School of Informatics and Computing Clinical Faculty Role

Overview

This document describes a clinical faculty position within the School of Informatics and Computing. Clinical positions are used to enable students to be mentored from a practicing professional who is focused in teaching excellence. In the Business School, a clinical faculty member would leverage their professional experience to provide unique practical insights to students. The Law School uses practicing attorneys to similarly provide practical professional mentorship to students. In the School of Informatics and Computing, the clinical setting occurs in the development of projects for customers both internal and external to the University. Working directly with a professional mentor provides learning opportunities that represent a tangible benefit to the student.

Justification for the Position

There are courses at the School of Informatics and Computing that are project based and focus on the development of systems to be deployed in realworld settings. These courses are typically offered for senior undergraduate students and graduate students. Because of the practical nature of these courses, students directly benefit from working with a practicing professional in the development of such systems.

For example, a course such as P442, Digital Systems, has a large practical project based service learning component. Students design aspects of a trail counter sensor that is deployed at several locations in the Bloomington area. The instructor for this course is a practicing engineer. This enables the students to gain insights into the practical issues surrounding this type of development.

Additionally, there would be occasions where specific handson experiences of courses would be created and delivered to the students by the engineer. An example might be an internetofthings embedded module where student spend several class meetings focused on creating a device through the guidance of the engineer. Often the time required to create these types of experiences is incompatible with the demands on research faculty member's time. In these cases, students benefit directly from a clinical faculty member providing these units. Examples of courses where this type of approach might be leveraged would be operating systems, computer architecture, and digital design.

Senior level design courses such Informatics Capstone would also benefit from working with a practicing engineer. In this case, small groups of students work directly with an engineer. Because the engineer is regularly utilizing these skills, the students gain unique practical insights into the specific technical challenges of their projects. As the intelligent systems engineering program develops, the capstone course will have a potentially greater need for student advising from a practicing engineer. While some of this advising will come from engineers external to the university, a School based engineer will be able to spend greater amounts of time with the students along with being more familiar with issues specific to students in project courses.

Graduate students need the benefit of professional engineering advising in their course of study. This typically involves the engineer working directly with the student as a mentor. This mentoring provides a tangible benefit over simply outsourcing the development work to a staff engineer. With mentoring the student will become increasingly more capable through the interaction. An example project might be a security faculty member and graduate student would like to take data on an embedded random number generator. The engineer would work with the graduate student to develop a system that would be capable of performing this data collection. In this process, the graduate student would be doing much of the actual development work through the instruction and mentoring of the engineer.

Position Duties

60% Project Course Instruction and Development: This represents the equivalent of 4 courses per year of project based instruction. These would be courses such as P442/542 Digital Systems and P545 Embedded and Realtime systems. This would also include the development of pedagogy for portions of courses that would benefit from a practical module.

25% Project Advising: This position would be involved in advising project teams in the Informatics Capstone course along with the ISE Capstone course. This position would also work directly with graduate students on the development of systems to enable their research.

15% Administrative Duties: This component would be assigned by the School as needed. However, it would be anticipated that this would involve participating in the curriculum development of project based courses such as Capstone and Engineering Courses.

References

1.) http://policies.iu.edu/policies/categories/academicfacultystudents/academicappointmentreview/Regulationofclinicalandlectureappointments.shtml
2.) http://www.indiana.edu/~bfc/docs/policies/lecturerClinicalAppointments.pdf
3.) http://vpfaa.indiana.edu/docs/promotion_tenure_reappointment/nttreviewreappoint.pdf