Online CSC undergraduate degree via CLAS: CISE faculty concerns

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SUMMARY

This document lays out the expectations of the CISE faculty concerning the following issues

I Academic Quality and Reputation (course, program, degree, student, advising)

- **The bar for student admissions should be the same as for the on-campus version of the degree**

- **Due to lack of involvement of CISE staff in Ufonline or vendor's student advising/retention efforts, the dept's feedback for control of the quality of courses and assessments is significantly limited.**

- **ABET accreditation recommended. Until that is in place, a committee should be in charge of monitoring each course offering.**

- **Due to lack of involvement of CISE staff in student advising, retention etc, there is a missing piece to the information flow**
  - **analytics data should be available to the instructor and**
  - **there should be an official CISE dept liaison that can monitor the advising/retention efforts of Ufonline or their vendor.**

The following relevant issues are discussed in detail in the accompanying full document

1. Degree program and Course credentials, including relationship to the on-campus versions of the CSC degree and courses
2. Resources and assistance to ensure reliable course offerings by *all concerned departments* – to permit planning by prospective CSC student
3. Course content-*material* decisions, including creation, modality quality control and revision

5. Student assessment-*instrument* decisions, including modality, quality control and revision

II UFOnline Platform choice and Network/bandwidth adequacy

- **UFOnline Platform/Network/bandwidth should be appropriate to meet above quality requirements**
- **There should be adequate technical support of the platform**
- **There should be adequate training for faculty members to use it**
- **There should be support for students using it**

The following issues are discussed in detail in the accompanying full document.

4. Course delivery decisions, including modalities for student-student or student-instructor(s) interaction (email responses, moderated forums are crucial; "consultants" for programming assignments, discussion sections are crucial)
   Quality control and revision

6.Student assessment-*delivery* decisions, including modality, quality control and revision (proctored assessments are necessary; grading and feedback for significant projects and programming assignments and feedback are crucial)

III IP

3 types should be permitted:

Independent creator effort
– Creator-copyrighted (type 1a)

I**ndependent effort or commissioned**
--Open educational resources (type 1b) (creative commons) license possibilities and allowances; share-alike derivatives + collection + copyrighted fairuse options on CISE website or IT performance platform:

Commissioned
--Closed content-material commissioned by UF or put on UF platform potentially used by Unizin partners etc

IV Compensation (lumpsum content creation + per sch for instruction)

- At least 50% of gross per sch revenues should go to the department (In state or out of state)
  Question for department: Of this, what goes to Instructor Overload payment? Tas?
  Question for Ufonline: Is there a state appropriation for an instate UF online student well?
  Question 2 for Ufonline: what is the rationale to decrease the % of per sch revenue going to the department for out of state students?

- When Overload paid to instructor for creating commissioned content – should ideally not prevent development

of open content.

- If Closed content (UF copyright) makes net adjusted income, then CBA stipulates % to go to creator (may not be the instructor)

- When contracting with private vendors there should be no liability for losses

V There should be consultation with faculty (senate) as well as individual departments offering the relevant courses/degree programs on all of the above points.

REMAINDER of document

Preliminary information available to the committee at the time of this draft

A1. UF Online business plan (for consideration by the Board of Governors), dated September 2013
http://www.aa.ufl.edu/Data/Sites/18/media/online-learning/uf-online-comprehensive-business-plan.pdf
A2. Two presentations to the Advisory board for UF Online August and December 2013
http://www.flbog.edu/about/taskforce/_doc/online_advisory/FINAL08232013AdvisoryBoard.pdf
http://www.flbog.edu/about/taskforce/_doc/online_advisory/Agenda-Packet.pdf
A3. Press release by Pearson February 2014
http://www.pearsoned.com/pearson-chosen-by-the-university-of-florida-to-promote-uf-onlines-new-bachelors-degree-programs/#.UyYiefjfsTc

UFOPEC. Current contract between UF Online-Pearson-Embanet-Compass is available upon request to the CISE Online committee.

Basic Underlying Premises

Premise 1:

As stated in Section 3 of UFOPEC, a separate program term sheet is to be drawn up for each e-learning program and we would expect that the CSC degree via CLAS would require such a separate program term

sheet; I.e, it would not be governed by Schedule 3, Exhibit A of UFOPEC.

