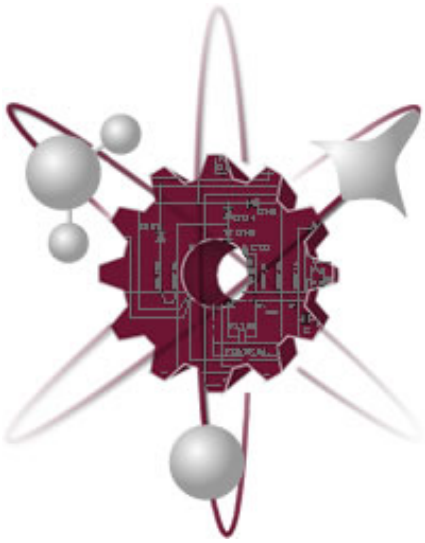
Criterion 6: Faculty

Engineering Physics

Bachelor of Science in Engineering Physics



Self-Study Report

New Mexico State University

June 2012

CRITERION 6. FACULTY

A. Faculty Qualifications

Describe the qualifications of the faculty and how they are adequate to cover all the curricular areas of the program. This description should include the composition, size, credentials, and experience of the faculty. Complete Table 6-1. Include faculty resumes in Appendix B.

The Engineering Physics program in the NMSU College of Engineering is offered jointly by the Department of Physics in the College of Arts & Sciences, and the Departments of Mechanical & Aerospace Engineering Mechanical & Aerospace Engineering (ME/AE), Electrical Engineering (EE) and Chemical Engineering (Ch E) in the College of Engineering. Specialty courses in, Aerospace Engineering, Chemical Engineering, Electrical Engineering and Mechanical Engineering are typically taught by the respective ABET-accredited departments in the College of Engineering. On rare occasions, physics faculty will teach cross-listed courses, in particular between Electrical Engineering and Physics. The Department of Physics provides a strong fundamental physics education in support of these disciplines and overall program management.

The instructional faculty members and staff of the Departments of Physics, Aerospace & Mechanical Engineering, Electrical Engineering and Chemical Engineering are summarized in Table 6-1.a-d. The combination of Physics and Engineering faculty is well qualified to cover all the curricular areas of the Engineering Physics (EP) program.

As of May 2012, the Physics faculty consists of the following:

- thirteen tenured faculty members (12.5 full time equivalent lines),
- two college faculty members with teaching responsibilities (1.0 full-time equivalent).
- two emeritus professors with teaching responsibilities,
- one part-time community college professor with teaching responsibilities,
- one professional staff member with responsibility for instructional support and involvement in instructional laboratory development,
- three graduate teaching assistants with outstanding teaching skills, who are assigned as instructors of record for introductory physics courses,
- one staff member in charge to help with outreach, websites, retention and recruitment.

All faculty members, who teach courses needed for the Engineering Physics program, have Doctorate degrees in Physics, other Sciences or Engineering. The professional support staff member has an M.S. degree in Electrical Engineering. Only truly outstanding graduate assistants (top 5%) are assigned as lecturers for introductory physics courses. Resumes of all faculty members, staff and graduate students who have been involved in teaching duties are provided in Appendix B. The faculty, teaching assistants, and staff are well qualified to teach the required curriculum.

Three of the physics faculty members (Drs William Gibbs, Matthias Burkardt, Stefan Zollner) are Fellows of the American Physical Society (APS). Dr. Zollner has served a four-year term in the FIAP (Forum of Industrial and Applied Physics of the APS) Chair-line, a four-year term as FIAP Councilor, a four-year term on the APS Council, a two-year term on the APS Executive Board, and on many APS committees. Dr. De Antonio has served in the Chair line of the Physics

Committee of the American Society for Engineering Education (ASEE). Dr. Nakotte has served a four-year term as a member of the Executive Committee of the Four Corners Section of the APS. Lina Abdallah currently serves as the student member of the Executive Committee of the Four Corners Section of the APS. Dr. Zollner also serves two-year terms on the executive committees of the New Mexico Chapter and the Electronic Materials and Processing Division of the American Vacuum Society (AVS). Dr. Matthias Burkardt currently serves a four-year term in the Chair-line of the Topical Group on Hadronic Physics in the APS. Dr. Gibbs serves as an Associate Editor for the journal The Physical Review C published by the APS. Other accomplishments of faculty are listed in the Appendix B.

B. Faculty Workload

Complete Table 6-2, Faculty Workload Summary, and describe this information in terms of workload expectations or requirements.

Faculty workloads are presented in Table 6.2.a-d, which lists all faculty members (and some staff and students) who have a vested interest and/or taught courses related to the Engineering Physics program in the Departments of Physics, Mechanical & Aerospace Engineering, Electrical Engineering and Chemical Engineering, respectively.

