

**Mechanical Engineering Technology
Industrial Advisory Board (IAB) Meeting
November 7, 2014**

Location
New Mexico State University
Engineering Complex 3 (Ed and Harold Forman) Bldg.
Room 134- (Student Study Lounge)

Agenda

8:00-8:30 Refreshments/Coffee/Fruit/Pastries–inside ET Lobby (near Clock Tower)

8:30-10:00 Meeting Start

- Introductions
- Opening remarks and departmental updates
- MET Faculty updates(Hyde, Gamillo, Nogales and Ricketts)
- Approval of Minutes from Last Year

Break

10:15-11:45 ABET Accreditation review

- Student Outcomes
- Program Objectives
- Proposed Changes

Lunch

11:45-1:00 on Campus

1:00-3:00 Open Discussion and Recommendations/Suggestions

- IAC Student Input
- IAC Members Recommendations
- Closing Remarks

New Mexico State Engineering Technology & Surveying

Mechanical Engineering Technology Industrial Advisory Board (IAB) Meeting

Minutes-ROUGH DRAFT 11/7/14 NMSU, Las Cruces NM

Attendees: Carlos Barron-NMSU Student, Sean Chaffin-NMSU Student, Dale Cillessen, SR Product Engineer –SNL, Eduardo Gamillo, Engineer-NMSU, Anthony Hyde, Director/Professor-NMSU, Wesley Lackey, Park Hill Smith & Cooper, Jesse Nichols, Engineering- R& D LANL, Luke Nogales, Professor-NMSU, Michael Owen-NASA, Charlie Park,-NMSU, Mark Petrie, Engineer-TriAxis, Edward Pines, Department Head-NMSU, Brian Platzbecker-SNL, Craig Ricketts, Professor-NMSU, Simon Saiz,-Moss Addams LLP, Matt Serna-SNL, Caleb Sokoll-NMSU student, Justin Wright-NMSU student.

- **Introductions by Anthony Hyde**
- **Update on EFM DEPT**
 - 120 students largest in presence in class
 - 15 Grad for December
- Question -Why influx of younger enrollment
 - Project Led the Way
 - Early College High School
 - Aerospace Engineering program
 - Engineering program
 - Access to Tech
 - Increase in ET 1100 enrollment
- Question -Is it a risk to allow significant student enrollment increase - student staff ratio
- **Luke Nogales-Update**
 - ET 305
 - Design Attachments for Polaris
 - Ideation
 - Low Rex Prototypes
 - Drawings Created
 - Expanding Solid Works
 - ET 308 Inclusion
 - ET 426-FEA
 - ET 328 Velocity & Aceel, Kinematics
 - Grad Student is supporting its inclusion for simulation and analysis
 - New Advising Technique
 - Core Classes only
 - Grant to teach students how to decision mechanism to navigate Mars landscape
 - Aggie Innovation Space
 - 4 student employees
- ABET-Update and benchmark our levels vs. other
- Question Posed-How able are the students to recognize assumptions and levels of certainty in the results
 - Boundary Conditions?
 - Are the Features modeled manufactured and necessary

- Suggestion by Jesse Nicholas
 - Training system engineers to understand & do hand calcu. to understand FEA limits
 - Write down assumptions prior to Running FEA
 - Do hand class first to validate any FEA results
 - Know assumptions are critical should be noted first
- **Jeff Beasley-Update**
 - ET is growing
 - Staff is stable
 - Job placement is great
 - NMSU is using ABET docs
 - New Lounge and computers are very capable
 - Career Fair is recognizing ET-M
 - ET 100
 - Reverse Engr a pizza cutter
 - One group went to Chucky Cheese and tested their design
- Question by Dale Cillessen-W
 - Which way to support Tech Fee by Alumni
 - M-TEC fund- for students
- **Ed Pines**
 - ET student in IC Grad School are doing well. Our grad fair well compared to other national Tech schools
 - ET 302 has been discontinued
 - IE 311 is a good replacement
- **Eduardo Gamillo-Update**
 - Attending Solid Works workshop in Albuquerque
 - Proctoring Solid Works associate certifications with 90% pass rate
 - Possible ET 482 advances Solid Works
- **Craig Ricketts-**
 - Third party over site for HEPA filters testing
 - Collaboration with food science AG department on food processing equip
 - Minor food processing for ET-M majors in the works
 - New section on high strength HDPA filter testing in ASME
 - HDPA-culmination of ET-M senior capstone work
 - HEPA publish on ET home page
- **Anthony Hyde- Update**
 - M-TEC is working on Tumbleweed machine to remove along fence line of roads
 - Collaborate with arrowhead center
 - Various M-TEC projects
- **Anthony Hyde-ABET over view and review—see handouts**
 - Jeff Beasley-We should not associate with weaker schools by changing our department name to “Applied Engr”
 - Mark-If guidance is to attain and assess, have a process and the process is the meeting and documentations meeting minutes
 - Anthony Hyde-Review and revise objectives to include new 2014-2015 objective provisions
 - Craig Ricketts-Gap analysis to determine how current objective fall short
 - Question Posed-Broad or specifically skilled graduate
 - “Applied” in working
 - “Define” in objective
 - Craig Ricketts- Don’t place false expectations by moving toward “Applied Engr. Or limit them by labeling as Techs only
 - Jesse Nichols-Proposed objective are too short and non-specific, change “Following 2-5 years” to “within a few years”

