Report of the Committee on On-Line Courses

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EXECUTIVE SUMMARY

The emergence of Massive Open On-Line Courses (MOOCs) and Princeton's arrangement with Coursera raise a number of urgent questions of policy and principle. This Report outlines a number of recommendations designed to apply during the "experimental" phase of Princeton's engagement with this new technology. In summary:

(1)   Intellectual Property:

      a.   The copyright in digital materials produced for on-line courses should belong to the instructor.

      b.   Princeton's share of revenue generated by the course should accrue to him or her, with the following provisos:

      c.   Since the production of an on-line course will often involve substantial university resources over and above those involve in the production of ordinary teaching materials, the university should be entitled to recover these additional costs in full.

      d.   In recognition of the university's legitimate interest in revenue generated by the teaching of on-line courses as they unfold, the University may tax income generated by on-line courses at a low rate (say 10%) even after costs have been recovered.

      e.   The university should retain a 'shop license' for the internal use of digital materials produced for on-line courses with Princeton resources.

(2)   The existing policy against teaching elsewhere does not require modification.

      a.   On-line courses taught in conjunction with regular Princeton courses do not constitute teaching elsewhere.

      b.   On-line courses that are not taught as regular Princeton courses require special approval by the Dean of the Faculty but will normally be approved as exception to the policy against teaching elsewhere when they promise to benefit research or teaching at Princeton.

      c.   On-line courses that are not taught as regular Princeton courses and which do not promise clear benefits to research or teaching Princeton constitute teaching elsewhere and will not normally be approved.

d.   On-line "courses in a box" that consist entirely in digital materials prepared in advance amount to a digital textbook and do not constitute teaching elsewhere, provided they are made generally available. However, when such courses are made available only as part of a course offered elsewhere for credit or certification, they do constitute teaching elsewhere and will not normally be approved.

(3)   OIT and the McGraw Center should receive resources sufficient to sustain the current rate of 8-10 on-line courses/year.

(4)   The university should explore the possibility of developing a proprietary platform for hosting on-line courses.

(5)   We recommend the establishment of a new Committee for On-Line Courses tasked with vetting proposals for on-line courses, allocating funds for course development, and more generally with overseeing and assessing Princeton's experiment with on-line courses.

(6)   Princeton should experiment on a limited basis with certificates of accomplishment that do not bear the University's name or logo.

(7)   Princeton should not permit ACE certification of on-line courses at this time.

(8)   Princeton should be open to some, but not all, of the monetization strategies currently proposed by Coursera.

    a. The University should permit Coursera to charge a fee for making student records available to potential employers.
    b. The University should allow third parties (companies, universities) to license Coursera courses and to pay a fee for additional website functionality furnished by Coursera. Princeton should not supply proprietary course material available only to fee-paying licensees.
    c. The University should not permit Coursera to provided "university-branded" certificates for a fee.

REPORT OF THE COMMITTEE

Introduction. The emergence of Massive Open On-Line Courses (MOOCs) and Princeton's arrangement with Coursera raise a number of urgent questions of policy and principle. This report proposes a framework designed to guide the University's experiment with on-line courses over the next 2-3 years. We emphasize the word 'experiment'. The situation is extraordinarily fluid. The first modern MOOCs were

introduced in 2011, and since then the rate of technological and sociological change has been dramatic. At this point we simply do not know what role these courses might play at Princeton or in the landscape of higher education more generally. The committee supports the University's policy of encouraging members of the faculty to explore the possibility of integrating on-line elements into their Princeton courses and of supplying the resources necessary to support this exploration. But we believe it would be premature to devote substantial additional resources to this effort or to reconceive the teaching mission of the University in a way that places MOOCs at center stage. Our first priority should be to accumulate experience and expertise that may guide more permanent policy changes in the future.

