Monthly Faculty Meeting
Department of Electrical Engineering

Present:	*Roger Dougal, Chair*	
	Mohammod Ali	*Paul Huray*
	Seongtae Bae	*David Matolak*
	Andrea Benigni	*Enrico Santi*
	MVS Chandrashekhar	*Grigory Simin*
	Yinchao Chen	*Guoan Wang*
	Herbert Ginn	*Bin Zhang*
Absent:	*Charles Brice, Asif Khan, Krishna Mandal, Xiaofeng Wang*	
Recorder:	*Nat Paterson*	

The meeting was called to order by Dr. Roger Dougal at 3:30 p.m. in EE Conference Room 3A75 on December 10, 2015.

1. Announcements –

- Minutes from last month were electronically approved
- 2015 Annual Performance Report due on January 15, 2016
  - Submit file via Blackboard – available now. Remember the new goals statement.
- 2015 Outside Professional Activities Report – new electronic format will be implemented in February. Instructions will be forthcoming.
- 2016-2017 Sabbatical Request – due January 15, 2016
- December Graduation --
  - CEC Fall 2015 Cording Ceremony – December 14, 2015
  - USC's Commencement – December 14, 2015
- eWeek – Saturday February 20, 2016 – Volunteer for exhibits
- Fall 2015 Final grades are due no later than 72 hours after the final exams.
- Fall 2015 Peer Evaluation – Overdue

2. Committee Reports – Semester-end reports from each major committee and its subcommittees

I. Undergraduate Committee –

Curriculum – Dr. Simin

Motion #1: C or better in pre-requisite courses.

Committee moves to change course pre-requisites to require C or better for every course that is a pre-requisite for any other course. See Appendix A for the complete list of proposed changes.

Rationale – To ensure quality of our students since the historically-significant lower/upper division checkpoint was recently eliminated, with the general intent to replace it with a simpler, Banner-enforceable, change to course prerequisites. This is especially important for those students in the first 4 semesters of the program, to ensure the quality of those who are moving up to more advanced ELCT courses.

Discussion– members of the faculty expressed several concerns

- Delay of graduation – will this delay or prevent graduation of students who make less than a C in a 300 level course?

- The CEC recently reduced the number of allowed course repeats. Presumably, this requirement would produce more course repeats. Will there be a problem? Would the number of allowed course repeats need to be increased because of this change?
- Grade Inflation – will the change put pressure on instructors to award Cs instead of Ds?

Amendment to Motion: Remand the recommendation to the undergraduate program committee for review of the concerns, investigation of the pertinent facts, and final recommendation at the next faculty meeting.

Vote: "For" amended motion, unanimously.

Next actions:

- The Undergraduate Committee will review grade distributions to analyze the effect of a hypothetical C or better grade requirement on recent past classes of students to see if a) how many graduations would be delayed? b) would more students be forced out of the program. Nat will help gather the raw data and provide it to the committee for review.?
- The committee will recommend at the next Faculty Meeting (Jan 2016) whether or not all 300-level courses should require a grade of C or better. If so, the committee will present the course change forms necessary to effect the requirement.

Motion #2 –Agreement in principle to revise all course descriptions to include more specific descriptions of course content.

Rationale -- Our existing descriptions are un-necessarily terse and largely un-informative to both internal constituents (our students and faculty in other departments) and external constituents (faculty or advisors at other schools). See Appendix B for the draft proposed revisions.

Discussion – The course descriptions should not become too long to be cumbersome, nor contain too many details. They must remain general enough to allow instructors *some* flexibility to make changes to their contents without having to submit a course change proposal every semester. Flexibility is more important for courses at the higher levels.

Vote: All in favor

Next actions:

- The Undergraduate Committee Chair will work with each instructor of the course to finalize the wording of new course description
- All course change proposals will be submit via the online system to Dr. Lyons' office by January 2016.

Assessment & Accreditation – Dr. Simin

Dr. Simin reminded the faculty to submit their Fall 2015 Assessment data on Blackboard. He also described a process to arrange columns on Blackboard to make it easier to report the data. Please see Appendix C.

