Engineering Advisory Committee Meeting  
March 1, 2013  
10:00 a.m. – 12:00 p.m.  
Bossier Parish Community College – A230

Members Present (and their division-not rank)
Nathan Wood (BPCC student)  Justin Price (BPCC)  
Jeff Mitchell (BPCC)  Kurt Nixon (Nixon Engineering)  
Ed Chopin (BPCC)  Terrance Chambers (ULL)  
David Rambaran (Rambaran GeoSciences)  June Schneider (BPCC)  
Patrick McDonald (SES)  Deanna Hardy (BPCC)  
Antoinette Turner (Caddo Parish Schools)  Jim Watts (Brammer Engineering)  
Jacquelyn French (BPCC)  Russ Gedeon (AEP, Region 5 Engineering)  
Miles Hitchcock (BPCC)  Tanita Baker (EJES)  
Hisham Hegab (LA Tech)  Laura Goadrich (BPCC)  
Sallie Namie (Bossier Parish Schools)  Frank Viviano (BPCC)  
Malcomb Smoak (AEP)  Eric Warner (U.S. Air Force)  
Clif Frilot (BPCC)  Jim Henderson (BPCC)  
Jeffery Anderson (City of Bossier)  Dale Higdon (BPCC student)  
Emily Jones (BPCC student)  Justin Price (BPCC student)  
Michelle Fayard (BPCC)  Stanley Harris (City of Shreveport)  
Charles McDonald (BPCC student)  Jacob Mitchell (BPCC student)  
Tracy McGill (BPCC)  Justin Higdon (BPCC student)

Members absent
Ali Mustapha (City of Shreveport)  Russ Hoppe (Trane)  
Jonathan Wheelis (Chesapeake)  Tom Daniel (Bossier Schools)  
Lou Papai (Sci-Port)  Warren Waggenspack (LSU)  
Mark Snow (ADJMI)  Alan Pratt (BPCC)  
Robert Fisher (KSA Alliance)  Charles Reed (BPCC)  
Robert Newberry (Honeywell)  
Jacobi Muecke (BPCC)  Louis West (BPCC)  
Linda Sonnier (BPCC)  Rosalind Lewis (BPCC)  
Sandra Partain (BPCC)  Stan Wilkins (BPCC)

Meeting minutes

Call to Order: Meeting began at 10:00 a.m. with Chancellor Jim Henderson greeting the committee.

New Center for Integrated Engineering Technologies (CIET) Building: Chancellor Henderson provided the committee with an update about the new CIET Building. Construction
should begin at the end of April. This has been a collaborative effort and we seek the committee’s involvement.

**Roll Call:** Roundtable introductions began.

**Approval of old minutes:** The old minutes were reviewed and approved by the board.

**Open Issues:** No open business at this time.

**New Business:**

Status of the program was discussed. Engineering enrollment increased in the last two years and the current enrollment reaches a total of 107 students. June Schneider gave a brief history of the engineering program. Jacquelyn French, the first graduate from the program provided her input about her challenges and successes in the Engineering program. She believes that the smaller classroom environment here at BPCC enables her success. Nathan Wood is expected to graduate in the spring 2013. June explained that the current program allows students to enter a four year colleges as juniors in their desired Engineering disciplines. The Engineering AS curriculum has 60 credit hours (20 courses) and June elaborated the type of courses in this degree (ENGR AS).

**Learning outcomes and changes in the curriculum** was discussed. June provided a PowerPoint presentation (see attached) and referred to the slide Calculus I, II, III, and IV. She reviewed the fall 2012 Calculus Retention and Success Rates. Miles Hitchcock reviewed the CAL option for engineering students. The proposed changes include a Calculus Block Schedule. Option #1, without Differential Equations — Each Cal 1-4 courses would be eight weeks long offered in Sessions B and C. Option #2, with Differential Equations offered, Calculus classes will be offered in Session A, B, and C. This option will allow CAL I to be offered for the full semester. Please refer the PowerPoint presentation for more details. Miles asked the board if there were any questions and comments. Hisham Hegab stated that LA Tech College of Engineering and Math Department had reviewed the proposed changes prior to the meeting, and are supportive of (1) adding “Differential Equation” course and (2) the 8-weeks intensive Cal courses at BPCC. Terrance Chambers at ULL stated that he is in favor of the new Calculus schedules and the addition of Differential Equations. However, he would have to get with ULL’s Math department for the final approval.