The committee was guided in its discussions by a number of principles. The first is that our primary responsibility as teachers is to our students at Princeton, and that any experiment with MOOCs must be justified by prospective benefits to Princeton students. This is the principle that underlies the University's policy against teaching elsewhere. The principle is not absolute. As current policy allows, there will be cases in which it is reasonable for Princeton to support the teaching of non-Princeton students. But the presumption against teaching elsewhere is strong, and the principles that underlie it should inform our experiment with on-line teaching. At the same time we recognize a principle that pulls in the opposite direction. One central mission of the University is the dissemination of knowledge. Just as traditional publishing makes it possible for us to share our scholarship with a worldwide audience, so the new on-line technologies make it possible for us to share certain aspects of our pedagogy with the world beyond FitzRandolph Gate. The University has an obligation explore this possibility and to pursue it 'in the service of all nations' insofar as this does not interfere with our pedagogical obligations to our own students.

The new forms of online instruction may permit us to integrate these two aspects of our mission in creative ways. That is their great promise. By incorporating open on-line elements into our teaching, we may improve our Princeton courses, e.g. by devising alternatives to the standard lecture format, or by 'bringing the world into the classroom'; while simultaneously providing access to Princeton courses for students and others around the world.

It is an open question whether this promise can be realized without compromising other aspects of the mission of the University. There are many potential pitfalls along the way. For example, while on-line courses are normally free to the end user, it is conceivable that on-line courses will generate substantial revenue in the future. It is of the first importance that the prospect of such revenue not be allowed to distort Princeton's engagement with on-line teaching. There is also a risk that the rise of on-line courses will disrupt the ecology of higher education in ways we might not welcome, for example, by encouraging the wholesale replacement of tenured professors with centralized on-line courses administered by untenured adjuncts.

The risks and benefits of a substantial investment in on-line teaching are hard to estimate at this stage, and so we counsel moderation. The University should support members of

the faculty who wish to experiment with on-line teaching. It should institute a clear framework for vetting proposals for on-line courses and for facilitating their implementation. It should take thoughtful measures to assess the successes and failures of these experiments as they unfold. And it should take every step to announce clear policies and procedures that will apply during the experimental phase. We should then revisit these large questions when we know more.

The report of the committee is organized as a series of responses to questions that arose in the course of our discussions. We emphasize the provisional character of these recommendations. The committee was repeatedly struck by the fact that every question in this area is much more complex than it first appears. We found ourselves reconsidering our answers to apparently simple questions as new facts arose and as the connections between the issues before us came into focus. We welcome a University-wide discussion of these important questions, and we look forward to the experiment.

1. The Intellectual Property Question: *Who owns the intellectual property in material produced at Princeton for on-line courses? How should revenue from on-line courses be distributed?*

The pedagogical material produced for on-line courses may be likened to a textbook or to a patented invention. On the textbook model, the material would not only be protected by copyright for legal purposes; the copyright would belong to the instructor and revenue generated by the sale or licensing of that material would accrue to him or her. On the patent model, while the material would be protected by copyright for legal purposes, the university would be entitled to a significant fraction of revenue generated by the sale or licensing of that material in accordance with the university's patent policy.

We support a modified version of the textbook model. The labor involved in creating an on-line course — writing and recording lectures, producing quizzes, exams, problem sets and projects, etc. — resembles the labor involved in producing a textbook. If these materials generate revenue, this will be thanks to the instructor's distinctive pedagogical contributions— his or her way of organizing and presenting the material — and not because the ideas themselves are useful for other purposes, as with a patent. When a member of the faculty writes a textbook, the copyright belongs to the author unless he or she assigns it to some third party (RPF VIII.D.3.c.5). We are aware of no compelling reason to treat digital materials designed for on-line distribution differently.

The textbook model applies perfectly when the on-line materials are prepared in advance and the instructor plays no further role in delivering the course. It applies only imperfectly when (as is typical) the instructor is also involved in teaching the course as it unfolds: interacting with students, supervising assistants, grading student work, intervening in on-line discussions and so on. That work is a form of teaching, and members of the Princeton faculty are not normally entitled to collect fees from students or third parties while teaching at Princeton or elsewhere. We are persuaded that the

intellectual property rights in course *materials* should remain with the instructor. But when it comes to revenue generated by on-line *teaching*, the textbook model provides us with no clear guidance.

