

Open UToronto MOOC Initiative: 2015 Report

University of Toronto

The University of Toronto continues to lead Canadian institutions in our exploration of the potential of Massive Open Online Courses (MOOCs) as we move into our fourth year of activity. Under the umbrella of the broader [Open UToronto](#) initiative, partnerships with both Coursera and EdX have been extended to continue activity and exploration related to the evolving landscape of online learning.

Our institutional strategy remains focused on addressing the following goals:

- Contribute to the education community and the broader public through sharing of institutional expertise and open curriculum content
- Explore and evaluate a range of pedagogical approaches and open course platforms
- Leverage use of open educational resources through integration into University of Toronto degree program courses
- Showcase the University of Toronto’s capacity as a leading institution for teaching, learning and research

New MOOCs in 2014-2015

While several MOOCs were refreshed and offered as repeat sessions, four new MOOCs were developed over the past year, two on Coursera and two on edX. These new courses were offered through four different divisions and introduced new lead instructors.

Title	Instructor	Division	Platform
Wind, Waves and Tides: Alternative Energy Systems	Jim Wallace	Faculty of Applied Science & Engineering	Coursera
Death101: Shaping the Future of Global Health	Prabhat Jha	Dalla Lana School of Public Health	edX
Teaching with Technology and Inquiry: An Open Course for Teachers	Jim Slotta	Ontario Institute for Studies in Education	edX
iOS App Development in Swift	Parham Aarabi	Faculty of Applied Science & Engineering	Coursera

For full details of all MOOC offerings and activity data please see **Appendix 1 and 2** below.

Extending the work described in our [Report on Second Year of Activity](#), key areas where the MOOC model has provided a catalyst for innovation through the use and re-use of digital content, include:

- Re-use of MOOC content in differentiated fully online degree-credit courses
- Exploration of a range of models beyond the “traditional” MOOCs, including community outreach initiatives and integrated research initiatives.
- Creation of on-demand open course content resources for flexible access.

Highlights from the Past Year

In support of UofT's broader strategic targets, several new initiatives were advanced during the past academic year.

1. Re-use of MOOC content in UOfT degree-credit courses

Several instructors have successfully re-used material originally designed for the MOOC platform in their fully online degree-credit courses, while differentiating and enhancing through additional interactivity and instructor contact. *Introduction to Statistics* as well as *Alternative Energy Systems* built upon the capacity afforded through MOOC design and development, serving as base content for their relevant University of Toronto online course offering. These courses have leveraged their MOOC content to provide a more immersive, engaging and interactive learning experience in their degree-credit courses.

2. Pedagogical innovation in course design

Several of the University's most popular courses (*Learning to Program, Statistics*) have already produced impressive results used in flipped classroom environments. This past year several others have successfully launched engaging outreach and research initiatives. *Teaching with Technology and Inquiry* (INQ101x on edX) was an exemplar as a course that embraced new technologies and teaching strategies to reach out to practicing teachers and teacher candidates. Utilizing external wikis and communication tools, INQ101x offered participants two streams of learning; a basic stream where users interacted with the course content and assessment as well as a design stream where users participated in the basic activities and were also able to work in small groups to develop curriculum. The course was well received in the open learning community.

3. University of Toronto alumni cohort pilot

Beginning October 05, 2015 the University of Toronto launched a second offering of its popular *Introduction to Psychology*, taught by Steve Joordens, but with this session also including a unique space in the course specifically for Alumni. Over 2000 alumni expressed interest in the offering, which incorporates targeted discussion areas, bonus video/lecture content, networking activities, extra support and a live event (in person and streamed online) with professor Joordens. The project will be completed in December 2015.