Miles explained that BPCC had been using a testing center for Calculus courses. With four unit tests and a final exam taken in the TEM testing center without taking class contact hours, this 8-week session Cal course is equivalent to LA Tech’s 10-week Quarter system offering. Hence, if we added the minutes back into our course time—we would mirror LA Tech. June said that we looked forward to hearing back from Terrance Chambers regarding the acceptance from ULL Math Department. Then June Schneider and Cliff Frilot reported to the board five engineering course learning outcomes. Briefly, to improve retention in ENGR 100—we plan to add trigonometry and add calculus as a prerequisite. For ENGR 222- Thermodynamics, we plan to accelerate the pace of the first two chapters to allow sufficient time covering power cycles. In ENGR 220-Statics class, we plan to add some web-based software to complement the theory learned.
ENGR 221-Circuit course will use LA Tech book and have CAL I and CAL II as prerequisites for this course. Clif Frilot plans to add more real-world applications in this course. The details for each course learning outcome are attached. The committee reviewed the Fall 2012 Engineering Class (ENGR 100, ENGR 222, ENGR 221 and ENGR 220) Retention and Success rates.

A new ENGR elective - Engineering Internship was discussed next by Tanita Baker. She stated that students want more hands on experience and job shadowing. Students will be able to read drawings after working with engineers.

David Rambaran was pleased with the partnership with BPCC student, Patrick McDonald and commented on his good excel and engineering skills. Deanna Hardy, a Math professor at BPCC will be teaching CAL I in the Fall. Deanna spoke highly of Justin Higdon, a BPCC engineering student and commented on his excellent tutoring in a pilot program called TOTAL, which consists of six hours of teaching and three tutor hours.

**AutoCAD Discussion**
The discussion began with how to add AutoCAD to our curriculum. Terrance Chambers explained that we could add AutoCAD and it should transfer to the four year school. Hisham Hegab discussed about either Solidworks or AutoCAD will be a good choice as an elective. Russ Gedeon suggested that we give the student the option of either Solidworks or AutoCAD. Hisham explained that AutoCAD could be transferred to LA Tech. However, he encouraged students to transfer as early as they can when they accomplished 60-credit hours of AS in Engineering. If taking AutoCAD will prolong students’ transfer, it was recommended students to prioritize their time to finish the required coursework in the program, rather than adding this extra and non-required AutoCAD Course. Kirk Nixon explained that AutoCAD is important. This discussion led topics of adding Geographical Information System (GIS) as an elective to the Engineering curriculum. Terrance explained that different course alignment among various engineering disciplines. Particularly, he stated that all engineering courses at BPCC can be transferred to Civil and Mechanical Engineering. However, Electrical and petroleum engineering might lose three hours from their BPCC degree. The tentative ULL-BPCC course alignment for each discipline is attached.

**Liaison with local professional engineering chapters**
Eric Warner provided information about SAME. They have sponsored Jacobi Muecke, BPCC student to attended SAME student leader workshop in Arizona. January 24-26, 2013. Dave Rambaran provided information about upcoming LA ASCE conference at Shreveport in April. Kurt Nixon explained that a student chapter is not possible at this time. However, ASCE is willing help enhance our programs. LES is another partnership for our Engineering program. Jim Watts provided information about SPE and explained that SPE has five ($2,000) scholarships offered to Chemical and Petroleum engineering students, and summer internship opportunities. Members discussed industrial expectation of outcomes.