Premise 2: A slate of OER (open educational resources) in multiple modalities as described below, compiled/developed by CISE faculty, on creative commons attribution, non-commercial, share-alike (CC-BY NC-SA https://creativecommons.org/licenses/) licenses, permitting remixing and free sharing would be *the most effective advertisement for the CSC online as well as oncampus degrees.* This space is extremely sparse and the links given below (openstax, flatworldknowledge and MIT OCW) are the sole players currently in this space. Their modalities are limited as are their content offerings.

Provided it acts quickly, UF CISE would be the first to seize this space, increasing the effectiveness and advertisement potential and value of these OERs. It would increase UF's reputation and the value of CISE's online degree.

Premise 3

Advertisement and reputation value aside, students are not paying for the above mentioned type of content.

Students are mainly paying for the content that is communicated in a *closed* setting, during interaction with instructors and Tas who guide them through the above type of content in an organized, personalized and adaptively paced fashion, using moderated forums, and discussion sessions, email, chat etc. tailoring communication among any desired group of communicators: student-instructor, student-student, and instructor-student(S); with the instructor having any desired level of control over the communication. See Point 3 below. Not least,

they are paying for the internal/*closed* assessments (Points 5/6 below)and certificate of completion, grade and credit accrual.

The remainder of this document discusses CISE expectations concerning each of the 7 points listed above.

1. Degree program and Course credentials, including admission standards, relationship to the on-campus versions of the CSC degree and courses

According to the documents **A2** and based on information the CISE dept. chair received from UF Online it has been *stipulated* by the state of florida that

- the CSC online diploma will be *identical* to that of the current on-campus version; the degree will have the same CIP code
- the courses will have the same course numbers and will be expected to have *equal rigor in content, delivery, student engagement and assessment* as the current on-campus versions;
- on campus versions of the online courses will continue to be offered;

However, if the degrees are to be identical presumably, it would be necessary to ensure that *admission standards are identical as well.* It needs to be clarified that the personnell responsible for undergraduate admissions will ensure uniformity.

It is anticipated that the CSC degree will be proposed for ABET accreditation along with the CSE (Computer Science through Engineering) degree during the next accreditation cycle. Since ABET accredits programs, not delivery modes, successful accreditation would mean that both the on-campus and online versions of CSC would be ABET accredited.

Ensuring all of the above is important to the CISE faculty since it strongly affects our reputation and ranking, the value of our degree, the students we would attract and our ability to hire strong faculty members. However,

ensuring all of the above requires adequate resources to be made available to the CISE department.

2. Course content-*material* decisions, including creation, modality, quality control and revision

Per the documents **A2,** right to choose the course content-material (consistent with the catalog description) will be solely the instructor's, as in the case for current on-campus courses.

Instructor rights include the choice of *closed*, commercial copyright IP adoption such as traditional textbook, related digital/electronic/online material e-book, webassign etc. if any, (following the royalty COI policies for faculty-authored book).

The use and generation of OERs under Creative Commons licenses https://creativecommons.org/licenses/
CC BY-NC(non-commercial) including NC-SA (share alike) licenses is extremely common practice in the Computer Science community and *it would be difficult to find a single current on-campus computer science course that does not use an OER. Online versions of the current on-campus courses should be allowed to continue to develop and use OERs under CC BY-NC-SA* See also discussion under Point 3.

Sole instructor rights also include choice of Open Educational Resources (OERs) and platforms that host them, in a variety of modalities (including peer-reviewed, open e-books http://openstaxcollege.org/faculty http://www.flatworldknowledge.com/
videos, http://ocw.mit.edu/index.htm etc, some of which include interactive resources such as autograded quizzes. All of these would be preferably under Creative Commons licenses:
https://creativecommons.org/licenses/ preferably content that can be remixed as derivatives ("Share Alike").

For OER's we would preferably use opensource platforms such as OpenedX

http://code.edx.org that are beginning to facilitate autograding of untrusted code using autograders with adequate sandboxing for example https://github.com/edx/codejail or other options such as: http://www-cs.ccny.cuny.edu/~wes/autograder/readme.html or http://marmoset.cs.umd.edu/index.shtml or http://wiki.web-cat.org/WCWiki//FrontPage

Similarly along with OER's we would expect optionally partnering with open forums http://openstudy.com/

NOTE: on IT performance pilot funds, a CISE faculty member and 2 grad students are currently developing a sample multi-modal OER course hosted on the openEdX platform and a manual for faculty to develop their own multi-modal OERs.

Quality control of content shall be implemented via comparison with other UFOnline courses, CISE department peer evaluation, as well as dictated by the accrediting organization such as ABET.

