

Ottawa Campus

Our Program

Turn your interest in mobile development into a career needed across a number of different industries.

The two-year Mobile Application Design and Development Ontario College Diploma program prepares you to enter the expanding and evolving fields of mobile web and application development. Design mobile website interfaces across different platforms and devices. Learn how to build native applications for mobile devices and use different technologies and programming languages. Topics covered include:

- user interface (UI) design

- user experience (UX) design

- responsive web design

- full-stack web development

- hybrid mobile application development

- native mobile application development

- entrepreneurial business skills

Emphasis is placed on a hands-on approach to developing sites and applications.

In your final semester, prepare for industry by developing a mobile solution for a real-world client. Experience working in teams and participate in the analysis, design, implementation, testing and deployment of your mobile solution.

Upon graduation, you may find work in all levels of government, as well as with start-ups and a wide variety of market sectors including technology, healthcare, business, marketing, finance, education and communications. Some available jobs include:

- mobile app developer

- full-stack developer

- UX designer/developer

- web designer

- web developer

- interaction designer/developer

- QA tester

SUCCESS FACTORS

This program is well-suited for students who:

- Are interested in working with computers and mobile devices, such as smartphones and tablets.

- Enjoy the challenge of working with evolving mobile technology.

- Have good problem-solving skills and enjoy solving logic problems.

- Enjoy non-repetitive tasks and the challenge of developing new and creative solutions for mobile applications.

- Can work independently and as a productive member of a team.

- Are organized in their work and pay attention to detail.

- Are committed and dedicated.

- Are proficient with basic computer skills, such as keyboarding and the use of office software suite.

Employment

Upon graduation, you may find work in all levels of government, as well as with start-ups and a wide variety of market sectors including technology, healthcare, business, marketing, finance, education, and communications. Some available jobs include: mobile app developer, full-stack developer, UX designer/developer, UX researcher, UI designer/developer, web designer, web developer, interaction designer/developer, QA tester.

Learning Outcomes

The graduate has reliably demonstrated the ability to:

- Identify requirements and implement mobile solutions.

- Promote mobile technology solutions using business communication and marketing skills.

- Create effective user interfaces that leverage evolving mobile device capabilities.

- Design and develop websites that deploy to different devices and platforms.

- Design and develop cross-platform applications built with rich-media and HTML-based technologies.

- Design and develop device-specific, native applications.

- Research and apply various software development kits (SDKs), frameworks and toolkits.

- Integrate database and server-side technologies to provide complete mobile development solutions.

- Build, test, and deploy secure mobile solutions using appropriate network technologies.

- Collaborate in a team-based, mobile development project.

- Identify and apply discipline-specific practices that contribute to the local and global community through social responsibility, economic commitment and environmental stewardship.

Program of Study

Level: 01	Courses	Hours
MAD8010	Digital Citizenship	42.0
MAD9011	Mobile Design Fundamentals	42.0

MAD9013	Cross-Platform Web Design	56.0
MAD9014	Cross-Platform Web Development	70.0
MAD9112	Essential Tools for Mobile Development	42.0
Level: 02	**Courses**	**Hours**
DSN2100M	Design Thinking	42.0
ENL1813M	Communications I	42.0
MAD9020	User Interface Design	42.0
MAD9021	Introduction to Object Oriented Programming	56.0
MAD9022	Fullstack: Frontend Development	70.0
MAD9124	Fullstack: API Development	70.0
Level: 03	**Courses**	**Hours**
ENL6007	Professional Communication in Digital Media	42.0
MAD9034	User Experience Design	56.0
MAD9132	Android Application Development	70.0
MAD9135	Multi-Platform Mobile App Development	70.0
MAD9137	IOS Development	70.0
Level: 04	**Courses**	**Hours**
MAD9042	Mobile Industry Trends	56.0
MAD9143	Branding and Marketing for the Mobile	42.0
MAD9145	Applied Industry Projects	84.0
MAD9146	Cross-Platform Native Development	70.0
Choose one from equivalencies:	**Courses**	**Hours**
GED1515	General Education Elective	42.0

Fees for the 2023/2024 Academic Year

Tuition and related ancillary fees for this program can be viewed by using the Tuition and Fees Estimator tool at https://www.algonquincollege.com/fee-estimator .

