
1.0 Curriculum Review

Objective:

Evaluate our organization, adequacy, and completeness of our courses and the effectiveness of our academic program so that we can continuously make modifications and adjustments to improve and meet the changing needs of academia and our construction industry.

Measures:

Indirect: Data collected from individual faculty, graduating seniors, industry focus groups, and recent alumni.

Industry experts, drawn from alumni, employers and other industry partners, will be invited to form Focus Groups (FGs). Each panel or focus group will have expertise in one or more of the topical areas covered by our courses (e.g. sustainability, BIM, safety, project management, etc.). FGs will be provided with course material for their review. Round-table discussions will be organized to solicit input and feedback on courses and program to help identify strengths and weaknesses. Short presentations from faculty will also be organized to bring each FG up to speed on course objectives and content covered prior to the round-table discussion. Comments and feedback will be collected and documented to determine areas of improvements.

Department Review – Regular monthly faculty/staff meetings, as well as an annual summer retreat, provide faculty members the opportunity to come together to reflect on courses taught (what worked/what did not) to document lessons learned and best practices in teaching the various courses in our curriculum. Issues related to teaching styles, impact of class size, course objectives and how they relate to minimum requirements (e.g. ACCE matrix), relevance of pre-requisites and adequate student knowledge etc. will be among the issues addressed.

Individual Faculty Evaluation and Review - These evaluations are required for both tenured faculty and lecturers alike. These evaluations are both quantitative and qualitative in nature and provide the department and the individual faculty member with an assessment of the quality of each course, the delivery of the material, and the relevance of the course content to perceived current practices.

Graduating Senior Surveys - Current student perceptions are provided by the graduating senior survey. Information regarding student perceptions of their educational skills and abilities, and other faculty and administrative support functions, provides quick and useful feedback to the department and the opportunity for program improvements where necessary.

Direct: Analysis of student work, capstone, observations. Reviews of the senior capstone course, BC 4444.
Modifications and Adjustments

Modifications and adjustments to the Building Construction curriculum were a result of the Indirect and Direct Measures discussed above.

Outcome 1:

Changes to the BC core curriculum include:

BC 2214 – Why Buildings Stand Up, is being taught for the first time in the Fall 2014 semester. This course replaces ESM 2104, Statics, which was taught through the engineering department. The department elected to teach the course in-house to make it more relevant and building construction specific.

BC 3134 – Temporary Structures, will be taught for the first time in the Spring 2015 semester. This course replaces CEE 3514, Geotechnical Engineering, which was taught through the engineering department. The department elected to teach the course in-house to make it more relevant and building construction specific.

BC 2984 – Soft Skills for the Construction Manager, is currently in development and being taught as a special study. This course will replace COMM 2004, Public Speaking, and will identify needed non-technical skills such as team building, personality strengths, conflict management, leadership, etc.

BC 2225 – Building Construction Seminar, is being taught for the first time Fall 2014. This 1 credit hour seminar will be repeated for a total of 3 credits. This course will explore current and relevant topics of inquiry within the construction domain, through engagement, service, and research. It will additionally articulate the complex interactions of stakeholders in construction by means of reflection on case studies, panel discussions, and seminars to establish the context, breath, and impact that construction education shares within larger academic, professional, and societal communities.

Outcome 2:

Upon extensive reviews and discussions from above mentioned measures, the department has developed 3 new options of study in order to remain competitive within the changing needs of today’s construction industry. Entering freshman of Fall 2013 will be the first class to fully encapsulate the revised curriculum.

Real Estate Option: The RE (Real Estate) option immerses students in the business side of construction, with joint classes in the College of Business and other disciplines. This option additionally fulfills all requirements for a double major with Real Estate within the same 134 credit hours that each option requires. The business of construction is about mobilizing and managing the resources, finances and people who develop projects. This option prepares graduates to navigate the interface of construction and real estate development in the business environment.
The SPB (Sustainable Building Performance) option focuses on the dynamics of building function in the context of growing societal needs, Leadership in Energy Efficient Design (LEED) and environmental and resource constraints. This option equips graduates to understand and manage the effects of construction decisions on building performance in terms of the mechanical, electrical and enclosure systems impact on energy usage, management and sustainability.

The VDC (Virtual Design Construction) option addresses evolving information management needs that are manifesting through Building Information Modeling (BIM), Virtual Design and Construction (VDC) and new contracting approaches including Integrated Project Delivery (IPD). This option prepares graduates to navigate changing and evolving information and communication technology (ICT) needs of project design delivery and management.

The 4th option remains the same. The CD (Construction and Design) option supports implementation with a strong focus on construction management and engineering design, including College of Engineering structural and geotechnical courses. This option allows graduates to understand how to manage the building of structures from design through construction.

Outcome 3:

The proposed minor in Building Construction will be an upper division undergraduate program housed in and administered by the Department of Building Construction in the College of Architecture and Urban Studies. Although the proposed minor is an unrestricted minor, Architecture and Engineering students are excellent candidates as some of the elective courses can be fulfilled by their major requirements. The proposed minor will supplement and compliment the academic requirements of both programs by bringing disciplinary expertise acquired through their major courses as well as knowledge, strategies, and perspectives acquired through the Construction Minor core curriculum. The proposed minor is also expected to boost interest in the master’s and doctorate programs already offered by the department.

Evaluation and Analysis

Because the first class for the above curriculum changes was the entering Freshmen class of Fall 2013, a full evaluation of the effectiveness cannot be established at this time. Initial feedback from students, faculty, and industry are enthusiastic and well-received. Student enrollment has doubled and a full time Professor of Practice has been hired to help maintain the student-to-faculty-ratio that is important to the department.

2.0 Strategic Plan

Objective: The objective of this review and assessment is to insure that our 3 year, 5 year, and 10 year goals and objectives set to support our vision and mission are achievable and to allow for adjustments to stay on target. Details of the strategic plan are discussed further. Figure 2 depicts a framework of the proposed Quality Assessment Plan.
Department Level Continuous Quality Assessment and Improvement

Every Semester
- VT Senior’s Academic Assessment
- Individual courses assessment and improvement
- Graduating senior surveys of outcomes attainment
- Job placement assessment
- Industry evaluation of student preparedness from Capstone course
- Academic retreat

Every Year
- Review appropriateness of curriculum content
- Prepare new action improvement plan

Every Two Years
- Secure feedback from alumni on student preparedness
- Secure feedback from employers on

Every Five Years
- Complete review of Mission, Goals, and Guiding Principles

Each Undergraduate Course Continuous Quality Improvement

Course learning objectives are communicated to students

Teaching and learning through lectures, reading, homework, exams, projects, and labs

Assessment:
- Observations of student performance on exams, etc.
- Student surveys

Continuous quality improvement

Note: There is broad participation of faculty in the items in the bold outlined boxes. The other items are administered and managed by department and/or University staff.

All components documented in databases, meeting minutes, and/or reports.

Process documented in course notebooks each time a course is offered.