As can be seen in Table 6.2.a, the teaching loads in the Department of Physics are relatively low. In the College of Arts & Sciences, the nominal teaching load for tenured and tenure-track faculty of a PhD-granting department (such as Physics) is three formal courses (9 credit hours) per year, which is considered to be a 37.5% teaching load. In addition, regular faculty members are expected to carry out active externally funded research programs, support and supervise undergraduate and graduate student research, and perform service. The entire regular (tenured) faculty and both emeritus faculty members have active research programs, most of them externally supported by government or industrial agencies. Many faculty further reduce their teaching load by using grant funds to “buy out” academic year teaching and spend more time on research. One tenured faculty member (William Gibbs) has a 50% position and also works as an Associate Editor for the high-impact *Physical Review* journal. The strong funded research component allows the department to offer well supported undergraduate and graduate research opportunities. Unlike Physics, there is no similar (fairly) uniform percent allocation in the engineering departments (College of Engineering), and the distribution of effort is typically left to the individual departments and their heads.

Faculty members are evaluated annually for their performance in the areas of teaching, research, outreach, and service as specified by the College of Arts & Sciences and NMSU policy and procedures. The evaluation is performed by a committee consisting of two tenured faculty members elected by the faculty and the Department Head. This evaluation is used as the primary basis for awarding merit-based salary increases, and it is considered in the promotion and tenure process. Criteria for teaching may include student and peer evaluations, direct measures of learning, mentoring of graduate students, and extra effort preparing course or instructional laboratory materials. Participation in the ABET assessment process is also considered. Research is evaluated on the basis of number and quality of publications, conference presentations, proposals submitted and funded, and support of students. Service can include professional service, such as refereeing publications or proposals, organization of

conferences, service on university committees, and community service. Major prizes won in any of these areas also influence the rating. In addition to the annual evaluations faculty are also evaluated every 3 to 5 years by the Graduate School for membership on the graduate faculty. The primary criteria are a) creative activity; b) continual study in their field; and c) successful teaching.

C. Faculty Size

Discuss the adequacy of the size of the faculty and describe the extent and quality of faculty involvement in interactions with students, student advising and counseling, university service activities, professional development, and interactions with industrial and professional practitioners including employers of students.

The size of the physics faculty is adequate to teach all courses required for the engineering physics curriculum at least once per year. First-year introductory physics courses are taught in both fall and spring semesters and usually also during the summer. Like many science departments, the Department of Physics has lost many faculty members over the last 20 years. We have responded to this loss of faculty lines by reducing the frequency of physics electives or by eliminating them entirely. For example, *Introduction to Optics* has only been taught once in two years. *Experimental Nuclear Physics* will be taught in the fall of 2012 for the first time in many years. To increase elective opportunities for students, some courses are taught jointly between physics and engineering, for example *Introduction to Nanotechnology* (with Chemical Engineering), *Optics* (with Electrical Engineering), and *Modern Materials* (taught by Physics).

Exit interviews usually show that students are satisfied with the quality of advising they receive. All engineering physics students meet with an advisor at least once every semester (usually a week before course registration starts for the following semester). The advising responsibility is presently been shared by two Engineering Physics Advisors (Drs Heinz Nakotte, Tom Hearn).

Four faculty members (Drs Boris Kiefer, Michaela Burkardt, Michael De Antonio, Heinz Nakotte) engage with students through the Society of Physics Students and the Society for Engineering Physics Students. These societies meet weekly or biweekly (sometimes jointly) to review important skills (opportunities for jobs and internships, resume writing, applying for graduate school, taking standardized test), usually in the event. In many instances, the department pays for pizza at such events to encourage student attendance. We also have society meetings (moderated by faculty) where students report on their undergraduate research or capstone projects.

The most significant challenge related to faculty is the following: Due to space limitations in **Gardiner Hall**, very limited start-up funds for new faculty, and limited cash cost-share contributions for equipment proposals, only two tenured faculty members (Drs Stefan Zollner, Jacob Urquidi) have on-campus physics research laboratories suitable for capstone projects related to undergraduate research. Therefore, most Engineering Physics students typically fulfill their capstone requirement either utilizing research facilities that are available in the engineering departments or by the design of physics demonstrations. Moreover, a substantial fraction of physics faculty members perform theoretical research or experimental off-campus research (especially at National Laboratories, such as Los Alamos, Brookhaven, or Fermi Lab).

Nevertheless, the shortage of experimental facilities in the Department of Physics limits employment opportunities for students as undergraduate research aides or for undergraduate research and capstone projects.

D. Professional Development

Describe the professional development activities that are available to faculty members.

All tenured faculty members are eligible for sabbaticals as described in NMSU Policy Manual Section 7.20.70. "*The purpose of a sabbatical leave is to promote professional growth*." After at least 12 semesters of full-time service, faculty members apply for a sabbatical during the spring semester, requiring approval from the Department Head, the Dean of Arts & Sciences, and the Executive Vice President and Provost. Sabbatical leaves are for one semester at no reduction in salary or for a year at 60% of salary. The other 40% of salary plus travel expenses are often covered, at least in part, by a host institution visited by the faculty member on sabbatical, such as Los Alamos National Laboratory, University of New Mexico, or Jefferson Laboratory in recent history.