**Partnering with high schools**
Sally Namie provided information about high school students. Sally provided this information via PowerPoint presentation. These students learned about robotics Antoinette Turner spoke about Cyber Camps and Engineering. Their STEM programs are focused with a common core.
Teachers are taking professional development classes that help enhance deep thinking. Miles asked about the possibility dual enrollment (e.g. online or classroom environment). Currently, no dual enrollment has set up. Further discussion will be carried out in the future.

**ATMAE Accreditation: Spring learning outcome**
Laura Goadrich provided information about ATMAE accreditation. Since we have our first graduate, ENGR program will apply for the ATMAE accreditation in Fall 2013. Laura welcomed the board back to provide information at visiting team meetings during ATMAE site visits.

**Motion to review and approve curriculum and length of program**—Stan Harris asked if we can get an approval for the curriculum and the length of program. The program learning outcomes and length were approved by Malcomb and seconded by Eric Warner. The board approved them with no opposition.

**Student Engineering Society (SES)**
Patrick McDonald provided information about SES. He reported to the board the past minutes and announced the selected SES officers’ names. SES plans to continue to work with professional engineering chapters and promote BPCC engineering students.

**Adjournment**
Laura Goadrich expressed her appreciation of all attendees. She asked for a motion of adjournment. Motion was made by Terrance Chambers, seconded by Sally Namie and all approved with no opposition. Meeting was adjourned at 11:30 a.m.

Minutes submitted by: *Michelle Fayard*
Minutes approved by: *June Schneider*
BPCC Engineering Advisory Committee Agenda

March 1st (Friday) 10-11:30 am at A230

Welcome – Chancellor Jim Henderson and Dean Laura Goadrich

New CIET Building – Chancellor Jim Henderson and Dean Laura Goadrich

Roundtable Introductions – All
  Members
  Faculty
  Guests
  Students

Status of the Program – June Schneider
  Enrollment and completion Data
  First AS Engineering graduate – Jacquelyn French!
  60 credit hour ENGR AS degree curriculum
  Students’ ENGR disciplines choices

Learning outcome and changes in Curriculum
  Calculus I, II, III and IV – Miles Hitchcock
  Physics for Science and Engineers – Charles Reed
  ENGR courses – June Schneider & Clif Frilot
  New ENGR internship course addition
  Internship sponsors- Tanita Gilbert-Baker and Dave Rambaran
  Involve Engineering students for math Tutoring – Deanna Hardy
  Propose to add GIS as an Engineering Elective Course – Ali Mustapha

LA Tech Transfer – Hisham Hegab
  (1) Each ENGR discipline course alignment
  (2) Engineering technology transfer

ULL Transfer – Terrence Chambers
  Each Engr discipline course alignment

LSU Transfer - Warren N. Waggenspack /June
  Compare Engr course syllabi for potential articulation agreement

Liaison with local professional engineering chapters
  Society of American Military Engineers (SAME) – Eric Warner
  SAME Red River BPCC student post
  BPCC student sponsored to attend SAME Student Leader Workshop @ Arizona - Jacobi Muecke

ASCE – Dave Rambaran and Kurt Nixon

LES – Bob Fisher

SPE – Jim Watts

Industrial expectation of outcomes – Industry sectors

Partnering with high schools – Sally Namie

ATMAE Accreditation: Spring learning outcome – Dean Laura Goadrich

Action Item: Approve program learning outcome and length of the program – Stanley Harris

Student Engineering Society (SES) - We need your sponsorship! – Patrick McDonald, Louis West Activities

Students professional development

Thanks and Closing – Vice Chancellor Stan Wilkins and Dean Laura Goadrich

Next Scheduled Meeting will be in September, 2013

* Potential Items: (1) scholarship for BPCC engineering students from ASCE and LES.
  (2) Differential Equation course addition
Associate of Science in Engineering

The Associate of Science in Engineering provides the graduate with knowledge of cutting edge technology, enabling graduates to design and build solutions for the challenges of tomorrow.