Student Organizations – Tau Beta Pi – Dr. Huray

Dr. Huray presented information on how to become a member of Tau Beta Pi. See Appendix D for eligibility details. He encouraged the faculty to consider joining if they were not already members, and to recommend eligible graduate students. (Undergraduate students are automatically nominated based on GPA.)

II. Graduate Committee – Dr. Ginn

- Fall 2015 PhD Qualifying Exam result – Of the six who stood for the exam this fall, 4 passed and 2 failed

- The proposal for a new format for the ME Comprehensive Exam, as approved by the faculty in Spring 2015, is being revised for representation to the faculty in the Spring 16following discussions with the CEC Academic Dean and EE department chair.
- A new course proposal was submitted to convert an ELCT 891 Special Topic in Radio Propagation & Wireless Channel Modeling to a permanent course, ELCT 732: Radio Propagation & Wireless Channel Modeling
- Degree progression report is being developed to keep advisors up to date on their students' progress toward graduation
- New recruiting plan will be finalized and presented to the faculty in Spring 2016

III. Faculty Development Committee – Dr. Matolak

Dr. Matolak reported the following information.

Tasks Completed in 2015

- Followed up on Post-tenure Review of Y. Chen
- Conducted Post-tenure Review of E. Santi

Planned for Spring 2016

- Review/revision of T&P Criteria/Procedures (assuming the UCTP provides feedback early in 2016)
- Review/revision of Dept. PTR Procedures document

IV. Report of Chair

Plan to increase EE Scholarships –

Dr. Dougal presented ideas on how to utilize part of department's Ed Foundation fund for scholarships in order to offer more competitive financial packages to attract higher quality undergraduate students.

- Transfer money to the existing "EE Scholarship" so the money can be spent immediately
- Transfer money to an existing endowed scholarship, i.e. Noland or Fellers scholarships
- Consider creating some new endowed scholarships for well-known personalities, i.e. previous professors.

The faculty agreed in principle to these plans and suggested that the scholarships to be given in a combination of big and small amount of scholarships in order to attract students from different categories, and to fund both immediate scholarship needs as well as reach endowment threshold for one or more as-yet-unendowed scholarships funds.

Five-semester Teaching Schedule –

The 5-semester teaching assignment spreadsheet was presented to the faculty (see Appendix E) and will be emailed to the faculty for their input. There is a plan to add a few non-tenure-track teaching staff to help relieve some of the faculty's time.

Faculty members are invited to propose to

- teach a different course than what they're assigned,
- create a new course to teach
- add more courses to increase their FTE if it is low
- buy out for the semester
- report their intention to take a sabbatical leave

Summary of fall 2015 IAB Meeting

- Added 1 additional member – Bobby Scott, REI Automation

- IAB Review of Draft 2020 Strategic Plan –
  - Agree with the overall principles
  - Agree that combining EE & Com E could be beneficial
  - Combined faculty would be well-poised to go after large-scale projects in areas like cybersecurity, embedded systems, sensor development & integration, datalinks, advanced communication systems

Dr. Dougal encouraged the faculty to attend a portion of the IAB meeting to increase the interaction between the faculty and the members. For spring 2016 meeting, the faculty will be informed of a specific time to attend.

Web presence for faculty research

In order to help the faculty increase their web presence and provide research information to public, the department is developing a standard template that contains standard data structures for individuals, labs, and research groups. The department will hire a student to help the faculty populate the data structures with content, starting with any information that is currently available. Later the faculty can add new contents to their own pages.

Expectations for Spring 2016

Below is the list of tasks the department will put more time & effort to accomplish in spring 2016.

- Follow up on implementing the latest Strategic Plans
- Complete implementation of the Microelectronics shared facilities
- Start new "giving campaign" to fund scholarships – working closely with the Development office to contact the alumni with high giving potential
- Develop more collaborative research proposals
- Improve the quantity and quality of assessment data collection in Blackboard – An example of data collection was presented. See appendix F.
- Write initial draft of ABET report – hoping for a college-wide collaborative effort to coordinate this

Good of the Order

APOGEE section – Dr. Ali suggested that we should consider to cancel APOGEE sections that have low off-campus enrollment. Or to add video facilities to existing classrooms so that APOGEE classes could be taught conventionally, especially when there are few students.