The Department of Physics has a vibrant weekly colloquium speaker series. Typically, about two thirds of colloquium speakers are external. In addition to giving a colloquium about their research, the colloquium speakers also meet individually with faculty and students throughout the day to exchange ideas about topics of common interest (teaching, research, service). Both, the colloquium and the individual meetings, contribute to faculty development. Many of the colloquium series are done jointly with other departments.

Most tenured physics faculty members (all except two) have significant external research grants (in excess of typically 100 k$ per year per faculty member). Their research grants typically contain funds for travel to conferences or other institutions, and almost all faculty members regularly attend meetings and conferences. Although the primary purpose of conference attendance is often dissemination of research results and exchange of knowledge, many conferences such as the March or April meetings of the American Physical Society usually also have sessions contributing to professional development in physics education. Most of our faculty members tend to attend such sessions.

The Department of Physics (from its operational I&G funds) and the College of Arts & Sciences provide travel support for College Faculty to attend a regional or national meeting on Physics Education (such as the annual meeting of the American Society of Engineering Education or the American Association of Physics Teachers). Sometimes, such attendance is also supported by the conference organizers. The Department Head and other departmental leaders attend physics leadership conferences, such as the biennial physics department chair conference (organized by APS and AAPT) and meetings intended to increase STEM education and enrollment or physics teacher education. The Department Head shares learning obtained at such conferences and workshops with relevant physics faculty members.

To facilitate informal sharing of information between faculty members, the physics faculty members meet once a week for a brown-bag lunch in the physics conference room. There are also special faculty meetings dedicated to continuous improvement of our undergraduate physics programs. Some of these meetings involve faculty from the participating engineering

departments. The Engineering Physics External Advisory Board and the Physics External Advisory Board (two separate entities) also provide valuable information, advice, and recommendations to the physics faculty, both in their reports and also in meetings with individual faculty or with groups of faculty.

While NMSU is a minority-serving institution with very limited funds for professional development, there are nevertheless ample opportunities to achieve this aim. Typically, all physics faculty members travel at least once per year, many of them more often. Therefore, institutional support for faculty development appears adequate.

E. Authority and Responsibility of Faculty

Describe the role played by the faculty with respect to their guidance of the program, and in the development and implementation of the processes for the evaluation, assessment, and continuing improvement of the program, including its program educational objectives and student outcomes. Describe the roles of others on campus, e.g., dean or provost, with respect to these areas.

As shown in Table 6.2.a, all physics faculty contribute to the guidance and execution of the engineering physics program, although some contribute a greater portion of their effort than others. It should be noted that neither the physics nor the engineering departments offer any course dedicated to Engineering Physics students only. There are two reasons for that: a) the number of EP students is still too low (35 students in Spring 2012) in order to ensure the minimum enrollment of 10 students required for any undergraduate course, and b) none of the departments has the personnel strength to teach additional courses. In Table 6.2, we list only the physics and engineering courses, which have been (or could have been) taken by Engineering Physics students in order to fulfill courses requirements or electives. Generally, the majority of students enrolled in those courses were other engineering or science (including physics) majors.

Because of that, it is also not necessarily straightforward to provide a realistic estimate the actual time devoted to the Engineering Physics program by individual faculty members from the different departments. We used the following scheme to come up with some rough estimates:

1. NMSU considers eight 3-credit courses per semester as a full load. i.e. each course counts for 12.5% of time commitment. Given that undergraduate enrollments of physics and Engineering Physics majors are fairly similar, we can estimate that teaching three relevant undergraduate courses per year (1.5 per semester) therefore translate to 18.75% of time commitment due to *actual teaching in the EP program*. For any of the physics courses, the faculty member was given full credit as he/she is expected to fully comply with all Engineering Physics assessment requirements, regardless whether there several or no Engineering Physics students enrolled in the course. For any engineering course, the faculty member received only half of the credit since none of those courses has any EP-specific assessment requirements.
2. Some of differences between *actual teaching in the EP program* and *percentage teaching assignment* (column 4 in Table 6.2) is due to teaching of non-relevant (e.g. physics for non-science majors, graduate courses); however some of it can be attributed to course

curriculum development and/or advising. Curriculum changes are proposed by the Engineering Physics Program Committee, reviewed by the Physics Department Curriculum Committee, and then approved by the entire physics faculty in a faculty meeting. Therefore, all physics faculty members are involved in course/curriculum development for the Engineering Physics program, and we estimated the commitment as 2.5% (for non-members of the Curriculum Committee), 5% (for members) and 7.5% (for the Curriculum Committee Chair, Dr. Igor Vasiliev)..

3. The time commitment of faculty members involved in advising of Engineering Physics students was estimated at 5%.
4. Time commitments for serving on the Engineering Physics Program Committee were estimated at 5% for committee members (including *ex officio*) and 10% for the Chair of the Committee Dr. (Heinz Nakotte).
5. Faculty members who worked with Engineering Physics students on research or educational projects in the past year received another 5%.
6. The resulting percentages of time devoted were then rounded to next integer. It has to be pointed out that some of the contributions are not solely dedicated to Engineering Physics alone (i.e. the contributions computed from teaching).