Learning Outcomes:

A. Design the fundamental elements of engineering system components and processes, with a clear understanding of associated safety, quality, schedule and cost considerations.

B. Articulate and justify technical solutions to diverse audiences through oral, written, and graphical communication.

C. Design practical and creative engineering solutions that reflect social and environmental sensitivities.

D. Understand the constantly evolving nature of engineering design and practice, and recognize the need to stay abreast of the latest developments in the field.
## Required courses for Associate of Science in Engineering:

### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 100: Engineering Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>MATH 250: Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 101: General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>History Elective</td>
<td>3</td>
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<tr>
<td>ENGL 101: Composition and Rhetoric I</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ENGR 201: Engineering Materials</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 220: Statics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 251: Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 211: Physics for Engineering and Science I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102: Composition and Rhetoric II</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
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</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ENGR 221: Circuits</td>
<td>3</td>
</tr>
<tr>
<td>MATH 252: Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 212: Physics for Engineering and Science II</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>English Elective: 200-level</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ENGR 222: Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 253: Calculus IV</td>
<td>3</td>
</tr>
<tr>
<td>BLGY 105: Elements of Biology</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 299**: Or *Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Fine Arts Appreciation Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
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</tbody>
</table>
Total credit hours

60

*Note since ENGR 299 cannot be counted as a SSE elective, the second SSE is required for the LA Tech transfer agreement
http://www.bpcc.edu/catalog/current/generaldegreereq.html#electivesclassification

**If you take ENGR 299, you only need to take one Social/Behavioral Science to complete AS degree in Engineering from BPCC.

New courses included in this program constitute 30 hours of the 60 proposed hours.

Students must demonstrate competency in computer literacy by successfully completing a challenge examination in ENGR 100 or through successful completion of an approved college level course satisfying BPCC’s computer literacy requirement (CIS 105).

Students must also demonstrate competency in oral communication by successfully completing a challenge examination in ENGR 100 or through successful completion of an approved college level course satisfying BPCC’s oral communication requirement (SPCH 110).

Back to Technology, Engineering, and Mathematics Division
Welcome to the Spring 2013 Engineering Advisory Committee Meeting

March 1, 2013
### Introduction of Advisory Committee Members

#### Recruitment
- (Shreveport/Bossier parish school systems)
- Lou Papai (Sciport)
- Sally Tanner Namie (Bossier schools)
- Antionette Turner (Caddo schools)
- Tom Daniel (Bossier schools)

#### Placement (Industries)
- Stanley J. Harris (City Shreveport) - Chair
- Kurt Nixon (Nixon Engineering)
- Jacquelyn French (BPCC graduate)
- Russ Gedeon (AEP)
- Eric Warner (Air Force)
- Malcolm Smoak (AEP)
- Jonathan Wheelis (Chesapeake)
- Ali Mustapha (City Shreveport)
- Robert Fisher (KSA Alliance)
- Robert Newberry (Honeywell)
- Mark Snow (AFJMC)
- Russ Hoppe (Trane)
- Jim Watts (Brammer Engineering)

#### Placement (4-Year Partners)
- Hisham Hegab (LA Tech)
- Warren N. Waggenspack, Jr. (LSU)
- Terrence Chambers (ULL)

#### Previous Advisory Board Meetings:
- November 3, 2011
- April 17, 2012
- September 20, 2012
BPCC Engineering Student Enrollment

<table>
<thead>
<tr>
<th></th>
<th>Fall 2011</th>
<th>Spring 2011</th>
<th>Fall 2012</th>
<th>Spring 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numbers</td>
<td>62</td>
<td>75</td>
<td>90</td>
<td>107</td>
</tr>
</tbody>
</table>
Jaquelyn French, the first AS. in Engineering received her degree on December 14, 2012!
Faculty

- Calculus Faculty:
  Full-time: Miles Hitchcock, Ph.D.