Rationale –

- Rarely APOGEE students actually attend the course while it's streaming live so it might be better to have lessons recorded and the files available asynchronously
- APOGEE studio setup is less convenient for on campus students and small

Suggestions –

- Need a VDO capability in all classrooms so more courses can be offered
- Install a motion tracking camera so the instructor's movement can be captured
- If not the motion tracking camera, the other option is to obtain a good VDO camera and a person to help handle the camera and post the files on the website

Next actions:

- Email the 5 semester teaching assignment to the faculty for their inputs
- Hire an undergraduate student to help with the website
- Hire a student to help with recording lessons for ELCT 554 ads a pilot course

Meeting adjourned at 5:30 pm

APPENDIX A

Courses	Changes Made
101	Course Description
102	**Course Description**
201	Course Description, grade requirement for prerequisite (C or better), prerequisite change (adding ENGL 102)
221	**Course Description, grade requirement for prerequisite (C or better)**
222	**Course Description**
301	Course Description, grade requirement for prerequisite (C or better)
321	Course Description, grade requirement for prerequisite (C or better)
331	Course Description, grade requirement for prerequisite (C or better)
350	Course Description, grade requirement for prerequisite (C or better)
361	Course Description, grade requirement for prerequisite (C or better)
363	Course Description, grade requirement for prerequisite (C or better), prerequisite change (adding CHEM 111)
371	**Course Description, grade requirement for prerequisite (C or better)**
302	Course Description, grade requirement for prerequisite (C or better), prerequisite change (adding 350?)
403	Course Description, grade requirement for prerequisite (C or better), Prequisite change (adding 321, 350, 361, 363)
404	Course Description

involved Computer Engineering. We need their consent, at least in a form of email.

