Proposal for Modifying the Florida Tech University Core

The following describes only an idea towards changing the Florida Tech University Core Curriculum. This document was written by a single author, and represents only that author’s views. The purpose of this document is to provide a starting point for the discussion of how the Florida Tech University Core Curriculum could and/or should be modified. Nothing in this document should be interpreted as policy or the result of any discussions.

The purpose of Florida Tech University Core Curriculum (hereinafter “core”) is to provide all undergraduate students with the general education necessary to put their specialized studies into the technological, cultural, societal, and historical perspective necessary to facilitate their understanding of and transition into today’s global civilization.

Current Core
The following summarizes the existing core, according to the 2016-2017 University Catalog:

- Communications: 9 credit hours, including COM 1101 and COM 1102
- Humanities: 9 credit hours, including HUM 2051 and one of the following Humanities Core Courses: HUM 2052, HUM 2142, HUM 2212, HUM 2213, HUM 2331, HUM 2332, HUM 3333
- Mathematics: 6 credit hours
- Physical and/or Life Sciences: 6 credit hours
- Social Sciences: 3 credit hours
- FYE 1000 (1 credit hour): required of all new students. Transfer students with 30 or more credit hours do not need to meet this requirement, but must substitute another course to satisfy the credit hour.
- Computer Literacy: at least one course with the CL designation must be completed

Justification for Modifying Core
The core was last examined by the Undergraduate Curriculum Committee (UGCC) more than 10 years ago. The UGCC formed a subcommittee to examine the core in October 2003, and recommended changes in February 2005. The focus of this review was to ensure the core satisfied existing SACS requirements, and to address concerns of prerequisite streams that impeded progress of out-of-sequence students. With relatively minor modifications, the current core is a reflection of the result from this previous review.

Recently, there have been discussions within the UGCC related to concerns of transfer equivalency of certain courses (notably, in this context, of Communications and Humanities courses), as well as which courses can satisfy the Social Sciences requirement. There have also been discussions as to the need for a specific Computer Literacy requirement, given society’s current technological
environment, most students’ familiarity with “electronic devices,” and the implicitly-required need to rely on computers to complete all programs of study at Florida Tech.

In addition to local discussions and concerns, a review of the general education requirements at Florida Tech’s peer institutions shows that the Florida Tech core is much narrower and restrictive in comparison. While many other institutions may still require a small set of named courses (particularly as they relate to freshman English), they also have created several broad areas constituted of several courses from which they allow their students to choose which courses to satisfy their general education requirements. A few examples follow:

*Purdue University: [http://www.purdue.edu/provost/initiatives/curriculum/index.html](http://www.purdue.edu/provost/initiatives/curriculum/index.html)*

Purdue has implemented an outcomes-based core curriculum, divided into two categories: foundational and embedded. All undergraduate students must meet the foundational learning outcomes, while embedded outcomes are included in the core requirements for particular programs. A minimum of 30 credit hours within the foundational core are required. The foundational outcomes are:

- Written Communication
- Information Literacy
- Oral Communication
- Science
- Science, Technology and Society
- Mathematics/Quantitative Reasoning
- Human Cultures: Humanities
- Human Cultures: Behavior & Social Sciences

Each outcome requires one course except “Science” which requires 2. For each outcome, Purdue lists multiple courses a student can take to satisfy that outcome.

Embedded learning outcomes are:

- Communication
- Ways of Thinking
- Interpersonal Skills and Intercultural Knowledge

Each program is responsible for determining where and at what level these embedded outcomes are met.
Georgia Tech: [http://www.catalog.gatech.edu/academics/undergraduate/core-curriculum/](http://www.catalog.gatech.edu/academics/undergraduate/core-curriculum/)

Georgia Tech’s core curriculum is largely dictated by the mandates of the University System of Georgia (USG) ([http://www.usg.edu/academic_affairs_handbook/section2/C738/](http://www.usg.edu/academic_affairs_handbook/section2/C738/)). USG has identified several general education learning goals for which students must complete a specified number of credit hours. A minimum of 42 credit hours in the core is required. The goals are:

- Area A1 – Communication Skills (6 credit hours):
- Area A2 – Quantitative Skills (3 credit hours):
- Area B – Institutional Options – left to each individual institution (3 credit hours)
- Area C – Humanities, Fine Arts, and Ethics (6 credit hours)
- Area D – Natural Science, Mathematics, and Technology (7 credit hours, 4 of which must be in lab science courses)
- Area E – Social Sciences (6 credit hours)

In addition, there is an Area F which requires a minimum of 18 credit hours of lower-division courses required by a degree program that are prerequisite to upper-division courses.

Georgia Tech also identifies additional core curriculum requirements: Constitution and History, and Wellness. In addition, Georgia Tech has increased its required minimums for some goals above that required by the USG. Each has a list of courses that meet the specified goal, though some of the lists are very restrictive (for example, Area A1 lists only two freshman English courses, thus requiring all students to have completed these two particular courses to graduate).

University of West Virginia: [http://registrar.wvu.edu/gef](http://registrar.wvu.edu/gef)

Students at the University of West Virginia are required to take between 31 – 37 credit hours of general education studies, organized into 8 foundational areas:

- F1 – Composition and Rhetoric (3 or 6 credit hours)
- F2A/B – Science & Technology (4-6 credit hours)
- F3 – Mathematics & Quantitative Skills (3-4 credit hours)
- F4 – Society & Connections (3 credit hours)
- F5 – Human Inquiry & the Past (3 credit hours)
- F6 – The Arts & Creativity (3 credit hours)
- F7 – Global Studies & Diversity (3 credit hours)
- F8 – Focus (9 credit hours) (Students are required to take these 9 additional hours from the F2 – F7 areas above by way of a minor, double major, or dual degree.)
Extensive course lists are provided in each area, except F1 which is reserved for “freshman English” and lists only 3 courses.

Other institutions have a similar core structure. See for example University of Central Florida (http://catalog.ucf.edu/Content/Documents/Archive/UCFUGRDcatalog1617.pdf) (pages 71-72), University of Arizona (http://catalog.arizona.edu/policy/general-education-curriculum), and University of California – San Diego (http://ucsd.edu/catalog/front/ChooGrRe.html).

If Florida Tech were to have a core that is similarly structured, it would not only bring the university in line with several of its peers, but also could resolve several of the transfer credit issues that have recently been discussed. In addition, having a broad range of courses to choose from to satisfy the core may attract more transfer students who may have taken courses at other institutions for which there is no Florida Tech equivalency.

Proposal
The following represents a starting point for discussion on how Florida Tech may transform its existing core to one that is more modern, flexible, and in line with its peer institutions. Additional input and discussion is needed to refine any change into the best possible core Florida Tech could offer.

Before establishing requirements, it is important to identify those outcomes that Florida Tech wishes its students to achieve through the core. To that end, the following outcomes are suggested to prompt discussion:

Students should…

- demonstrate proficiency in written and oral communications, directed at a variety of audiences.
- demonstrate quantitative reasoning skills appropriate to their chosen area of study.
- have an understanding of the natural sciences that form the foundation of today’s modern technological world.
- have an appreciation for the art, history, and culture that has been instrumental in shaping human civilization.
- demonstrate the skills necessary to understand and participate in today’s global society.
- engage in and complete a culminating scholarly inquiry that demonstrates competency of their academic knowledge, problem-solving skills, and communication.
To begin to address these outcomes, Florida Tech courses get classified into the following broad categories:

- Communications
- Creative Arts
- Social Sciences
- Mathematics
- Engineering
- Business and Management
- Flight Sciences and Technology
- Liberal Arts
- History
- Culture
- Foreign Languages
- Natural Sciences
- Psychology
- Ethics
- Athletics
- Law and Justice

*Note: I’m sure there are other categories that could be created from our existing courses, as well as courses that don’t fit well into any of these categories.*

As Florida Tech expands and introduces new future areas of study, new categories could be created, such as Philosophy, Religion, Medicine, etc.