4. Creation of on-demand open course content resources for flexible access

In partnership with Coursera, and in development with edX, several courses have been (re)designed for an "On-Demand" (Coursera) or "Self-Paced" (edX) model of delivery. Until recently both platforms offered only session-based models. In the traditional session-based model students work through the course as a cohort according to a schedule devised by the course team (typically between 4 and 6 weeks of content). Material is released weekly and there are suggested work hours per week and assessment deadlines for grades. After the course closure date a new student is able access the course material (videos, some assessment, discussions) in an archive, but not complete assessments for grades. In the new On Demand/Self-Paced model all material is released and available all at once. Although a suggested schedule is provided, a student may work through the course as quickly or as slowly as they wish. The greatest benefit to students is that assessment activities are always available and a participant can receive formative and summative feedback as they progress in this mode. Our first four courses to pilot this new model are as follows:

Title	Instructor	Division	Platform
Bioinformatic Methods I (redesign from session based to On Demand)	Nicolas Provart	Faculty of Arts & Science	Coursera
Bioinformatic Methods II (redesign from session based to On Demand)			
iOS App Development in Swift	Parham Aarabi	Faculty of Applied Science & Engineering	Coursera
Behavioral Economics in Action	Dilip Soman	Rotman School of Management	EdX

Launched early in the 2015 academic year as an early pioneer of the "On-Demand" mode course, the *Bioinformatic Methods I and II* courses have collectively had nearly 50,000 enrollments and well over 500 course completions. The *iOS App Development in Swift MOOC* currently in progress has also had a strong uptake. In addition to being offered "On-Demand," both of these are part of a learning experience designed as a series of scaffolded courses to be taken in sequence. A new research project has been initiated by the Online Learning Strategies portfolio and will look at the learner intention, experience and outcomes in the self-paced model.

5. Exploring non-degree program verified certificates for fee

In the summer of 2015 Coursera adopted a default strategy whereby every course offered on its platform would include a for-fee (verified certificate) option. edX is taking a similar approach with a suggested minimum fee for courses to support the platform. To date the University has offered for-fee certificates for the minimum price suggested on each platform at \$49 USD. Both platforms still allow students to enroll in courses at no cost, but the for-fee certificates include various strategies for identification verification to ensure the user that has signed up for the course is following the material and completing the assessments. The participants who opt for the fee-based certificates receive a signed certificate that can also be linked to social media accounts. To date, the uptake for verified certificates is small (less than 1% of total enrollment across the board), however niche areas that provide professional training opportunities hold promise. At the time of this report publication, the selection of courses to offer a for-fee certificate and the registrant uptake is as follows:

Title	Instructor	Division	Platform	Registrants paying for certificate
Bioinformatic Methods I (On Demand)	Nicolas Provart	Faculty of Arts & Science	Coursera	304
Bioinformatic Methods II (On Demand)				55
Teaching with Technology and Inquiry: An Open Course for Teachers (Session Based)	Jim Slotta	Ontario Institute for Studies in Education	EdX	103
iOS App Development in Swift (On Demand)	Parham Aarabi	Faculty of Applied Science & Engineering	Coursera	825

Behavioral Economics in Action (On Demand)	Dilip Soman	Rotman School of Management	EdX	94
Introduction to Psychology (Session Based)	Steve Joordens	University of Toronto Scarborough	Coursera	145

Research Activities and Outputs 2014 - 2015:

Publications:

Dineen, C., Harris, G. & Newman, W. (2015). [*MOOCs Unshushed: Lessons from creating a professional development Massively Open Online Course \(MOOC\): Library Advocacy Unshushed on edX*](#) [poster session].

Toronto, ON: Ontario Library Association Super Conference.

Harris, J., Heikoop, W., Van Beek, A., & Wallace, J. (2015) Teaching and Advanced Engineering MOOC: Lessons Learned. *Proceedings of the Canadian Engineering Education Association (CEEA 2015)*.

Retrieved from: <http://library.queensu.ca/ojs/index.php/PCEEA/article/view/5840>

Najafi, H., Evans, R., & Federico, C. (2014). MOOC integration into secondary school courses. *The International Review Of Research In Open And Distributed Learning*, 15(5).