- Physics Faculty:
  Full-time: Professor Charles Reed

- Engineering Courses Faculties:
  - Full-time: June Schneider, Ph.D.
  - Part-time: Clif Frilot, Ph.D.

- Engineering Program Director:
  - June Schneider, Ph.D.
## BPCC Engineering Curriculum

### Curriculum set up (total of 60 points)

<table>
<thead>
<tr>
<th>Four Calculus: Cal I, II, III &amp; IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two calculus based physics class:</td>
</tr>
<tr>
<td>Physics 211</td>
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<td>Physics 212</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Five Engineering classes:</th>
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<tbody>
<tr>
<td>Introduction to engineering</td>
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<tr>
<td>Statics</td>
</tr>
<tr>
<td>Strength of Materials</td>
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<tr>
<td>Circuits</td>
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<tr>
<td>Thermodynamics</td>
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| One Chemistry                     |
| One Biology                       |
| Two English composition courses   |

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<tr>
<th>Five electives:</th>
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<tbody>
<tr>
<td>1 history</td>
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<tr>
<td>1 fine art</td>
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<tr>
<td>2 social science</td>
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<tr>
<td>1 English elective</td>
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</tbody>
</table>

All courses required by the Engineering program have been offered at least one time by Fall 2012.
Engineering Disciplines Choices

Total survey number: 47 students who are currently taking ENGR courses
Course Learning Outcome & Strategies to Improve Retention and Success Rates
Calculus I, II, III and IV

- **Cal I** topics include functions; limits and continuity; differentiation; applications of derivatives.
- **Cal II** topics include integration; applications of definite integrals; integrals and transcendental functions; and techniques of integration.
- **Cal III** topics include first-order differential equations; infinite sequences and series; parametric equations and polar coordinates; vectors and the geometry of space; and vector-valued functions and motion in space.
- **Cal IV** topics include partial derivatives; multiple integrals; integration in vector fields; and second-order differential equations.
## Fall 2012 Calculus Retention and Success Rates

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Description</th>
<th>Students Enrolled on Census Date</th>
<th>Retention (Enrolled end of semester)</th>
<th>Successful (C or Higher)</th>
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</thead>
<tbody>
<tr>
<td>MATH 250</td>
<td>Calculus I</td>
<td>20</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>MATH 251</td>
<td>Calculus II</td>
<td>9</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>MATH 252</td>
<td>Calculus III</td>
<td>8</td>
<td>4</td>
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## Calculus Block Schedule

### Option #1, without Differential Equations

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<td>8-9:40 am</td>
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<tr>
<td>(First 8 weeks)</td>
<td><strong>Session B</strong></td>
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<tr>
<td></td>
<td>MATH 250- Cal I</td>
<td>MATH 252-Cal III</td>
<td>MATH 250- Cal I</td>
<td>MATH 252-Cal III</td>
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<tr>
<td>(Second 8 weeks)</td>
<td><strong>Session C</strong></td>
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<td></td>
<td>MATH 251-Cal II</td>
<td>MATH 253-Cal IV</td>
<td>MATH 251-Cal II</td>
<td>MATH 253- Cal IV</td>
<td>MATH 251- Cal II</td>
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### Option #2, with Differential Equations

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<td>8-10:30 am</td>
<td>8-9:40 am</td>
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<tr>
<td>(Full Semester)</td>
<td><strong>Session A</strong></td>
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<td></td>
<td>9:30-10:45 am</td>
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<tr>
<td></td>
<td>MATH 250-Cal I</td>
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<td>8-9:40 am</td>
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<td>8-9:40 am</td>
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<tr>
<td>(First 8 weeks)</td>
<td><strong>Session B</strong></td>
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<tr>
<td></td>
<td>MATH 251-Cal II</td>
<td>MATH 253-Cal IV</td>
<td>MATH 251-Cal II</td>
<td>MATH 253- Cal IV</td>
<td>MATH 251- Cal II</td>
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<tr>
<td>(Second 8 weeks)</td>
<td><strong>Session C</strong></td>
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<tr>
<td></td>
<td>MATH 252-Cal III</td>
<td>MATH 254-Diff Eq</td>
<td>MATH 252-Cal III</td>
<td>MATH 254-Diff Eq</td>
<td>MATH 252-Cal III</td>
</tr>
</tbody>
</table>
Math 254, Differential Equations

