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Objectives and Assessment of the NMSU Physics Ph.D. program

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New Mexico State University (NMSU) in Las Cruces, NM, is accredited by the Higher Learning Commission (HLC) and a member of the North Central Association of Colleges and Schools (NCA). As part of our continuous accreditation, the physics department annually assesses its progress towards goals and objectives. Our academic goals include the development of skills pertinent to solving advanced problems in physics, a mastery of advanced concepts in physics, an in-depth knowledge of one or more subfields, and develop the ability to conduct original research in a specialization. These goals are supported by objectives, including scientific expertise, advanced training, experimental training, communication skills, and technical knowhow. We measure one direct student learning outcome, the ability to solve advanced problems in general physics subjects. The instrument for this measurement is our written physics comprehensive (Ph.D. candidacy) exam, which is administered by an examination committee consisting of all faculty members. We report annually on the percentage of students passing the exam in the various areas (QM, mechanics, E&M, Stat. Mech.). Ineffective preparation of our students in one area would show up by unusually low scores in that area. Since the problems are written and graded by all faculty (not just by those who taught the class), this provides an independent assessment of student learning and also evidence by other professionals skilled in the field. Our examinations are similar to published exams at other institutions. The results of the exam provide feedback to the course instructors, to the students, and to the department head who schedules instructors and courses. In some cases, retaking a course has been a condition of passing the exam for a student. (I acknowledge the efforts of Gary Kyle, who has managed our assessment for many years, and of the entire NMSU physics faculty for contributing to this process.)