Proposal:

a. The copyright in digital materials produced for on-line courses should belong to the instructor.
b. Princeton's share of revenue generated by the course should accrue to him or her, with the following provisos:
c. Since the production of an on-line course will often involve substantial university resources beyond those involved in producing ordinary course materials or a textbook, the university should be entitled to recover these additional costs in full. According to one scheme, the university might tax income generated from on-line courses at 50% until these costs have been recovered (RPF VIII.D.3.c.3). The task of determining the relevant costs for the purpose of this clause is delicate and should fall to the new Committee on On-Line Courses (§5 below) in consultation with the Provost. In any case, recoverable costs should be identified and estimated in advance, prior to final approval of the course, so as to avoid confusion.
d. In recognition of the university's legitimate interest in revenue generated by the teaching of on-line courses as they unfold, the University may tax income generated by on-line courses taught by members of the faculty at a low rate (say 10%) after costs have been recovered.
e. The university should retain a 'shop license' for the internal use of digital materials produced for on-line courses with Princeton resources.

The cost recovery scheme in clause (c) may be controversial. The university does not recover ordinary costs when a member of the faculty writes a book that generates revenue, and it may be argued that the costs involved in producing an on-line course are similar. Our response is that where substantial costs are involved, it is reasonable for the university to recover those costs, as it does when it collects overhead from sponsored research (RPF VIII.D.3.c.).

2. *The Teaching Elsewhere Question: How, if at all, should the university's policy against teaching elsewhere be modified to accommodate teaching in on-line courses?*

Current policy prohibits members of the faculty from teaching courses at other institutions without special permission from the Dean of the Faculty (RPF IV.K.7.10). The rationale for the policy is that Princeton students are entitled to the undivided pedagogical attention of the faculty. In order to warrant an exception, a faculty member

must show that his or her teaching elsewhere promises concrete benefits to his or her work at Princeton. In our view, this policy makes good sense and does not require modification.

We distinguish four kinds of courses with substantial on-line components:

(a)   On-line courses run as, or in conjunction with, regular Princeton courses.
(b)   On-line courses that are not Princeton courses, but where the instructor has made a credible case that the on-line course will substantially benefit research and teaching at Princeton, e.g., by serving as a "dry run" for a Princeton course, or by generating data to be analyzed at Princeton.
(c)   On-line courses that are not Princeton courses and which do not promise a substantial benefit to research or teaching at Princeton in the near term.
(d)   Digital "courses in a box" that are prepared in advance and then sold or licensed to a third party for use in courses that involve no on-going interaction with the Princeton author/instructor.

Under current policy:

Courses in class (a) would not normally require special permission from the Dean of the Faculty.

Courses in class (b) would require special permission, but might well be approved if the case were credible.

Courses in class (c) would not normally be approved.

Courses in class (d) are of two sorts. A pre-packaged course that is distributed to the public by a third party publisher would be a digital textbook and would not require special permission. By contrast, a course prepared in advance and then licensed to a company or a university for proprietary 'in house' use would constitute teaching elsewhere and would not normally be approved under current policy (RPF IV.K.8).

We believe that these results make good sense. The only question is whether permission for courses in class (b) should be granted by the Dean of the Faculty on an ad hoc basis or by the new Committee on On-Line Courses described below. We believe that in the near term it makes sense for the Dean to retain discretion in these cases. The Committee on On-Line Courses will be charged with identifying suitable courses and allocating scarce resources; but insofar as permission to teach elsewhere involves a judgment about the faculty member's responsibilities to the University, it makes sense to reserve that judgment to the Dean of the Faculty.

3. *The Resources Question: Should the University devote additional resources to on-line courses, and if so, how should those resources be allocated?*

In the first year of its partnership with Coursera, 2012-13, Princeton offered 9 on-line courses with a similar number slated for the second year. As we now know, this level of activity places substantial demands on the staff in the McGraw Center and in OIT. Additional staff members have been authorized to meet this demand, and we are not in a position to gauge the adequacy of these resources. On the general question, however, we believe that during the experimental phase of our engagement with on-line courses, this level of activity is optimal. The university should therefore allocate resources so as to make this level of activity sustainable.