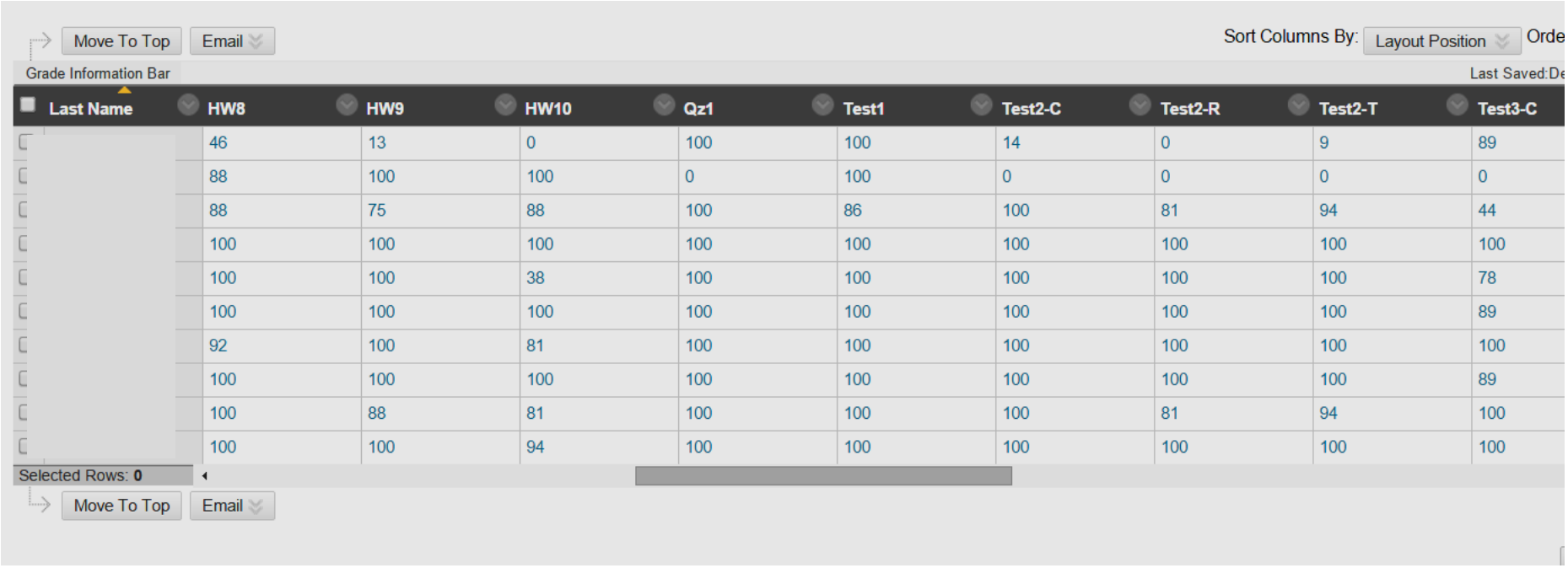
APPENDIX B

Course	Current Description	Proposed Course Description
101	Introduction to the field of electrical engineering and its impact on everyday-use systems and devices, computers, and automotive electronics.	Introduction to EE using a practice-oriented approach in various topics, transistors, basic Arduino programming, energy harvesting, sensing, wireless communication, and circuit.
102	Fundamentals of electrical and electronic components. Basic network laws. Mathematical and computer tools for network analysis.	Fundamentals of electrical and electronic components (i.e. Ohm's law, Kirchhoff's Voltage and Current laws, resistors, capacitors, diodes and transistors), basic network laws, mathematical and computer tools for network analysis (i.e. MATHLAB).
201	Laboratory procedures, instrumentation and measurements, report writing, computer use, passive circuit analysis and design.	Laboratory procedures, instrumentation and measurements, report writing, computer use, design of active & passive components, electromachancial actuators and electromachanical system with feedback.
221	Linear circuit analysis and design.	Introduction to the topics of Linear circuit analysis and design (i.e. Nodal and Mesh Analysis, Thevenin and Norton transformations, Sinusoidal (AC) signals, SPICE simulations, Three-phase circuits.)
222	Introduction to signal processing and linear systems.	A continuation of the study of linear system and an introduction of signal processing including first-order circuits, frequency responses, Laplace transform, Fourier series & transform, and Operational amplifiers.
301	Design and implementation of analog and digital electronic circuits.	Hands on experience in design and implementation of analog and digital electronic circuits; use of instruments to acquire data; written lab reports
321	Signal processing of discrete-time systems.	An introduction to characteristics, design, applications of discrete time system, Fast Fourier Transform, filters (Finite & Infinite Impulse Responses), Spectrum representation, Sampling & Aliasing: Shannon's Theorem.
331	Analysis and design of control systems.	An analysis & design of control systems including Laplace transform, transfer function, Physical systems modeling, Root Locus analysis, Time and Frequency Domain.
350	Use of appropriate computer and applications software and languages for modeling electrical and electronic systems.	A use of appropriate computer and applications software and languages for modeling electrical and electronic systems. Topic covered include Circuit Simulation, Linear DC Nodal Analysis, Linear Transient Analysis, Dynamic Circuit, C++ programming, MATLAB, VTB, etc.