The outcomes could be satisfied as follows:

All Florida Tech undergraduate students are required to satisfy the following minimum requirements representing 30 credit hours plus a Scholarly Inquiry course:

- COM 1101 (Composition and Rhetoric), COM 1102 (Writing about Literature), plus an additional three credits from Communications
- Six credit hours from either History and/or Culture, plus an additional three credit hours from either History, Culture, or Creative Arts
- Three credit hours from Social Sciences, Foreign Languages, or Ethics
- Six credit hours from Mathematics (minimum level: college algebra)
- Six credit hours from Natural Sciences
- FYE 1000 (1 credit hour): required of all new students. Transfer students with 30 or more credit hours do not need to meet this requirement, but must substitute another course to satisfy the credit hour.
- Completion of at least one course designated as Scholarly Inquiry (Q)

*Note: The above requirements mostly mirror our existing requirements. Discussion should be held as to whether the amount of credits should be shifted (6 credits of Communications vs. 9, etc.). These requirements also expand the offerings in comparison to our existing core (Foreign Languages or Ethics, instead of just Social Sciences, for instance).*
Natural Sciences obviously include the staples of chemistry, physics, and biology, but could be expanded to include geology, space sciences, oceanography, etc.

Commentary:
Courses in each of the above categories would range in level from 1000 to 4000 (except for COM 1101 and 1102). As is existing policy, courses at a level lower than 1000 cannot be used to satisfy degree requirements. The proposed core requirements do not require any particular level to be satisfied (except that they be 1000-level or higher and prerequisites must still be met), however each individual program can place additional restrictions on their students while still meeting the core. For example, engineering programs may require their students to satisfy the Natural Sciences requirement by having Physics 1 and Physics 2 as required courses. Or a humanities program may require its students to take two Culture classes only at the 3000-level or higher. This type of structuring allows each program to be tailored to the rigors of its specific discipline without imposing those same rigors on other programs.

Having broad categories define the core requirements rather than specific courses facilitates the acceptance and use of transfer credit to satisfy degree requirements without necessarily having to quibble over course equivalency. The above scheme does, however, present the challenge of identifying the category a non-equivalent course falls within. For example, at present a non-equivalent humanities course may be designated as HUM 1xxx. Would it be appropriate for the History category? The Culture category? This issue would probably be most prevalent with many of the course prefixes associated with CoPLA courses. It could be resolved (albeit, not without some effort) by reviewing all courses and creating new course prefixes that correspond with each of the defined categories. Then non-equivalent transfer credit would be assigned the appropriate prefix. Alternatively, and perhaps less burdensome, would be to introduce new prefixes such as HST or CUL for use only as Xxxx courses (HST 1xxx, ETH 2xxx, etc.), and existing courses would just be listed under the appropriate categories with their current prefixes.

What about transfer courses for which there is no category? As part of this transformation of the core, we could think ahead and create categories for which there are no present Florida Tech courses, and add those categories to the core requirements (for example, 3 credits of Social Sciences, Foreign Languages, Ethics, or Philosophy). Alternatively, if such transfer courses are relatively uncommon, substitutions could be made on a case-by-case basis (Religion instead of Culture). Or, such courses simply transfer as free elective and can only be used as such.

Finally, the proposed requirements outlined herein should have minimal impact on existing programs at Florida Tech. As mentioned above, the new requirements largely mirror the
existing requirements, without requiring specific courses (except COM 1101 and 1102). All programs that meet the existing core requirements would meet those proposed above.

**Conclusion:**
As mentioned earlier, the purpose of this proposal is only to provide a starting point for a discussion on how the Florida Tech core requirements could be modernized. The proposed changes may raise implications not addressed herein. Much thought and additional input is still required. However, moving in this direction has the potential to solve several of the issues that have been raised in recent UGCC meetings, and handled by the Registrar’s office and/or various academic units. It would also bring us closer to the best practices of peer institutions, and allow students the flexibility to explore more freely their own interests within the confines of receiving the general education necessary to complement their major area of study.