Further information on fees can be found by visiting the Registrar`s Office website at https://www.algonquincollege.com/ro .

Fees are subject to change.

Admission Requirements for the 2024/2025 Academic Year

College Eligibility

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- Academic and Career Entrance (ACE) certificate; OR

- General Educational Development (GED) certificate; OR

- Mature Student status (19 years of age or older and without a high school diploma at the start of the program). Eligibility may be determined by academic achievement testing for which a fee of $50 (subject to change) will be charged.

Program Eligibility

- English, Grade 12 (ENG4C or equivalent).

- Mathematics, Grade 12 (MAP4C or equivalent).

- Applicants with international transcripts must provide proof of the subject-specific requirements noted above and may be required to provide proof of language proficiency. Domestic applicants with international transcripts must be evaluated through the International Credential Assessment Service of Canada (ICAS) or World Education Services (WES).

- IELTS-International English Language Testing Service (Academic) Overall band of 6.0 with a minimum of 5.5 in each band; OR TOEFL-Internet-based (iBT) Overall 80, with a minimum of 20 in each component: Reading 20; Listening 20; Speaking 20; Writing 20; OR Duolingo English Test (DET) Overall 110, minimum of 110 in Literacy and no score below 95.

Not sure if you meet all of the requirements? Academic Upgrading may be able to help with that: https://www.algonquincollege.com/access/ .

Should the number of qualified applicants exceed the number of available places, applicants will be selected on the basis of their proficiency in English and mathematics.

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Application Information

MOBILE APPLICATION DESIGN AND DEVELOPMENT
Program Code 1515X01FWO

Applications to full-time day programs must be submitted with official transcripts showing completion of the academic admission requirements through:

ontariocolleges.ca
60 Corporate Court
Guelph, Ontario N1G 5J3
1-888-892-2228

Students currently enrolled in an Ontario secondary school should notify their Guidance Office prior to their online application at http://www.ontariocolleges.ca/ .

Applications for Fall Term and Winter Term admission received by February 1 will be given equal consideration. Applications received after February 1 will be processed on a first-come, first-served basis as long as places are available.

International applicants please visit this link for application process information: https://algonquincollege.force.com/myACint/ .

For further information on the admissions process, contact:

Registrar`s Office
Algonquin College
1385 Woodroffe Ave
Ottawa, ON K2G 1V8
Telephone: 613-727-0002
Toll-free: 1-800-565-4723
TTY: 613-727-7766
Fax: 613-727-7632
Contact: https://www.algonquincollege.com/ro

Additional Information

Although basic computer skills are recommended, programming experience is not a requirement to enter the program.

Contact Information

Program Coordinator(s)

- Steve Griffith, mailto:steve.griffith@algonquincollege.com , 613-727-4723, ext. 3408

Course Descriptions

DSN2100M Design Thinking

Human-centred approaches are among the best methods of generating innovative solutions for people at work, at home or within your community. Design thinking is a user-centred method of creative problem solving applicable any time you need to generate new ideas. It is about embracing mindset shifts and tackling problems from the user's perspective. Students learn the five-step process while involving the user each step of the way. Through research discussions and analysis, students work, first independently, then with a team, to emphasize with their users, define a problem, and then ideate, prototype and test an original solution that places people at the heart of a challenge.

Prerequisite(s): none
Corerequisite(s):none

ENL1813M Communications I

Communication remains an essential skill sought by employers, regardless of discipline or field of study. Using a practical, vocation-oriented approach, students focus on meeting the requirements of effective communication. Through a combination of lectures, exercises, and independent learning, students practise writing, speaking, reading, listening, locating and documenting information, and using technology to communicate professionally. Students develop and strengthen communication skills that contribute to success in both educational and workplace environments.