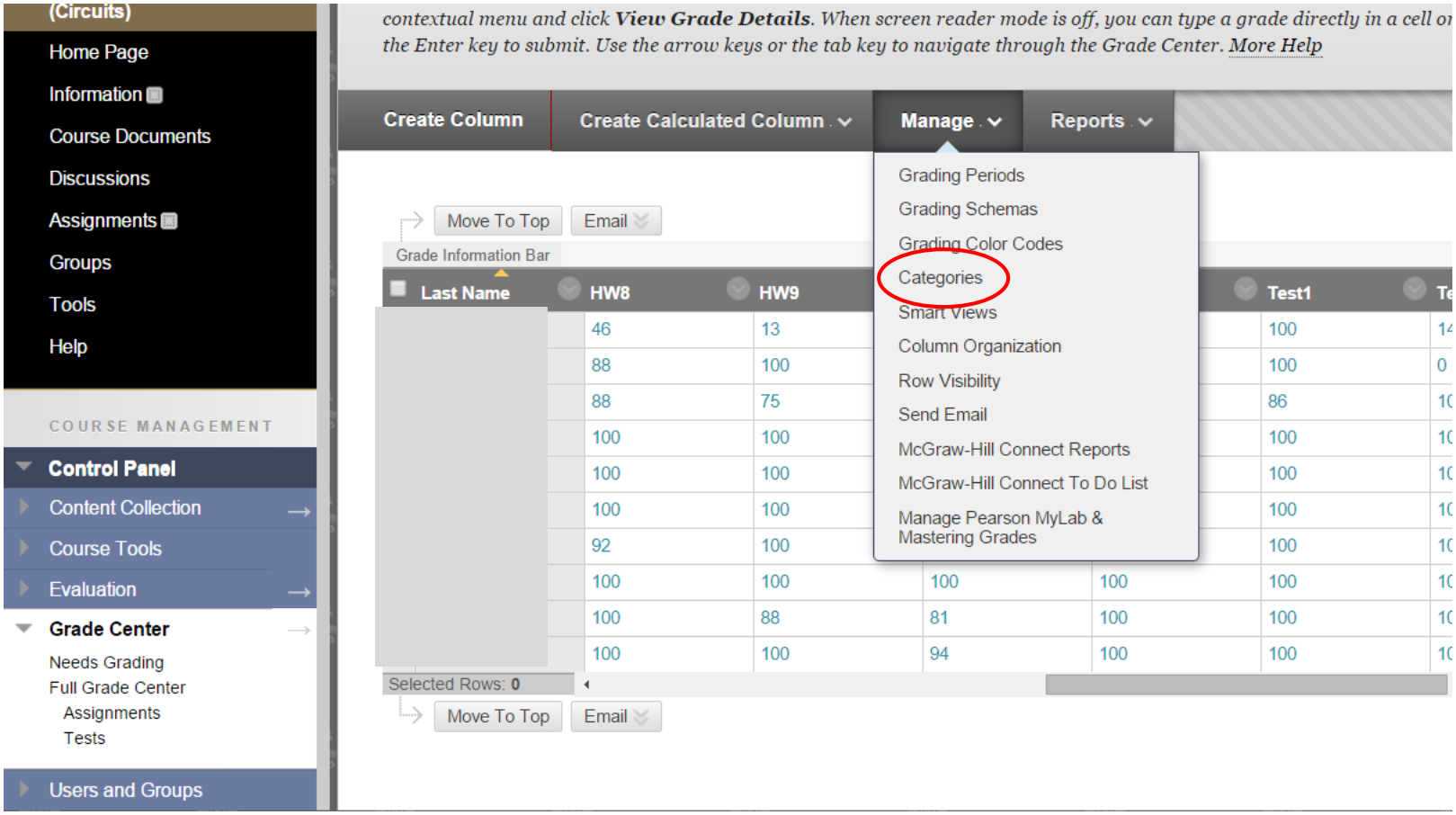
Course	Current Description	Proposed Course Description
361	Basic concepts of electric and magnetic fields, including electrostatics, magnetostatics, and quasi-statics with computer applications.	A basic concept of electric and magnetic fields including electrostatics, magnetostatics, and quasi-statics with computer applications. Topics covered include Vector Analysis, Time varying fields and Maxwell's Equation, Energy and Potential, Poisson's and Laplace's Equations, Dielectrics and Capacitance, etc.
363	Basic semiconductor material and device principles. Principles and applications of microelectronics.	A basic understanding of the semiconductor materials - characteristics, working principles and applications; provides the insight useful for understanding semiconductor devices and technologies; semiconductor physics, p-n junctions diodes, metal-semiconductor contacts, heterojunctions, transistors.
371	Introduction to electronics design.	An introduction to analog circuit design and analysis. Topics covered include generic amplifier model, operational amplifier, Diodes and diode circuit characteristics, Bipolar junction transistors, Field-effect transistors, and Frequency response of amplifiers.
302	Real-time design and development on an unmanned ground vehicle platform.	Real-time design and development on an unmanned ground vehicle platform using Open Loop Microcontroller-based DC motor control, Speed Measurement, Model Identification, Closed Loop Simulation & Control, Stering & Logic Control.
403	Capstone design project: planning and preliminary design.	The first semester of 2-semester long Senior Design project with an emphasis on the application of theory and skills learned from all 300 level courses to planning and a preliminary design of an electrical and electronic system. Group projects vary each semester.
404	Capstone design project: design and implementation	The continuation of the first Capstone Design I. In the second semester with an emphasis on the building of the prototype and implementation.