If the University commissions or assigns an instructor to generate *closed* online educational resources, adequate training and support must be provided by UF Online for the instructor (per the UFF-BOT 2013-16 Collective Bargaining Agreement(CBA)).

Adequate resources should be provided to CISE so that course catalog descriptions, syllabi, and course-material shall undergo re-evaluation and revision, at least as - if not more – often than with current on-campus courses, (since on-campus courses have stronger built-in checks resulting from face-to-face interaction between students and with instructors). Accreditation (see Point 1) would require such re-evaluation and revision.

If the University commissions or assigns an instructor to generate *closed* educational resources for a course for multiple/recurrent use, that instructor shall be given a chance to be involved in the re-evaluation and revision of

those educational resources.

3. Course *delivery* decisions, including modalities for student-student and student-instructor(s) interaction; quality control and periodic upgrades.

It should be confirmed that platforms and web servers and FERPA level identity managers for the *closed, instructor/TA-driven interaction part of the course* (according to the document **A1)** are to be m*anaged* by UF: via **Canvas** or similarContentManagement System (CMS)/Student Information System(SIS)) rather than outsourced to a private vendor-partners

Based on experience gained by their use in the OERs mentioned earlier, we anticipate the use of autograders with adequate sandboxing for assessment of programming assignments
for example https://github.com/edx/codejail or other options such as: http://www-cs.ccny.cuny.edu/~wes/autograder/readme.html
or http://marmoset.cs.umd.edu/index.shtml or http://wiki.web-cat.org/WCWiki//FrontPage This could be implemented independently on CISE departmental systems or if UF wishes, it could be possibly integrated with Canvas so that students can submit via Canvas.

CISE expects sufficient resources so that much of the OER (open educational resources, see Point 2) content is expected to be hosted on departmental webservers assuming high connectivity can be obtained to the backbone or inexpensive external web servers. These do *not contain UF* student records that are connected to their identities and cannot be correlated with the SIS that is used to maintain the student's identity and records for assessment).

For *closed* educational resources (which could include commercializable CCBY OERs being remixed), the faculty member(s) responsible for both course content creation as well as for course delivery shall be involved in determining the modalities for aspects of delivery listed in the heading of Point 3. They shall also be involved in quality control for the delivery

modalities, periodic revisions as the course content is revised as well as ensuring technology upgrades.

If the University commissions or assigns an instructor to create/generate *closed* educational resources for multiple/recurrent use, that instructor shall be considered first for course-delivery that uses those educational resources and shall be given a chance to teach the course as long as this can be achieved while meeting prior time commitments for course offerings.

Quality control of course delivery shall be effected by CISE department peer evaluation, as well as dictated by the accrediting organization such as ABET.

4. Student assessment-*instrument* decisions, including modality, quality control and revision

Per the documents **A2,** choice/creation of the assessment instruments and grading policy is entirely a decision of the instructor.

Quality control of assessment instruments and grading policy shall be effected by CISE department peer evaluation, as well as dictated by the accrediting organization such as ABET.

Adequate resources should be provided to CISE so that assessment-instruments shall undergo periodic re-evaluation and revision just as the course material and educational resources are periodically re-evaluated and revised (See Points 2 and 3). Accreditation would require such re-evaluation and revision. As in Point 2, if the University commissions or assigns an instructor to generate *closed* educational resources for a course for multiple/recurrent use, that instructor should be given a chance to be involved in the re-evaluation and revision of the assessment instruments related to the relevant educational resources in use.

5. Student assessment-*delivery* decisions, including modality, quality control and revision

The department expects that UFOnline has adequate facilities for delivery and collection of assessment instruments, including proctoring, authentication that a student has worked independently, etc.

In particular, it is expected that the assessment-delivery shall be consistent with the requirements of the assessment instrument. For example, if the assessment instrument is a closed book, individual test, then the delivery method shall ensure that the student is essentially proctored. Or if the assessment instrument is a team coding project and demo to their peers, the delivery method should ensure that the students can work in a team and be able to demo their code to their peers.

The faculty member(s) responsible for course content and for course delivery shall be involved in determining the modalities for assessment-delivery. They shall be involved in quality control for the delivery modalities, periodic revisions as the course content is revised as well as ensuring technology upgrades.