The percentage of time devoted to the engineering physics program is listed in the last column in Table 6.2. It does not include advising of graduate student research, teaching of graduate courses, and teaching of algebra-based or conceptual physics courses (including Viewing-the-Wider-World courses). A faculty member on sabbatical will also, by definition, contribute very little to the engineering physics program.

All faculty contribute to the assessment of ABET program outcomes. Each instructor completes a *Post Course Instructor Comment Form* after each semester. The faculty members also report on their teaching effectiveness (including evidence of student learning and/or evidence from other professionals) in their annual performance reports on the *NMSU Digital Mea*sures web site. Every faculty member is responsible for one outcome and he or she reviews all relevant post-instruction forms for this outcome. There is an annual assessment faculty meeting, where the faculty report on their outcomes and discuss solutions to address findings and improve the program. This ensures that all faculty members have a stake in the engineering physics program and contribute to continuous improvement. All faculty members meet with the engineering physics advisory board members during a pizza lunch at the annual board meeting. Many faculty members contributed to the writing of the ABET self-study. In particular, assessment of individual program outcomes and compilation of different criteria for this Self-Study Report were assigned to different faculty members.

The Physics Department Head documents contributions to continuous improvement of the physics degree programs in his annual performance appraisal of the faculty members. Usually, almost all faculty members meet expectations with their contributions to the program. The Associate Deans for Academics in both colleges work with the Physics Department Head to encourage compliance with institutional and ABET assessment deliverables by all faculty members. For example, faculty members who do not properly document their teaching effectiveness in the NMSU Digital Measures web site receive a performance rating of “Does not meet expectations” for their teaching contributions. The institutional expectations for

documentation of teaching effectiveness for individual faculty and for the overall assessment of academic programs are very similar to the ABET expectations. Annual assessment reports for the undergraduate and graduate physics programs are sent to the Office of Assessment, which reports to the Deputy Provost. This office provides feedback to the department about the effectiveness of its assessment efforts.

The Dean of Arts & Sciences and the Associate Dean of Academics in the College of Engineering met with the Engineering Physics External Advisory Board during its last meeting. (This is common for all annual board meetings.) Deans and Associate Deans in both colleges also review the report of the Engineering Physics Advisory Board and discuss implementation of recommendations with the Physics Department Head. For example, the Dean of Arts & Sciences recently established college-wide professional development grants for faculty and staff and travel grants for students. Both colleges revised and expanded the student ambassador program to recruit and retain students and to enhance the participation of students in academic programs.

Table 6-1.a. Faculty Qualifications – Department of Physics, Bachelor of Science in Engineering Physics

Faculty Name	Highest Degree Earned- Field and Year	Rank [1]	Type of Academic Appointment [2] T, TT, NTT	FT or PT [3]	Years of Experience			Professional Registration/ Certification	Level of Activity [4] H, M, or L		
					Govt./Ind. Practice	Teaching	This Institution		Professional Organizations	Professional Development	Consulting/summer work in
Matthias Burkardt	Ph.D. Physics 1989	P	T	FT	2	15	17	NA	M	H	L
Michaela Burkardt	Ph.D. Physics 1992	ASC	NTT	PT	2	10	10	NA	L	M	L
Michael DeAntonio	Ph.D. Physics 1993	ASC	NTT	PT	12	11	10	NA	H	H	H
Michael Engelhardt	Ph.D. Physics 1994	ASC	T	FT	11	7	8	NA	L	H	L
William Gibbs	Ph.D. Physics 1961	P	T	PT	30	11	11	NA	H	M	L
Thomas Hearn	Ph.D. Geophysics 1985	ASC	T	FT	1	11	12	NA	L	H	L
Stephen Kanim	Ph.D. Physics 1999	ASC	T	FT	8	19	14	NA	L	H	L
Boris Kiefer	Ph.D. Mineral Physics 2002	ASC	T	FT	0	9	9	NA	L	H	M
Heinz Nakotte	Ph.D. Physics 1994	P	T	FT	18	13	15	NA	M	H	L
James Ni	Ph.D. Geophysics 1984	P	T	FT	3	26	28	NA	L	H	L
Vassilios Papavassiliou	Ph.D. 1988	ASC	T	FT	4	16	17	NA	L	H	L
Stephen Pate	Ph.D. Physics 1987	P	T	FT	0	17	17	NA	L	H	L

Jacob Urquidi	Ph.D. Physical Chemistry 2001	ASC	T	FT				NA	L	M	L
Igor Vasiliev	Ph.D. Materials Science 2000	ASC	T	FT	1	9	10	NA	L	H	L
Stefan Zollner	Ph.D. Physics 1991	P	T	FT	14	7	2	NA	H	H	H
Peter de Châtel	Ph.D. Physics 1988	A	NTT	PT	7	37	11	NA	L	M	L
Tarlochan Dhillon	Ph.D. Materials Science and Engineering 1999	A	NTT	PT	0	40	6	NA	L	H	L
George Goedecke	Ph.D. Physics 1961	A	NTT	PT	3	51	51	NA	L	M	L
Lina Abdallah	M.S. Physics 2009	O	NTT	PT	0	2	2	NA	M	H	L
Manal Abdallah	M.S. Physics 2009	O	NTT	PT	0	13	1	NA	L	H	L
Sophia Cisneros	Ph.D. Physics 2011	O	NTT	PT				NA	L	H	L
Chris Pennise	M.S. Electrical Engineering 1992	O	NTT	FT	13	13	11	NA	L	M	L

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3. Code: FT = Full-time PT = Part-time Appointment at the institution.
4. The level of activity (high, medium or low) should reflect an average over the year prior to the visit plus the two previous years.