APPENDIX C

Column organization (ELCT 221)



Create categories corresponding to the measured outcomes

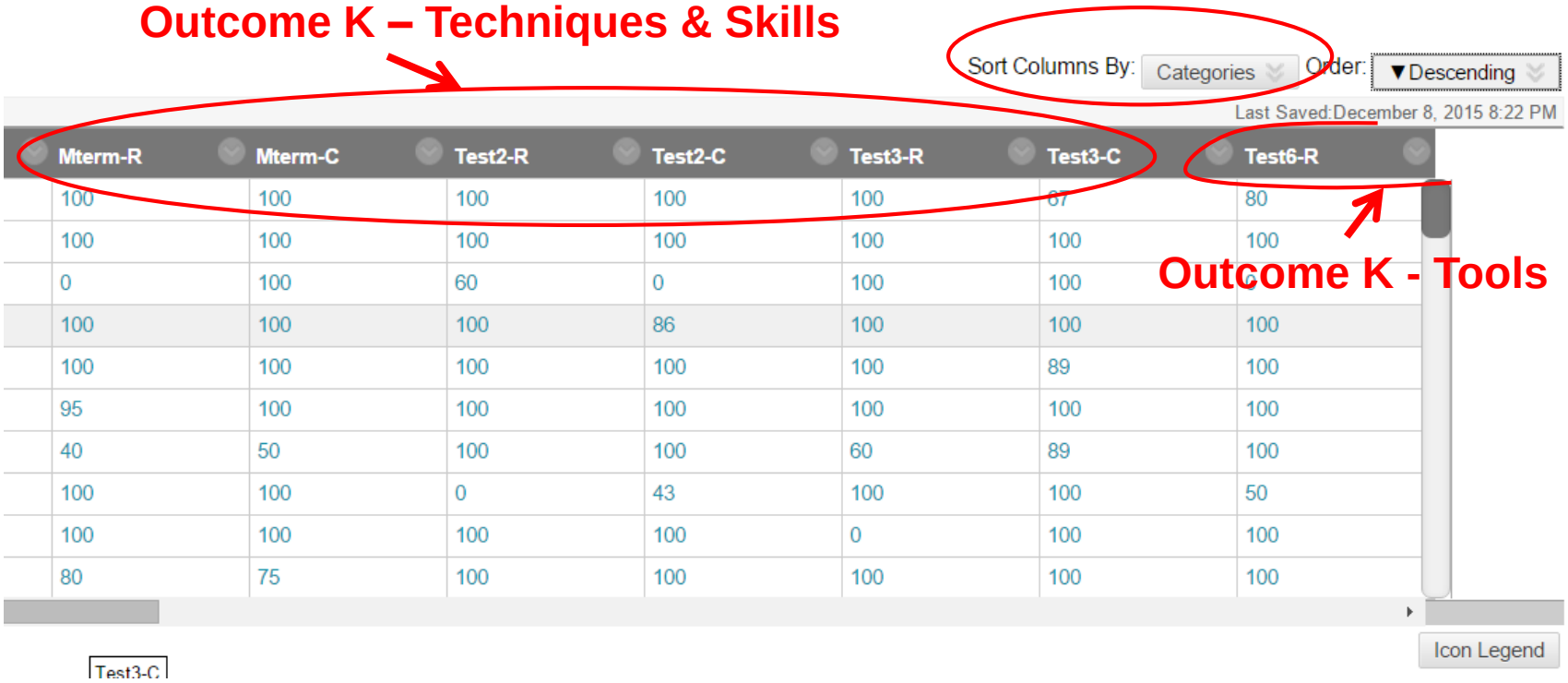


Create categories corresponding to the measured outcomes

Title	Description	Columns
Assignment		
Blog		
Discussion		
Journal		
Outcome K - SPICE	Outcome K - part 2 - Tools - SPICE	Test6-C,Test6-R
Outcome K-TS & ML	Outcome K – part 1 - Techniques and Skills (K-TS) Also used to assess Outcome K - part 2 - Tools - MATLAB	Test2-C,Test2-R,Test3-C,Test3-R,Mterm-C,Mterm-R
Self and Peer		
Survey		
Test		

Displaying **1** to **9** of **9** items | Show All | Edit Paging...