Prerequisite(s): none
Corerequisite(s):none

ENL6007 Professional Communication in Digital Media

Strong communication skills are a key part of professional success. Students focus on writing clear, correct and concise print and web-based content, and speaking confidently to a variety of audiences. With these skills, students can promote themselves, work well with others, sell ideas, and connect with colleagues and clients. Using workplace scenarios, students write (e.g., letters, emails, web content) and speak (e.g., presentations, meetings, phone calls, interviews) to a variety of audiences. Students also identify their own communication strengths and challenges and prepare a plan for ongoing professional development.

Prerequisite(s): ENL1813M
Corerequisite(s):none

GED1515 General Education Elective

Students choose one course, from a group of general education electives, which meets one of the following four theme requirements: Arts in Society, Civic Life, Social and Cultural Understanding, and Science and Technology.

Prerequisite(s): none
Corerequisite(s):none

MAD8010 Digital Citizenship

Increasingly, students are experiencing online components as part of their course delivery. Blended and online courses require specific skills and knowledge essential for student success in these environments. Significant emphasis is placed on the social aspects of learning, time management and study skills, socio-cultural aspects of learning, community building, group work and networking. The content is scaffolded using three delivery modes: face-to-face, blended and online. Students identify motivations for learning, understanding and level of ability, and self-directed learning competencies. Students also develop online communication skills, explore effective ways to communicate in an online environment, and learn how to give constructive and proactive feedback to others even when they do not share the same point of view.

Prerequisite(s): none
Corerequisite(s):none

MAD9011 Mobile Design Fundamentals

Students are introduced to mobile design fundamentals and graphical user interface design tools. The design concepts include user interface visual elements, principles, accessibility and usability. Students gain production experience and skills implementing mobile industry-standard graphics and design tools, which help them create effective interfaces for mobile-first web and mobile applications. Students apply hands-on learning with different software packages to create visual elements, icons, splash graphics, scalable vector graphic (SVG) animations and wireframes for mobile user interfaces.

Prerequisite(s): none
Corerequisite(s):none

MAD9013 Cross-Platform Web Design

Technologies on the web evolve quickly. Every year brings new devices and with them new capabilities. These devices present many challenges and opportunities to web developers. Students review fundamentals of web development using hypertext markup language (HTML), and cascading style sheets (CSS), with a focus on developing responsive and mobile websites. Multiple IDEs are introduced and used to complete hands-on projects.

Prerequisite(s): none
Corerequisite(s):MAD9014

MAD9014 Cross-Platform Web Development

While developing native applications for mobile devices can hold many advantages, not every application runs only on a phone, and not every application requires direct access to native device features. Students gain a strong grasp of modern JavaScript development techniques through hands-on practice using Core JavaScript for both NodeJS and Browser environments. Students use the HTML5 stack with JavaScript to access modern Web APIs and build practical web applications that can use remote data sources and be instantly updated across multiple mobile and desktop platforms. Design skills and tools are leveraged to enhance these web applications.

Prerequisite(s): none
Corerequisite(s):MAD9013

MAD9020 User Interface Design

Students learn how to create functional, efficient and enjoyable interfaces. They gain an appreciation for the challenges of building websites and applications that remain functional across different devices and platforms. Usability that allows people to complete tasks on any device, any time, is emphasized. Focus is placed on practical application of students' design software experience in the creation of mobile application interfaces.

Prerequisite(s): MAD9011
Corerequisite(s):none

MAD9021 Introduction to Object Oriented Programming

Students learn the fundamentals of object-oriented programming within the context of mobile application development. Emphasis is placed on the concepts of Classes, Encapsulation, Polymorphism and Inheritance. Concepts are taught while using multiple IDEs and multiple programming languages, in preparation for native mobile application development.

Prerequisite(s): MAD9014
Corerequisite(s):none

MAD9022 Fullstack: Frontend Development

Students build on their web design and development skills through applied practice with modern web development features including Web Components and Service Workers. Students learn to build a range of Full-stack web projects with approaches such as Progressive Web Apps, Single Page Applications, JAMStack applications, plus frameworks such as React, Svelte or Vue. Students work in teams to build Full-stack solutions.