Table 6-1.b. Faculty Qualifications – Department of Mechanical & Aerospace Engineering, Bachelor of Science in Engineering Physics

Faculty Name	Highest Degree Earned- Field and Year	Rank [1]	Type of Academic Appointment [2] T, TT, NTT	FT or PT [3]	Years of Experience			Professional Registration/ Certification	Level of Activity [4] H, M, or L		
					Govt./Ind. Practice	Teaching	This Institution		Professional Organizations	Professional Development	Consulting/summer work in
Eric Butcher	Ph.D. Mechanical Engineering 1997	ASC	T	FT	1	14	5	NA	H	H	L
Chunpei Cai	Ph.D. Aerospace Engineering 2005	AST	TT	FT	0	4	4	NA	M	H	L
Vincent Choo	Ph.D. Composite Materials 1982	ASC	T	FT	3	29	27	NA	M	M	L
Edgar G. Conley	Ph.D. Engineering Materials 1986	ASC	T	FT	4	36	34	NA	M	H	M
Gabe Garcia	Ph.D. Mechanics of Materials 1996	ASC	T	FT	0	16	16	NA	L	L	H
Joe Genin	Ph.D. Engineering Materials 1963	P	T	FT	9	46	27	NA	H	H	H
Harry C. Hardee	Ph.D. Mechanical Engineering 1966	P	T	FT	14	22	21	NA	L	M	M
Young S. Lee	Ph.D. Mechanical Engineering 2006	AST	TT	FT	5	6.5	4	NA	H	H	L
Ian Leslie	Ph.D. Mechanical Engineering 1984	ASC	T	FT	0	28	28	NA	L	L	L
Ou Ma	Ph.D. Mechanical Engineering 1991	P	T	FT	11	10	10	NA	H	M	M
Young Ho Park	Ph.D. Mechanical Engineering 1994	ASC	T	FT	2	13	12	NA	H	H	M
Bashar Qawasmeh	Ph.D. Mechanical Engineering 2012	AST	NTT	FT	0	1	1	NA	L	L	L

Amit Sanyal	Ph.D. Aerospace Engineering 2004	AST	TT	FT	0	7	2	NA	H	H	M
Ma'en Sari	Ph.D. Mechanical Engineering	AST	NTT	FT	0	2	2	NA	L	L	L
Banavara N. Shashikanth	Ph.D. Aerospace Engineering 1998	ASC	T	FT	2	21	21	NA	L	L	L
Fangjun Shu	Ph.D. Mechanical Engineering 2005	AST	TT	FT	0	2	2	NA	M	L	L
Mark E. Stevens	B.S. Mechanical Engineering 1990	I	NTT	PT	6	2	2	NA	L	L	L
Mingjun Wei	Ph.D. Theoretical & Applied Mechanics	ASC	T	FT	0	0	6	NA	H	H	L
Edward A. Berndt	M.S. Mathematics	A	NTT	PT	0	2	5	NA	L	L	L
Nathanael Greene	M.S. Mechanical Engineering 2004	A	NTT	PT	7	2	2	NA	L	L	L
James F. Vennes	IT Support	O	NTT	PT	0	2	10	NA	L	L	L

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3. Code: FT = Full-time PT = Part-time Appointment at the institution.
4. The level of activity (high, medium or low) should reflect an average over the year prior to the visit plus the two previous years.

Table 6-1.c. Faculty Qualifications – Department of Electrical Engineering, Bachelor of Science in Engineering Physics

Faculty Name	Highest Degree Earned- Field and Year	Rank [1]	Type of Academic Appointment [2] T, TT, NTT	FT or PT [3]	Years of Experience			Professional Registration/ Certification	Level of Activity [4] H, M, or L		
					Govt./Ind. Practice	Teaching	This Institution		Professional Organizations	Professional Development	Consulting/summer work in
Deva Borah	Ph.D. Information Sciences 2000	ASC	T	FT	0	19	12	NA	M	H	L
Sukumar Brahma	Ph.D. Electrical Engineering 2001	AST	TT	FT	2	9	5	NA	H	H	M
Laura Boucheron	Ph.D. Electrical and Computer Engineering 2008	AST	TT	FT	2	1	1	NA	L	H	L
Sang-Yeon Cho	Ph.D. Electrical and Computer Engineering 2003	AST	TT	FT	0	5	5	NA	M	H	L
Jeanine Cook	Ph.D. Electrical Engineering 2002	ASC	T	FT	7	7	9	NA	M	H	L
Charles Creusere	Ph.D. Electrical Engineering 1993	P	T	FT	10	11	11	NA	H	H	L
Muhammed Dawood	Ph.D. Electrical Engineering 2001	ASC	T	FT	6	14	7	NA	L	M	L
Philip DeLeon	Ph.D. Electrical Engineering 1989	P	T	FT	0	16	16	NA	L	M	M
Paul Furth	Ph.D. Electrical and Computer Engineering 1991	ASC	T	FT	5	17	17	NA	L	L	L
Hong Huang	Ph.D. Electrical Engineering 1994	AST	TT	FT	11	11	9	NA	M	M	L
Joerg Kliewer	Ph.D. Electrical Engineering 1999	AST	TT	FT	0	13	5	NA	H	H	L