Course Description: Separable differential equations, linear constant coefficient differential equations (homogenous and nonhomogeneous). Laplace Transforms, series solutions, linear systems, Euler’s methods.

Topics Covered:

**First-Order Differential Equations**
- 1.2 Solutions and Initial Value Problems
- 1.4 The Approximation Method of Euler
- 2.2 Separable Equations
- 2.3 Linear Equations
- 2.4 Exact Equations
- 2.5 Special Integrating Factors
- 2.6 Substitutions and Transformations
- 3.6 Improved Euler’s Method
- 3.7 Higher-Order Numerical Methods: Taylor and Runge-Kutta

**Linear Second-Order Equations**
- 4.2 Homogeneous Linear Equations: The General Solution
- 4.3 Auxiliary Equations with Complex Roots
- 4.4 Nonhomogeneous Equations: The Method of Undetermined Coefficients
- 4.5 The Superposition Principle and Undetermined Coefficients Revisited
- 4.6 Variation of Parameters
- 4.7 Variable-Coefficient Equations
MATH 254 Differential Equations (Cont.)

Introduction to Systems and Phase Plane Analysis
5.2 Elimination Method for Systems with Constant Coefficients
5.3 Solving Systems and Higher-Order Equations Numerically

Laplace Transforms
7.2 Definition of the Laplace Transform
7.3 Properties of the Laplace Transform
7.4 Inverse Laplace Transform
7.5 Solving Initial Value Problems
7.6 Transforms of Discontinuous and Periodic Functions

Series Solutions of Differential Equations
8.1 Introduction: The Taylor Polynomial Approximation
8.2 Power Series and Analytic Functions
8.3 Power Series Solutions to Linear Differential Equations
8.4 Equations with Analytic Coefficients
8.7 Finding a Second Linearly Independent Solution
8.8 Special Functions

Methods for Linear Systems
9.1 Introduction
9.2 Review 1: Linear Algebraic Equations
9.3 Review 2: Matrices and Vectors
9.4 Linear Systems in Normal Form
9.5 Homogeneous Linear Systems with Constant Coefficients
Summarized Fall 2012 ENGR Class Retention and Success Rates

![Bar chart showing retention and success rates for ENGR 100, ENGR 221-Statics, ENGR 221-Circuits, and ENGR 222-Thermo. The chart indicates the number of students who were enrolled on the census date, the number who retained the course, and the number who achieved a grade of C or higher.]
ENGR 100-Learning Outcomes

- Changes needed to improve student success:
  - Continue the field trips, but move them towards the second half of the semester. This allows students to concentrate working on the problem-solving skills in the first half of the semester.
  - Continue to encourage students attending local professional societies such as LES, ASCE and BPCC SES monthly luncheons.
<table>
<thead>
<tr>
<th>Host Company</th>
<th>Course Topics</th>
<th>Sponsors</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPCC Physical Plant</td>
<td>Mechanical Engineering</td>
<td>Mike Porterfield at Storer Equipment</td>
</tr>
<tr>
<td>Waste water plant, Bossier city public utility</td>
<td>Civil Engineering: waste water treatment</td>
<td>Jeffery Anderson at Bossier City</td>
</tr>
<tr>
<td>Concrete material Lab from DOTD</td>
<td>Material properties and quality control</td>
<td>Jason Winget at DOTD</td>
</tr>
<tr>
<td>Honeywell</td>
<td>Chemical Engineering</td>
<td>Robert Newberry at Honeywell UOP</td>
</tr>
<tr>
<td>Ongoing building drinking water plant</td>
<td>How to design and build a civil project</td>
<td>Jeffery Anderson at Bossier City</td>
</tr>
<tr>
<td>Arsenal Hill Power plant, American Electric Power plant</td>
<td>Thermodynamics</td>
<td>Russ Gedeon at AEP</td>
</tr>
</tbody>
</table>
ENGR 100-Learning Outcomes (Cont.)