6. Coordination to ensure reliable course offerings by all concerned departments – to permit planning by prospective online CSC student

The CSC on-campus majoring students use the following approved 4-year tracking sequence that appears in the catalog. The tracking sequence for CSC is
http://cise.ufl.edu/academics/undergrad/csc/CSCTrackingSheet22feb2013.pdf

Adequate resources should be made available to permit the CISE department to ensure the following: before declaring a major, the prospective online CSC student should be guaranteed the *same level of reliability in course offerings as the current on-campus CSC student, not only from the CISE department, but also all the other departments whose courses are required as prerequisites.* Course cancellations due to low enrollment or other such reasons should be governed by a clear cancellation policy that is closely aligned with that of current on-campus courses.

According to the tracking sequence, CISE would provide online versions of our courses no later than:

Semester 1: COP3502 Prog Fund 1
Semester 2: COP3503 Prog Fund 2, COT 3100 Discrete Structures
Semester 3: COP 3530 Data Structure & Alg
Semester 4: CDA 3101 Comp. Org
Semester 5: CEN 3031 Software Engineering
Semester 6: ---
Semester 7: CIS 4301 Databases, COT 4501 Numerical Anal, CISE elective
Semester 8: COP4600 Operating Systems, CISE elective, CIS 4914 Sen project.

UFOnline would coordinate and ensure reliable course offerings for the other departments whose courses appear in http://cise.ufl.edu/academics/undergrad/csc/CSCTrackingSheet22feb2013.pdf Accreditation (see Point 1) would require this.

Ensuring all of the above is important to the CISE faculty since it strongly affects our reputation and ranking, the value of our degree, the students we would attract and our ability to hire strong faculty members. However, ensuring all of the above requires adequate resources to be made available to the CISE department.

7. Sharing Revenue/Loss, Compensation and IP

As mentioned in Point 2 above, provided it acts quickly, UF CISE would be the first major presence in the multi-modal OER space (with CC-BY NC-SA licenses, permitting continual improvement of the material by instructors around the globe) increasing the effectiveness and advertisement value of these OERs.

Hence UFOnline should fund the development of these OERs on a nonrecurring basis. In line with the document **A1** as well as comparisons of GaTech's compensation:

https://www.documentcloud.org/documents/703594-mooms-proposal-2-28-13.html
http://www.insidehighered.com/news/2013/05/28/documents-shed-light-details-georgia-tech-udacity-deal

Comparing with the above datapoints, CISE expects from UFOnline $20K for multi-modal OER development per course, with $19K paid to the instructor's OH account (nonrecurring, until substantial revision is required), for varied use, including payment to students who assist in content development; and 1K to the department for systems support during production. Should the instructor choose to use departmental help for designing their content, they will be paid half that amount $9.5Kand the remainder $10.5K goes to the department for funding the TA who would assist the instructor to design and generate the OER as well as systems support during production.
Should the instructor choose to use UFOnline to assist in development of the OER, they will be paid $9.5K.

For *delivering* the *closed*, instructor-driven interactive UFOnline course,the department expects 66% (in state) 50% (out of state) of the gross tuition on a per-sch basis,which it will use to pay the instructor, Tas., support personnel, and webserver resources for the OER's.

The CBA lays out the policy for IP and revenue sharing when a faculty member is commissioned or assigned to *create closed* educational resource content.

Schedule A: Up to $500,000 net adjusted income:
40% to the individual creator(s)
10% to the University program(s)
7.5% to the creator(s)'s department
7.5% to the creator(s)'s college
35% to the University

Schedule B: $500,000 or over net adjusted income:

25% to the individual creator(s)
10% to the University program(s)
10% to the creator(s)’s department
10% to the creator(s)’s college
45% to the University

Clarification Needed:

What happens if the net adjusted income is negative (due to lower than predicted enrollments, say)? The department or the faculty member should not be liable. This requires clarification.Moreover, various points must be clarified such as applicable state legislation or agreements with the state.

Need to verify the following: According to UFOPEC, a sample program term sheet lists the amount to be paid Pearson - Schedule 3, Exhibit A. In particular, 40-60% of all tuition plus several million upfront. Functions of Pearson are listed as: Marketing (see alternative suggestion in Point 2 above), Enrollment management (assistance to registrar's function) Persistence/Retention programs (assistance to student affairs and academicadvisors function) On demand Tutoring; E-Textbooks (this is the instructor's choice, but it is also included into the contract) On demand instructional design (if the offering department and/or UFOnline needs it).

Need to understand exactly what Unizin consortium entails for the faculty member.