Overview of Ph.D. Degree Program

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The *Doctorate of Philosophy* degree is an exciting means to obtain specialized knowledge while making original contributions to the fields of computer architecture, machine learning, and evolvable hardware. The Ph.D. in Computer Engineering is primarily a *research-oriented* degree for individuals wanting to **advance** the state of the art (perform *research*), in contrast to those who primarily **apply** the state of the art (perform *product development*). While B.S. and M.S. programs prepare students for careers in product development, most Ph.D.s conduct research. Thus, students considering the Ph.D. program must be committed to careers as professors in academia or scientists at research institutes.

The Ph.D. program will involve approximately 51 to 57 credit hours of graduate coursework beyond the B.S. degree. An underlying purpose of this coursework is to **prepare** the student for conducting research leading to a *Ph.D. dissertation*. While excellent performance in coursework is a prerequisite for graduation from the Ph.D. program, high grades alone are **not sufficient**. Rather, **your ability to perform original research** of *publishable quality* will be emphasized.

Your degree program should be **concentrated and un-interrupted**, rather than diluted and drawn-out. The more intense the effort is, the greater the *scholarly quality*, *degree of timeliness*, and *technical impact* your research will have. Ideally, you should be on campus full-time or at least two days per week. In particular, you must **work closely** on research with your advisor. You should meet with him/her to discuss your *research specialization* several hours each week.

The selection of your specialization is an extremely important step in the Ph.D. program. It determines the primary technical subfield in which you will focus your career as a researcher. This crucial decision should be made **as soon as it is feasible**. Once you have firmly decided on your specialization within computing, you should then approach an interested faculty member to request his/her designation as your *Ph.D. advisor*. My personal view is that an effective Ph.D. advisor (or any teacher for that matter) should foremost act as a facilitator **developing the skills** of each student to their maximum potential, in addition to imparting technical information.

In essence, the Ph.D. program is about developing skills for surveying problems and solving them in new ways. This implies much more than simply possessing or acquiring specific knowledge. Moreover, one must adopt a *scholarly attitude* rooted in being **contemplative**, **creative**, and **expressive**. These skills can be continually improved; this is what makes the Ph.D. experience so interesting, challenging, and continually rewarding.

Please download my Ph.D. Plan for a timetable of degree activities and feel free to contact me for further information.