Kwong Ng	Ph.D. Electrical Engineering 2005	P	T	FT	0	27	21	NA	L	H	L
Vojin Oklobdzija	Ph.D. Electrical Engineering 1982	P	T	FT	27	6	2	NA	H	H	H
Robert Paz	Ph.D. Electrical Engineering 1991	ASC	T	FT	2	21	21	NA	L	M	L
Krist Peterson	Ph.D. Electrical Engineering 1998	ASC	NTT	FT	6	20	27	NA	M	M	M
Nadipuram Prasad	Ph.D. Electrical Engineering 1989	ASC	T	FT	15	26	26	NA	L	M	L
Jaime Ramirez-Angulo	Ph.D. Electrical Engineering 1990	P	T	FT	0.5	29	22	NA	H	L	L
Steven J. Stochaj	Ph.D. Physics 1990	P	T	FT	3	32	32	NA	M	M	M
Liu Wenxin	Ph.D. Electrical Engineering 2005	AST	TT	FT	3	3	3	NA	L	H	L
Charles Boehmer	M.S. Electrical Engineering 1973	A	NTT	PT	39	12	12	NA	L	L	L

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3. Code: FT = Full-time PT = Part-time Appointment at the institution.
4. The level of activity (high, medium or low) should reflect an average over the year prior to the visit plus the two previous years.

Table 6-1.d. Faculty Qualifications – Department of Chemical Engineering, Bachelor of Science in Engineering Physics

Faculty Name	Highest Degree Earned- Field and Year	Rank [1]	Type of Academic Appointment [2] T, TT, NTT	FT or PT [3]	Years of Experience			Professional Registration/ Certification	Level of Activity [4] H, M, or L		
					Govt./Ind. Practice	Teaching	This Institution		Professional Organizations	Professional Development	Consulting/summer work in
Paul Anderson	Ph.D. Chemical Engineering 1987	ASC	T	FT	0	24	14	NA	L	M	L
Shuguang Deng	Ph.D. Chemical Engineering 1996	P	T	FT	12	9	9	NA	H	H	M
Abbas Ghassemi	Ph.D. Chemical Engineering 1991	P	T	FT	14	25	22	NA	M	L	H
Jessica Houston	Ph.D. Chemical Engineering 2005	AST	TT	FT	4	3	3	NA	H	H	L
Hongmei Luo	Ph.D. Chemical Engineering 2006	AST	TT	FT	3	3	3	NA	H	H	L
Martha Mitchell	Ph.D. Chemical Engineering 1996	P	T	FT	1	16	16	NA	H	H	L
David Rockstraw	Ph.D. Chemical Engineering 1989	P	T	FT	27	16	16	NA	H	M	H
Ken White	Ph.D. Civil Engineering 1970	P	NTT	FT	1	42	39	NA	M	L	M
M. Ginger Scarbrough	Ph.D. Structural Geology 1992	A	NTT	PT	3	0	3	NA	L	L	L

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2. Code: T = Tenured TT = Tenure Track NTT = Non Tenure Track
3. Code: FT = Full-time PT = Part-time Appointment at the institution.
4. The level of activity (high, medium or low) should reflect an average over the year prior to the visit plus the two previous years.

Table 6-2.a. Faculty Workload Summary – Department of Physics, Bachelor of Science in Engineering Physics

Faculty Member (name)	PT or FT[1]	Classes Taught (Course No./Credit Hrs.) Term and Year[2]	Program Activity Distribution[3]			% of Time Devoted to the Program[5]
			Teaching	*Research or Scholarship*	*Other*[4]	
Matthias Burkardt	FT	PHYS 395 (3) Fall 2011	27	55	18	10
Michaela Burkardt	PT	PHYS 213 (3) Fall 2011 PHYS 350 (3) Fall 2011 PHYS 214 (3) Spring 2012	90	0	10	21
Michael DeAntonio	PT	PHYS 304 (4) Fall 2011 PHYS 473 (3) Spring 2012	61	34	3	25
Michael Engelhardt	FT	None (sabbatical leave)	28	65	7	3
William Gibbs	PT	PHYS 476 (3) Fall 2011	40	30	30	10
Thomas Hearn	FT	PHYS 451 (3) Fall 2011	40	40	20	25
Stephen Kanim	FT	PHYS 216G (3) Fall 2011 PHYS 216G (3) Spring 2012 PHYS 450 (3) Spring 2012	40	50	10	25
Boris Kiefer	FT	PHYS 454 (3) Fall 2011 PHYS 305V (3) Spring 2012 PHYS 455 (3) Spring 2012	48	42.6	9.4	28
Gary Kyle	FT	PHYS 217 (3) Fall 2011	45	42.5	12.5	15
Heinz Nakotte	FT	PHYS 461 (3) Fall 2011 PHYS 488 (3) Fall 2011 PHYS 462 (3) Sp 2012	30	50	20	44
James Ni	FT	none	15	70	15	3
Vassilios Papavassiliou	FT	PHYS 491 (3) Fall 2011 PHYS 475 (3) Spring 2012	37.5	50	17.5	15