- Students enjoyed working on the final project in collaboration with Allied Health department at BPCC. We will continue to have the freshman design project for this class.

**Project:** Design an assistive device for wheelchair bound person access to vending machine
ENGR 100 Freshman Engineering Project
ENGR 100-Learning Outcomes (Cont.)

- Changes needed to improve retention:

  The overall student success rate is low; and it is a combination of two main factors:

  (1) We piloted no prerequisite requirement for ENGR 100 class, with an intention to expose ENGR students with more field specific knowledge. It was proved not to be a success. We will implement the MATH 112 (Trigonometry) as a co-requisite for this class.

  (2) 40% of students (out of 24) quitted coming to the class and did not take the mid-term. Without implementing suspension policy last semester, majority of these students were counted in the class roster, but withdrew the class right before the drop date. The instructor foresees a significantly improved success rate when the new attendance policy is implemented next Spring semester.
ENGR 100 Guest lecture Series

• Dave Rambaran, PE, Shreveport ASCE President, Geoscience Engineering
• Russ Gedeon, PE, Manager region 5 Engineering at AEP
• Ali Mustapha, PE, Shreveport city engineer, LAPELS board member
New Robotic element to ENGR 100
Spring 2013
ENGR 222-Thermodynamics Learning Outcomes

- Changes needed to improve student success:

This was the first time that Thermodynamics was taught at ENGR program. We covered the materials in the same textbook that LA Tech use. It would be better to accelerate the pace of the first two chapters to allow sufficient time to cover the last chapter. We will continue the field trip to Arsenal Hill Power Plant. It helps students understand how steam power cycle works.
ENGR 222-Thermodynamics Learning Outcomes (Cont.)

Changes needed to improve retention:

• Two students withdrew because of their immense family and work obligations. The instructor will continue to advise ENGR students budget their time wisely and take the appropriate numbers of classes that their time allows. The three students that stayed in the class grasped the concepts very well.
ENGR 220-Statics Learning Outcomes

- Changes needed to improve student success:
  - This Statics class needs to have Calculus I as prerequisite, because students need integration to solve the problems related to centroid and moment of inertia. We will continue to use testing center, for it allows extra class time to work more problems. Next time when we cover the concept of truss, we will add some web-based software to complement the theory learned.

- Changes needed to improve retention:
  - Students who dropped class were full time workers taking full time load of ENGR classes. But they will come back to retake the course. The instructor will advise them to assess their priorities and choose the right number of classes next spring.
2012 Fall, 2013 Spring and Summer classes enrollment status

- Intro to Engr.: 24 (Fall 2012), 22 (Spring 2013)
- Statics: 11 (Fall 2012), 7 (Spring 2013)
- Strength of materials: 0 (Fall 2012), 6 (Spring 2013)
- Thermodynamics: 5 (Fall 2012), 7 (Spring 2013)
- Circuits: 8 (Fall 2012), 7 (Summer 2013)
New ENGR Internship Course: ENGR 299 Addition

Jacquelyn French is offered an internship at EJES and will start working this summer 2013.

       ----- Sponsor: Tanita Gilbert-Baker, PE

Patrick McDonald has been working with Dave Rambaran, PE on Geoscience engineering.

       -------- Sponsor: Dave Rambaran, PE

Justin Higdon has been tutoring College Algebra for TOTAL project.