- Matt Serna-Place last sentence of 1st bullet into second bullet-Do some combination of ideas
- Luke Nogals-Likes the simplicity of Purdue's and Oregon's statements
- MET group will coordinate with members to update objectives

- **Student Outcomes**
 - Sandia –Soft skills are not emphasize in current outcomes-
 - More determining customer requirements
 - Prioritizing
 - Time Management
 - Attention to detail
 - Good Ways to assess
 - Ask graduates management
 - Managers
 - Survey
 - Past and Present
 - Email peer review
- Luke Nogales-Covering his proposed student outcomes-see handout
 - 2 outcomes specified
 - Internal-Not linked to ABET
 - External to ABET and more generic and general
- This was liked by many members
- Use Advisory committee to hold responsible
- Create Fantastic List
- Make Luke's added criteria you assessment for A-K
- Use Like's list as assessment tool for A-K
- Eliminate criteria 9 (suggested by Jessie Nicholas)
 - Check criteria 9 for record suggestion , email members

- **Students**
 - Senior Project
 - Pros and Cons about department
- Justin- Cheetos Cutter
- Barron-Integrate more machines in other classes
- Justin- Model other class components in ET 110 and ET 210
 - More Curriculum originations
 - Some labs are not as physical in testing of math analysis and simulation
- Sean-Tumbleweed- instrumentation requires crash course in electrical components
- Brian-Aerator-More training for industry standard drawings
 - Dale- Integrate GD & T during the inspection report section of ET 117
 - Matt S-Integrate during Et 110 and 210
 - Eduardo-I need more GD & T training
 - Error and uncertainty analysis
- Link from theory to application
- Remove Java, maybe w/simulation or Mat Lab
- Caleb- More FEA,Thermo, Fluid and Structural

- **Input from members on what they expect form Graduates**
 - Jesse Nicholas
 - wants to see and is happy to see continued faculty involvement
 - Keep statistics in curriculum
 - Design of experiment is important

- MAT Lab and MAT CAD for validation of simulation.
- Camaro
 - Touch on ASME codes. How to read and interrupt
 - Stay focused on 3D models; 2D obsolete
 - Focus on instrumentation and how to implement software
 - Good Communication-everyone can improve
 - Safety and job safety for manufacturing should be touched on
- Sandia
 - Think, understand and use intuition for problem. Then choose your tools, equations
 - Teamwork abilities as well as appreciate diversity, especially considering complex system
 - Document for liability and use good tech writing to convey knowledge
 - Creativity, thought and institution for problem solving
 - Troubleshooting- where are the problems in you assumption as to why test didn't work
 - Eagerness to learn and curiosity
- Wind Turbine
 - Don focus solely on software and tools think about your problem
- Mark
 - Good, healthy advisory meeting and members
 - Like outcomes list is great
- Dale
 - Faculty is great
 - Appreciation for codes and standards. Look into codes to advance yourself as a student
 - Interject more codes into curriculum
 - Technical Writing-It's a record of responsibility and ethical engagement
 - Safety-Keep this in for front of you mind
 - Qualification-Do you have the qualification to do your job safety and completely
- Serna
 - Buzz Words
 - Soft Skills
 - Systems Engineering-Scope, Project Manage
 - CM-Confic Management- Incorporate this into curriculum
 - PLM Project Life Cycle Mange
 - Change Oder's
 - Additive Manufacturing
 - Drawing based VS. Model Based (need both as both are relevant in industry)
- **Craig Ricketts-Outcomes Assessment Handout**
 - **Post Grad Jobs**
 - Sandia-Correlation of no. of interviews VS. offers
- **Senior Exam**
 - See Graph
- **FE EXAM**
 - Do we keep using FE exam as criteria
 - Can we see other statistics
 - Is there correlation between passing FGE and job offers
 - We are still producing high quality grads
 - Quality an sense of fulfillment is important; not just no. of hires
- **Suggestion**-Use the conferencing to include those who can't attend- explore for next year