Stephen Pate	FT	PHYS 315 (3) Spring 2012 PHYS 315L (3) Spring 2012 PHYS 480 (3) Spring 2012	45	45	10	29
Jacob Urquidi	FT	PHYS 215G (3) Fall 2011 PHYS 215G (3) Fall 2011	51	44	5	18
Igor Vasiliev	FT	none	40	50	10	13
Stefan Zollner	FT	PHYS 215G (3) Spring 2012	35	15	50	20
Tarlochan Dhillon	PT	PHYS 215G (3) Spring 2012	100	0	0	6
George Goedecke	PT	PHYS 495 (3) Spring 2012	100	0	0	6
Peter de Châtel	PT	PHYS 489 (3) Spring 2012	100	0	0	6
Chris Pennise	FT	PHYS 213GL (1) Fall 2011 PHYS 215GL (1) Fall 2011 PHYS 216GL (1) Fall 2011 PHYS 214GL (1) Spring 2012 PHYS 215GL (1) Spring 2012 PHYS 216GL (1) Spring 2012	90	0	10	15

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3. Program activity distribution should be in percent of effort in the program and should total 100%. Figures are for 2011 calendar year.
4. Indicate sabbatical leave, etc., under "Other."
5. Out of the total time employed at the institution (see text for explanation).

Table 6-2.b. Faculty Workload Summary – Department of Mechanical & Aerospace Engineering, Bachelor of Science in Engineering Physics

Faculty Member (name)	PT or FT[1]	Classes Taught (Course No./Credit Hrs.) Term and Year[2]	Program Activity Distribution[3]			% of Time Devoted to the Program[5]
			Teaching	*Research or Scholarship*	*Other*[4]	
Edward A. Berndt	PT	ME 328 (3) Fall 2011 AE 328 (3) Spring 2012	100	0	0	6
Chunpei Cai	FT	AE 419 (3) Fall 2011 AE 419 (3) Spring 2012	40	60	0	6
Vincent K. Choo	FT	ME 234 (3) Fall 2011 ME 345 (3) Fall 2011	30	60	10	6
Edgar G. Conley	FT	ME 326 (3) Fall 2011 ME 425 (3) Fall 2011 ME 449 (1) Fall 2011 ME 326 (3) Spring 2012 ME 425 (3) Spring 2012 ME 449 (1) Spring 2012	80	15	5	15
Gabe Garcia	FT	ME261 (4) Fall 2011 ME261 (4) Spring 2012	40	30	30	6
Joe Genin	FT	ME 237 (3) Fall 2011 ME 237 (3) Spring 2012	30	50	20	5
Nathanael Greene	PT	ME 328 (3) Fall 2011	100	0	0	3
Harry C. Hardee	FT	ME 341 (3) Fall 2011 ME 341 (3) Spring 2012	30	50	20	6
Young S. Lee	FT	AE 364 (3) Fall 2011 AE 363 (3) Spring 2012 AE 364 (3) Spring 2012	30	60	10	9

Ian Leslie	FT	ME 240 (3) Fall 2011 ME 240 (3) Spring 2012 AE 362 (3) Spring 2012	30	30	40	9
Ou Ma	FT	AE 424 (3) Fall 2011 AE 424 (3) Spring 2012	25	60	15	6
Young Ho Park	FT	ME 426 (3) Fall 2011 ME 427 (3) Fall 2011 ME 426 (3) Spring 2012 ME 427 (3) Spring 2012 AE 428 (3) Spring 2012	40	45	15	21
Bashar Qawasmeh	FT	AE 447 (3) Spring 2012	100	0	0	3
Amit Sanyal	FT	AE 362 (3) Fall 2011 AE 561 (3) Spring 2012	30	50	20	6
Ma'en Sari	FT	ME 236 Fall 2011 ME 236 (3) Spring 2012 ME 341 (3) Spring 2012	30	60	10	9
Banavara N. Shashikanth	FT	ME 338 (3) Fall 2911 ME 338 (3) Spring 2012 AE 339 (3) Spring 2012	30	60	10	9
Fangjun Shu	FT	AE 439 (3) Fall 2011 AE 439 (3) Spring 2012	30	65	5	6
Mark E. Stevens	PT	ME 102 (1) Fall 2011 ME 102 (1) Spring 2012	100	0	0	2
James F. Vennes	PT	ME 159 (2) Fall 2011 ME 159 (2) Spring 2012	100	0	0	3
Mingjun Wei	FT	AE339 (3) Fall 2011 ME 533 (3) Spring 2012	30	65	5	6

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4. Indicate sabbatical leave, etc., under "Other."
5. Out of the total time employed at the institution (see text for explanation).