Prerequisite(s): MAD9013 and MAD9014
Corerequisite(s):MAD9124

MAD9034 User Experience Design

Going beyond the basics of graphics and user interface fundamentals, students learn how to combine these elements to create intuitive, efficient and enjoyable products. Students are introduced to a user-centered approach to designing mobile applications. Students begin with user research and build toward creating interaction design specifications in the form of wireframe documents. Topics such as information architecture, navigation and orientation, and interaction

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design principles are discussed and applied.

Prerequisite(s): MAD9020
Corerequisite(s):none

MAD9042 Mobile Industry Trends

This course investigates a variety of current topics related to the mobile industry and app development. While the specific course topics change each year to reflect technological developments in the industry, they can include recent trends in software development and testing, laws concerning data storage and privacy, new hardware technologies in mobile devices, sensor technology, Internet of Things, virtual and augmented reality, and cloud APIs.

Prerequisite(s): none
Corerequisite(s):none

MAD9112 Essential Tools for Mobile Development

Students explore a diverse set of tools that are used in modern mobile development. They get acquainted with the required MacBook Pro and operating systems, such as MacOS and Windows. Students explore leveraging the command line interface in order to control the OS, environment, and files. The Git versioning control system, as well as, native SDKs for both iOS and Android development are also covered.

Prerequisite(s): none
Corerequisite(s):none

MAD9124 Fullstack: API Development

Students extend their JavaScript skills by learning how to develop for the server side. They use a hands-on approach to build secure APIs using NodeJS and NoSQL databases. A variety of tools, frameworks, libraries and packages are taught to direct API interactions, connections to data sources, and communication with client-side applications. Students work with partners to create entire Full-stack solutions.

Prerequisite(s): MAD9013 and MAD9014
Corerequisite(s):MAD9022

MAD9132 Android Application Development

Students learn to develop mobile applications for the Android mobile platform. Students use the Android application programming interface (API), Android software development kit (SDK) and the Kotlin programming language for hands-on development of deployable mobile applications. Designing to conserve battery life on mobile devices is emphasized.

Prerequisite(s): MAD9021
Corerequisite(s):none

MAD9135 Multi-Platform Mobile App Development

Students apply their Full-stack web application skills and framework experience, to create mobile applications for multiple platforms using the same code base. The advantages and disadvantages of building multi-platform mobile applications with different tools are explored as an alternative to the native mobile languages. Frameworks such as Capacitor, React Native, and Flutter are used with hands-on projects to build Android and iOS applications.

Prerequisite(s): MAD9022 and MAD9124
Corerequisite(s):none

MAD9137 IOS Development

Students use the Swift language within the standard Mac OSX development environment to create

native applications for the iPhone and iPad. Working together in teams, students build and test applications. User interface requirements and building for a better user experience is stressed.

Prerequisite(s): MAD9021
Corerequisite(s):none

MAD9143 Branding and Marketing for the Mobile

The mobile landscape from a brand and marketing point of view is examined. Students learn about core brand elements and marketing strategies to successfully launch a mobile brand, analysing marketing performance, as well as other entrepreneurial skills. Working in teams they explore the importance of branding and marketing within the context of real-world mobile development projects.

Prerequisite(s): none
Corerequisite(s):none

MAD9145 Applied Industry Projects

Working in teams, students experience the analysis, design, implementation, testing and deployment of a mobile solution for a real-world client. Important topics from throughout their program of study are applied in this course. Faculty advisors facilitate student teams to demonstrate their skills in the applied project. Student teams make a technical presentation to their faculty advisors and participate in a public showcase of projects.

Prerequisite(s): MAD9034 and MAD9132 and MAD9135
Corerequisite(s):none

MAD9146 Cross-Platform Native Development

Mobile application development can be accomplished through a variety of languages and frameworks. Students learn how to create cross-platform mobile applications, which access native platform features, while using a compiled native programming language. Object-oriented concepts and development techniques are explored using multi-platform app technologies such as .Net Maui. Designing for cross-platform compatibility and conserving battery life on mobile devices are stressed.

Prerequisite(s): MAD9021
Corerequisite(s):none