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A New Curriculum for Physics Graduate Students[1]

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Effective Fall 2008, GW Physics implemented a new graduate curriculum, addressing nation-wide problems: (1) wide gap between 50-year-old curricula and the proficiencies expected to start research; (2) high attrition rates and long times to degree; (3) limited resources in small departments to cover all topics deemed essential. The new curriculum: (1) extends each course to 4 hours weekly for better in-depth coverage and cautious additions; (2) decreases the number of core-courses per semester to 2, with less "parallel-processing" of only loosely correlated lectures; (3) increases synergies by stricter logical ordering and synchronisation of courses; (4) frees faculty to regularly offer advanced courses; (5) integrates examples tied to ongoing research in our department; (6) integrates computational methods into core-lectures; (7) encourages focusing on concepts and "meta-cognitive skills" in studio-like settings. The new curriculum and qualifying exam, its rationale and assessment criteria will be discussed. This concept is tailored to the needs of small departments with only a few research fields and a close student-teacher relationship.

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