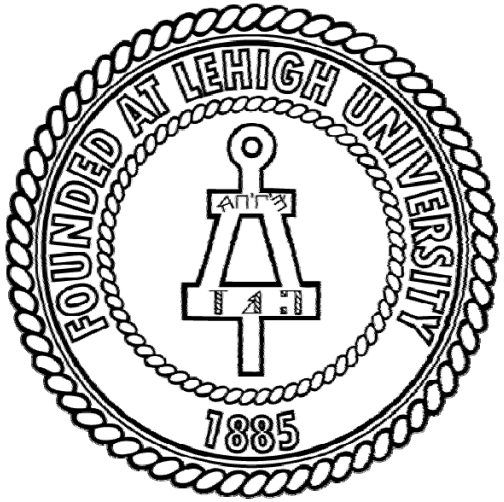
Sort columns by categories:



Mterm-R	Mterm-C	Test2-R	Test2-C	Test3-R	Test3-C	Test6-R
100	100	100	100	100	67	80
100	100	100	100	100	100	100
0	100	60	0	100	100	100
100	100	100	86	100	100	100
100	100	100	100	100	89	100
95	100	100	100	100	100	100
40	50	100	100	60	89	100
100	100	0	43	100	100	50
100	100	100	100	0	100	100
80	75	100	100	100	100	100

APPENDIX D

How to become a member of Tau Beta Pi



A candidate must meet both the scholastic and exemplary character requirements, be elected by members of a collegiate chapter, and attend an initiation ceremony to become a member.

The scholastic requirements are:

- Undergraduate students must be in the top 1/8th of their junior class or top 1/5th of their senior class.
- Graduate students must be in the top 1/5th of their class or, if class rank can not be determined, obtain a letter of recommendation from their primary academic advisor. In either case, graduate students must have completed at least 50% of coursework including research.

The exemplary character requirement is determined by each chapter. This usually requires an interview or some activity such as participating in a project. Exemplary character is determined prior to election.

APPENDIX E

Instructors	Spring 16	Fall 16	Spring 17	Fall 17	Spring 18
Ali	564	864 891	862		
Bae	363		363		363
Benigni	350,554	551	554		
Brice	201,222,553				
Chandra	101,403	101,404			
Chen	762	220	220		
Dougal	404	403	404	403	404
Ginn	531	530,891	531	530,891	531
Huray	361	361,521	361		
Khan	563	566	563	566	563
Mandal	510	363	510	363	510
Matolak	321	321,332	321		
Metts		201	201	201	201
Moinul Islam	371				
Santi	301,837	301,572	301,772	301,572	301,891
Simin	221	221	221,864	221	221
Wang, G	861	562,371	564		
Wang, X	331	302	331	302	331
Wilson	102,220				
Zhang	302	331	302	331	302
		102 -- TBA 222 - TBA 350 -- TBA	102 -- TBA 222 -- TBA 350 - TBA 371 - TBA 403 -- TBA	101 -- TBA 102 -- TBA 222 -- TBA 321 -- TBA 350 -- TBA 361 -- TBA 371 -- TBA 404 -- TBA	101 -- TBA 102 -- TBA 222 -- TBA 321 -- TBA 350 -- TBA 361 -- TBA 371 -- TBA 404 -- TBA

APPENDIX F

Course Outcome Assessment
ELCT 102 – Fall 2015

ELCT 102 -- Course Outcomes	Measurement Methods	ABET Outcome
1. apply mathematical skills, up to single-variable calculus, to problems in electrical engineering	Capa #7	Outcome A
2. solve Coulomb's law for force between charged particles, forces on particles in fields, and energy of a particle at some electric potential.	Capa #1	Outcome A
3. calculate the resistance, capacitance, and inductance of simple electronic components based on physical parameters and dimensions.	Capa #2 Capa #3	Outcome A
4. find currents and voltages in series and parallel resistive networks for constant excitation	Capa #4	Outcome A
5. apply Kirchhoff's voltage and current laws to find voltages and currents in resistive circuits	Capa #3	Outcome A
6. calculate power and energy absorbed or supplied by a component from its terminal currents and voltages, for constant and linearly varying V or I	Midterm	Outcome A
7. evaluate the equivalence of series and parallel connections of resistors, capacitors, and inductors	Test #2	Outcome A
8. use MATLAB to apply matrix methods to solve two simultaneous equations, and to create basic two dimensional plots	Matlab #1 HW	Outcome K

Overall Performance of Students