4. The Propriety Platform Question: Should Princeton aim to develop its own software platform for on-line courses?

The Coursera platform works, and the arrangement with Coursera has many benefits. The chief concern is that because Coursera is a for-profit company, the pressure to generate revenue for investors will eventually affect the structure and content of the courses Princeton offers through Coursera, and that this sort of commercial pressure is inimical to our mission. A homegrown platform would allow the university to host on-line courses without these pressures. (An arrangement with EdX or some similar not-for-profit platform would also address this concern.) At present, one important benefit of the arrangement with Coursera is that Coursera's website serves as the main portal for on-line courses. We strongly suspect that in the near future, third party portals that aggregate links to on-line courses from a variety of providers will play this role. Once these portals are in place, courses offered on a proprietary Princeton platform would be at no disadvantage when it comes to attracting students.

Proposal: We urge the University to explore the possibility developing a proprietary platform. Ideally, the impetus for this would come from interested members of the faculty and technical staff. The University should inform the faculty and staff in engineering, computer science, OIT, the McGraw Center and other units that it is open to proposals for exploring this possibility. We further urge the University to consider a partnership with EdX or some similar platform, so as to provide a not-for-profit alternative to Coursera.

5. *The Oversight and Assessment Question: Under current policy, new Princeton courses with or without a substantial on-line component must be approved by the Committee on the Course of Study. However, there is no established framework for vetting existing courses that have been revised to include an on-line component or 'on-line only' courses that have been approved as exceptions to the policy against teaching elsewhere. Some form of oversight is obviously desirable. What principles should govern this oversight and who should exercise it?*

We propose that a new Committee for On-Line Courses be charged with overseeing the approval and assessment of Princeton's on-line offerings. In principle these functions could be assigned to the Committee on the Course of Study, but the special issues raised

by the on-line world strike us as different enough from the issues surrounding ordinary course approval to justify a new committee. This committee would be tasked with:

- establishing a rubric for proposals for new on-line courses;
- working with members of the faculty as they develop their proposals;
- producing and revising a 'handbook' for the faculty members who are developing on-line courses — a record of best practices, resources, frequently asked questions, etc.;
- deciding which proposals to support;
- determining the recoverable cost of each course for the purposes of the cost-recovery scheme outlined above (2.c.)
- gathering data relevant to the assessment of individuals courses;
- conducting an annual review of the University's on-going experiment with on-line education.

In working with faculty members to develop proposals, the committee might follow the model developed in PIIRS and CITR, in which preproposals are submitted and then refined in consultation with the committee prior to final assessment.

New courses approved by this committee must also be approved by the Committee on Course of Study as additions to the curriculum. We propose that CCS evaluation take place after the new committee has approved the course for development but before the on-line materials have been produced.

In deciding which courses to approve and fund, the committee should give priority to courses that promise to benefit our students most. But it should also give priority to innovative courses that promise to open up new possibilities for on-line teaching and for the use of on-line materials in Princeton courses.

In order to aid in the assessment of individual courses and of the program as a whole, every proposal for a new on-line course should include a plan for assessing the course after the fact. One benefit of this aspect of the process is that it may encourage members of the faculty to think creatively about the assessment of our pedagogy across the board.

Approval should be required for any course that involves an open on-line component, regardless of whether substantial additional resources (e.g. in the Broadcast Center) are involved in its production. Although no additional funds may be required for the development of certain low-tech courses, open on-line courses will function, to a significant degree, as the visible public face of Princeton in the foreseeable future, and special care must be taken to ensure the excellence of material presented in this format.

6. The Credentials Question: *At present, extra-mural students who complete a Princeton MOOC receive no official certificate of any kind. Princeton is unusual in this respect. All of our peers allow students to receive some sort of certificate of accomplishment. Should Princeton allow this?*

The main argument for allowing some sort of certificate of accomplishment is pedagogical. Students are more likely to complete an on-line course if they stand to receive some concrete acknowledgement of their achievement, so our teaching of extramural students will be more effective if we allow this. The main arguments against providing a certificate are first, that this risks blurring the line between on-line courses and courses completed by Princeton students in a Princeton classroom for Princeton credit, and second, that this will inevitably place additional demands on the faculty.