Table 6-2.c. Faculty Workload Summary – Department of Electrical Engineering, Bachelor of Science in Engineering Physics, New Mexico State University

Faculty Member (name)	PT or FT[1]	Classes Taught (Course No./Credit Hrs.) Term and Year[2]	Program Activity Distribution[3]			% of Time Devoted to the Program[5]
			Teaching	*Research or Scholarship*	*Other*[4]	
Deva Borah	FT	EE 210 (4) Fall 2011	50	30	20	4
Charles Boehmer	PT	EE 461 (3) Fall 2011 EE 460 (3) Spring 2012	100	0	0	6
Laura Boucheron	FT	EE 314 (4) Spring 2012	35	60	5	4
Sukumar Brahma	FT	EE 391 (4) Fall 2011	40	50	15	4
Sang-Yeon Cho	FT	EE 425 (3) Fall 2011 EE 380 (4) Spring 2012	35	60	5	7
Jeanine Cook	FT	EE 419 (3) Fall 2011	25	50	25	3
Charles Creusere	FT	EE 312 (3) Fall 2011 EE 418 (3) Fall 2011 EE 210 (4) Spring 2012 EE 419 (3) Spring 2012	25	50	25	14
Muhammed Dawood	FT	EE 351 (4) Fall 2011 EE 351 (4) Spring 2012 EE 454 (3) Spring 2012	30	60	10	16
Philip DeLeon	FT	EE 395 (3) Fall 2011 EE 419 (3) Fall 2011	25	40	35	6
Paul Furth	FT	EE 418 (3) Fall 2011 EE 486 (3) Fall 2011 EE 201 (3) Spring 2012 EE 419 (3) Spring 2012	55	35	10	13
Hong Huang	FT	EE 260 (4) Fall 2011 EE 161 (4) Spring 2912	35	55	10	8

Joerg Kliewer	FT	EE 312 (3) Spring 2012	30	60	10	3
Kwong Ng	FT	EE 310 (3) Fall 2011 EE 310 (3) Spring 2012	50	40	10	6
Vojin Oklobdzija	FT	EE 418 (3) Spring 2012	0	25	75	3
Robert Paz	FT	EE 314 (4) Fall 2011 EE 260 (4) Spring 2012	30	55	15	8
Krist Petersen	FT	EE 161 (3) Fall 2011 EE 418 (3) Spring 2012	50	0	50	6
Nadipuram Prasad	FT	EE 201 (3) Fall 2011	45	45	10	3
Jaime Ramirez- Angulo	FT	EE 380 (4) Fall 2011 EE 485 (3) Spring 2012	30	60	10	7

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3. Program activity distribution should be in percent of effort in the program and should total 100%. Figures are for 2011 calendar year.
4. Indicate sabbatical leave, etc., under "Other."
5. Out of the total time employed at the institution (see text for explanation).

Table 6-2.c. Faculty Workload Summary – Department of Chemical Engineering, Bachelor of Science in Engineering Physics, New Mexico State University

Faculty Member (name)	PT or FT[1]	Classes Taught (Course No./Credit Hrs.) Term and Year[2]	Program Activity Distribution[3]			% of Time Devoted to the Program[5]
			Teaching	*Research or Scholarship*	*Other*[4]	
Paul Anderson	FT	ChE 470 (3) Fall 2011 ChE 305 (3) Spring 2012 ChE 474 (3) Spring 2012 ChE 376 (3) Spring 2012	60	20	20	18
Shuguang Deng	FT	ChE 306 (3) Fall 2011 ChE 307 (3) Spring 2012	35	55	10	6
Abbas Ghassemi	FT	ChE 412 (3) Fall 2011 ChE 311 (3) Spring 2012	30	60	10	6
Jessica Houston	FT	ChE 111 (3) Fall 2011 ChE 491 (3) Fall 2011	35	55	10	6
Hongmei Luo	FT	ChE 301 (3) Spring 2012	35	55	10	3
Martha Mitchell	FT	ChE 302 and lab (4) Fall 2011	40	10	50	4
David Rockstraw	FT	ChE 201 (4) Fall 2011 ChE 452 and lab (4) Fall 2011 ChE 490 (1) Fall 2011 ChE 352L (1) Spring 2012 ChE 455 and lab (4) Spring 2012	80	10	10	15
M. Ginger Scarbrough	PT	ChE 361 (3) Fall 2011 ChE 361 (3) Spring 2012	100	0	0	6

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3. Program activity distribution should be in percent of effort in the program and should total 100%. Figures are for 2011 calendar year.
4. Indicate sabbatical leave, etc., under "Other."
5. Out of the total time employed at the institution (see text for explanation).