

Minutes for the Meeting of the Engineering Physics Advisory Board
Attendees: Frank Addressio, Jon Haas, James McNeil, John Schaub, Vincent Salazar,
Ronald Tafoya, Gary Kyle, Stephen Pate, Heinz Nakotte, Tom Hearn, Michael
DeAntonio, Elena Fernandez, Paul Furth, Ron Pedersen

Thursday, March 9, 2006 1:30-4:00

See the attached PowerPoint Presentations.

(PHYS) Kyle Presentation.ppt

(ECE) KlipschSchool_engineering_physics.ppt

(ME) BSEP_IAC_060309.ppt

(CRIT) (I cannot find a copy of the Criterion 1 and 4, appendix 1 and 2 presentation.)

Each of the notes below is related to the slide being presented in the following way:
Presentation title-Slide # (e.g. PHYS-1).

PHYS-3

2 new students graduate this spring.

PHYS-4

Advisory board should help with contacts for co-ops.

Advisory board should provide feedback on the abilities needed by graduating students in
EP

PHYS-6

EP degree provides students that have more knowledge of fundamental physics (provides
flexibility) along with specialization in engineering areas.

PHYS-8

The emphasis of the program objectives is to enhance the student's adaptability.

Q. (Vincent) Did all of the recent EP grads go to grad school?

A. Yes, but one did not finish and took a job with the State Department.

ECE-4

Enrollment in engineering has decreased at NMSU; whereas, enrollment in EP and
physics has increased.

"NMSU rankings" shown in this slide are for engineering only.

ECE-7

Many incoming engineering students are not ready for calculus.

The engineering program is lab intensive and thus very hands-on.

ECE-9

Photonics is cross-listed with physics.

Q. (Frank) Where is modeling and simulation in this program?

A. It is not found in ECE. Physics teaches Numerical Analysis. ME has one course as well.

ME-2

There is a university-wide drive to retain 1st and 2nd year students.

ME-3

Please, note that the colors on this chart are where the focus lies – not on the details.

ME-5

A new Aeronautical Engineering program is being started.

Survey Engineering (SE) may become part of Engineering Technology (ET) in the future.

ME-6

The mission of the engineering college is to get to the top 25 state funded institutions in the US News and World Report listing of colleges.

ME-11

Micromechanics is connected with Physics.

Q. (Frank) Where do the research dollars come from?

A. Mainly NASA, Sandia, Los Alamos, and PSL.

PHYS-10

New program in EP is founded on the mature program in Physics (1934-).

PHYS-12

All classes taught in Gardiner Hall.

Computational Physics is taught in the computer lab.

We may lose the glass blowing shop in the near future.

PHYS-13

The planned renovation may double the lab space for physics.

We are trying to get an electron microscope for the materials group.

We are a part of EPSCoR, CINT, and LANSCE.

We may have a Lunar Lander in the museum.

(Since this meeting we have learned that the actual funding may be below the \$32M estimation.)

PHYS-14

14.5 FTE and 16 fulltime faculty.

Research Groups are focused in Optics and Materials, Geophysics, Nuclear and Particle Physics and Physics Education (currently 1 faculty member in this area).

6 faculty member in bridge positions (6 years half sponsored by the labs).

We are a minority serving institution with Carnegie I research status.

PHYS-15

There is no undergraduate Astronomy program at NMSU.

We believe that one reason for lack of growth in EP is the question of accreditation.

We have a goal of 50 EP students.

This year we have our first Freshman EP students. (We are recruiting in High Schools and in the Engineering school.)

Q. (Jim) What about marketing?

A. We will discuss this later.

Q. (Frank) Are we collaboration or competing with engineering?

A. We are a part of the College of Engineering and are thus collaborating.

PHYS-16

EP increases the attractiveness of our physics program which may account for some of the growth in physics undergraduate enrollment.

PHYS-18,19

Research is down about 10%.

We have had a 1/3 faculty turnover (most left for more prestigious positions).

We are middle-of-the-pack with respect to our peers.

Growth doubled in the 90's and is flat now.

PHYS-20

Overhead return has been reduced over the years, but start-up salaries (this part will be mentioned in the CVs) have taken a big part of this. (A question arose about how to present this in the Self-Study document. The board suggested that the table be annotated.)

CRIT

I do not have a copy of this presentation. (The annotations below can be directly related to the slides by looking at the titles given in brackets.)

[CRITERION 1]

Mostly discusses advising, monitoring and the transfer process for students.

[GRADS]

3 previous graduates

2 new graduates (Andre the first double major with EE)

Many have had co-ops with industry.

[Performance Criteria]

Other criteria could be addressed. (E.g. students eligibility for $\Sigma\Pi\Sigma$.)

Q. Why does accreditation matter?

A. It is necessary for employment in engineering industry. (We will look into grandfathering accreditation to previous grads.)

[Student Progress Data]

The faculty evaluate students based on progress toward the degree, not just GPA.
One current student should finish in 4 years, most in 5.

[Basic Level Curriculum]

Gen. Ed. is dictated by the university.
We meet the ABET requirements for Science and Engineering.

[Flowcharts]

The program is really a 5-year track.
Students who are not ready for calculus take longer.

Q. (Vince) Is there a Systems Engineering Course?

A. There is only one elective in EE. We might consider this when we develop an MSEP degree.

[Degree Comparisons]

Physics has more free credits than EP.
EP students are therefore more consistent in their coursework than physics students.
Additional math includes Vector Analysis in EE, Mathematical Methods of Physics in Physics.

Q. (Frank) What are Gen. Ed. and Arts and Sciences courses?

A. These are dictated by the university and ABET as well.

[EPME and EPEE Requirements]

Discussion about where to teach E&M and Mechanics will continue after accreditation.
EP is the most lab intensive major on campus. (This leads to scheduling difficulties for the students.)

Q. (Steve) Are the scheduling conflicts in lower or upper division courses?

A. Both.

Q. (Jim) Do EPME students take Stat. Mech.?

A. No, but they see the basics in Modern Physics and some Thermodynamics in ME.
(They do not see the quantum mech. aspects.)

[Advising]

There are only a few students now, so the process is currently one-on-one.
We are preparing for larger numbers.
All students must visit the advisor before each semester.
Students are tracked and their prerequisites are checked.
Final degree check is by hand. (Later this will be automated.)

Q. (Jim) Do double majors have two advisors?

A. Yes. And we do see problems because of this.

Q. (John S.) Are stealth prerequisites a problem in BANNER?

A. The advisor can override the system.

Q. (Jim) What advising forms are used.

A. These are available as part of the Self-Study Document.

[Co-op/Employment]

Data has been taken only for a short while.

Students are informed of co-ops through a mailing list.

[Learning Environment]

APS Zone meetings are most students introduction to professional meetings.

Q. (Frank) Do the labs need to coordinate the co-ops better?

A. We mostly depend on direct contacts right now. This issue needs to be addressed.