We believe that Princeton should experiment with certificates of accomplishment to see whether this makes a difference to completion rates and whether the additional demands on the faculty are in fact too burdensome. These certificates should be letters, signed by the instructor, certifying that the student has completed (or appears to have completed) the requirements for the course. So as to minimize the risk of blurring the distinction between on-line courses and courses completed at Princeton, these certificates should not contain Princeton's name or logo. We should ask Coursera to generate these letters so as to minimize administrative demands on the instructor. This should be a pilot program, initially limited to a select number of courses in the first year.

Since it is impossible to verify the identities of on-line students without an in-person proctored assessment, these letters can only indicate that the student "appears to have completed" the assignments for the course. (We leave the wording open.) Coursera believes that it will soon be possible to identify students remotely by their typing styles. If that turns out to be possible, Princeton should be open to less cautiously worded certificates of accomplishment.

7. The Certification Question: *Should Princeton permit ACE to review its on-line courses for creditworthiness so as to allow third party institutions that require ACE certification to offer college credit for the completion of on-line Princeton courses?*

The American Council on Education (ACE) has agreed to review Coursera courses for creditworthiness, but only with the permission of the home institution. ACE certified courses must include an identity-verified proctored assessment — an exam offered at a testing center — so any course submitted for such review will need to include the materials for such an exam. As we understand the arrangement, however, the Princeton instructor would not be responsible for administering or grading the exam, so in this respect, at least, the additional workload for the instructor would be minimal.

There are two main arguments against permitting ACE certification of Princeton courses. The first is that extramural students who are taking the course for credit at University X will inevitably place additional demands on their Princeton instructor. Since the rationale for our policy against teaching elsewhere is precisely to minimize such demands, this counts heavily against permitting certification. The second, and weightier, argument is that credit bearing MOOCs risk blurring the line between real Princeton courses and on-line courses that originate at Princeton but which would not

merit Princeton credit in their on-line-only form. The main argument in favor of certification is that the availability of low cost, high quality on-line courses offered for credit will benefit extramural students, improving access to higher education, reducing the time-to-degree, and so on.

The certification question also raises larger issues. We have already begun to see pressure on budget-conscious administrators at universities around the country to supplement their own courses with MOOCs offered for credit. A steady supply of ACE-certified MOOCs may well contribute to a lamentable trend in higher education: the replacement of regular tenured faculty with untenured instructors who serve as "glorified teaching assistants" for MOOCs designed and taught elsewhere.

These large issues merit serious discussion. It is too early to say what impact MOOCs will have on the professoriate or on the structure of higher education in the United States. Even apart from these considerations, however, the arguments against certification strike us as persuasive. Our pedagogical mission is to teach our students and to disseminate our knowledge more broadly, and given this mission, there is little to be gained from certification. We recommend that the University not pursue this option at the present time.

8. The Monetization Question: *Coursera is exploring a number of strategies for generating revenue from on-line courses. Which of these strategies should Princeton pursue?*

Princeton's agreement with Coursera requires the university to make a good faith effort to generate revenue from its courses. Coursera is currently exploring three main strategies:

(a) Institutional use for blended learning: Third parties (colleges, companies) license Coursera courses for internal use and pay a fee for additional website functionality (a proprietary blackboard-style learning management system) and perhaps also for additional content: additional assignments and exams, additional engagement with the instructor, etc.

(b) Career services: Students opt in to have their course records and other data made available to prospective employers for a fee. This is already under way for some computer science classes, and the "overwhelming majority" of institutions offering such courses have signed on.

(c) Charging for certification: Students sign up for the Signature Track version of the course which involves biometric identity verification to ensure that the student is doing the work him/herself. Upon completion, the student receives a formal 'university branded' certificate. This is distinct from the ACE track discussed above, since no proctored assessment is involved and no college credit is offered.

Princeton has already agreed to pursue a version of strategy (b), and we see no objection to this. Strategy (a) is unobjectionable so long as the premium service is limited to additional website functionality furnished by Coursera. Any version of this strategy that involves a member of the Princeton faculty in generating special teaching material for a restricted extra-mural clientele is flatly inconsistent with our policy against teaching elsewhere and should not be permitted. Strategy (c) creates a serious risk of blurring the distinction between genuine Princeton courses and courses offered on-line through Coursera and also should not be permitted.