Retrieved from: <http://www.irrodl.org/index.php/irrodl/article/view/1861/3098>

Najafi, H., Rolheiser, C., Harrison, L., & Håklev, S. (2015). University of Toronto instructors' experiences with developing MOOCs. *The International Review Of Research In Open And Distributed Learning*, 16(3).

Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/2073>

Conference Presentations:

Najafi, H., Håklev, S., Slotta, J. & Evans, R. (2015). Design Considerations for a Teacher Professional Development MOOC. Paper presented at the Learning with MOOCs Conference, Columbia University, New York.

Håklev, S., Slotta, J., & Najafi, H. (2015). MOOC Design that Supports User-Contributed Content, Interaction and Teamwork. Paper presented at the Learning with MOOCs, Columbia University, New York.

Appendix 1 – Cumulative MOOC Data to Fall 2015

Data on registration and completion during the first, second and third years of the MOOC initiative is as follows:

Activity and Completion Stats	Total MOOC Registrants	Active Participants*	Completed for certificate	Registrants completing certificate	Active registrants completing certificate
Learn to Program: The Fundamentals	80,000	75450	8240	10%	11%
Neural Networks for Machine Learning	49550	15903	1398	3%	9%
The Social Context of Mental Health and Illness	23491	8193	1423	6%	17%
Aboriginal Worldviews and Education*	20966	8860	3381	16%	38%
Learn to Program: Crafting Quality Code	53974	17224	3352	6%	19%
Statistics: Making Sense of Data	48687	19757	2825	6%	14%
Introduction to Psychology	77608	41708	3691	5%	9%
Behavioural Economics in Action	43042	20019	1154	3%	6%
Our Energetic Earth	10857	4732	458	4%	10%
Bioinformatic Methods I	21072	13396	1540	7%	11%
Library Advocacy Un-shushed	5,197	1519	363	7%	24%
Bioinformatic Methods II	9,529	4058	1036	11%	26%
Wind, Waves and Tides: Alternative Energy Systems	11,795	2648	617	5%	23%
Death 101: Shaping the Future of Global Health	3,915	880	179	5%	20%
Teaching with Technology and Inquiry	9,163	1207	297	3%	12%
Second Offering					
Learn to Program: The Fundamentals	66510	56397	7839	12%	14%
The Social Context of Mental Health and Illness	18364	9460	1005	5%	11%
Behavioural Economics in Action	5334	642	408	8%	64%
Library Advocacy	3,033	781	232	8%	30%

Unshushed					
Total	562,087	302,834	39,438	7%	13%

* Watched a video or completed a quiz

Appendix 2 – Cumulative MOOC Data on all Archive Usage to Fall 2015

Data on registrations in MOOCs available in archive mode during the first, second and third years of the MOOC initiative is as follows.

Title	Registration at end of Session	Total Registration to Date	Archive Users
Learn to Program: The Fundamentals*	80,000	198381	118381
Neural Networks for Machine Learning	49550	180803	131253
The Social Context of Mental Health and Illness	23491	34060	10569
Aboriginal Worldviews and Education**	20966	36437	15471
Learn to Program: Crafting Quality Code	53974	130001	76027
Statistics: Making Sense of Data	48687	143035	94348
Introduction to Psychology	77608	157922	80314
Behavioural Economics in Action	43042	50349	7307
Our Energetic Earth	10857	13266	2409
Bioinformatic Methods I	21072	32951	11879
Bioinformatic Methods II	9529	14293	4764
Library Advocacy Unshushed	5197	5208	11
Wind, Waves and Tides	11795	15896	4101
Death 101	3915	4448	533
Teaching with Technology and Inquiry	9163	9405	242
Second Offerings			
Learn to Program: The Fundamentals	66510	203835	137325
The Social Context of Mental Health and Illness	18364	28177	9813
Behavioural Economics in Action	5334	26246	20912
Library Advocacy Unshushed	3033	3469	436
Total	562,087	1258467	696380