       ----- Sponsor: Deanna Hardy, BPCC Math Professor
AutoCAD and Rapid Prototyping Tools

3-D Printer:

Propose adding Autocad workshop training sessions.
Propose to add Geographical Information System (GIS) Course

http://www.burnaby.ca/Our-City-Hall/City-Departments/Engineering/Geographical-Information-Systems.html
Transfer to Louisiana Tech University

- Each ENGR discipline course alignment
- Engineering technology transfer

Total survey number: 32 students who are currently taking ENGR courses
Transfer to University of Louisiana Lafayette (ULL)

- Each Engr discipline course alignment
- ULL-BPCC engineering Articulation agreement status
Transfer to Louisiana State University (LSU)

- BPCC ENGR courses syllabi are currently reviewed by LSU.
Develop Partnerships

• SAME

- BPCC SAME student post
- Current BPCC student, Jacobi Muecke was sponsored to attend SAME Student Leader Workshop at Glendale, Arizona January 24-26, 2013.
Develop Partnerships (Cont.)

• ASCE

• LES

• SPE
Advisory Board Discussion on Industry expectation of outcomes

Q: What is the current trend in engineering? Are there any valuable tools or skills that industries need BPCC ENGR students to learn?
Partnering with high schools

• Sally Namie at Bossier schools arranged a meeting for us to meet local school counselors to introduce BPCC engineering on Sept. 26, 2012.

• Robotic programs
The Value of ATMAE Accreditation- Its Pivotal Roles

- Accreditation sustains and enhances the quality of higher education. It acts as the "Gatekeeper" for assuring a threshold level of quality by requiring periodic review.

- Accreditation maintains the academic values of higher education.

- Accreditation serves public interest and need. By providing assurance that an accredited program meets a set of quality standards.
BPCC ENGR ATMAE Accreditation

- Fall, 2013
  - Team Preparation
  - Self – Assessment
  - Document Preparation
  - Visiting Team Meeting
  - Results of Accreditation Application – Spring, 2014
BPCC Student engineering society (SES)
Facebook Page Development

• Created Spring Semester 2013
  – Program information
  – Local engineering chapter’s newsletters
  – Accreditation information
  – Course information
  – BPCC Student Engineering Society (SES)
  – Calendar of events
  – Communication
GOALS OF SES

• Student Support System
• Program Improvement through enhanced student/administration communication
• Introducing students to Engineering in the community (Guest Lecturers/Internships)
• Proactive student recruitment
• Volunteer opportunities for students to make a difference in the community
Leadership Opportunities through SES

Opportunity for engineering students to develop valuable leadership skills

There are nine elections positions that make up the Executive Council:

• President
• Vice-President
• Secretary
• Treasurer
• Community Outreach Coordinator
• Webmaster
• Three Student Representatives
SES in our Community

• Establish relationships with the schools and businesses in Shreveport/Bossier
• Work to develop and coordinate local engineering competitions
• Gain support and sponsorship from the community in Shreveport/Bossier
• Create a partnership with Sci-Port
Develop Partnerships

SES is going to establish partnerships with engineering organizations, allowing members to gain valuable experience

- LES
- ASCE
- SAME
- SPE
- IEEE
Our Goals For This Semester

• Develop resources for academic help for students
• Establish web page
• Introduce more four year colleges to our program
• Get involved with schools in our community
• Allow students to gain insight into engineering through field trips and guest speakers at monthly meetings
• Share student comments and provide feedback with the administration
• Participate in a volunteer fund raiser, allowing students to give back to the community
In the Near Future

• We would like to create an environment of success
• Help BPCC to grow so that the engineering program can grow
• Set up student trips, i.e. National Conference
• Create more partnerships in the community
• Establish a system of recognition for students who achieve academic excellence
• Continue efforts in fund raising and student recruitment

We need your sponsorship! Scholarship! Internship opportunities!
Thanks For All You Do!

Next meeting – September, 2013
<table>
<thead>
<tr>
<th>BRCC Courses</th>
<th>UL Lafayette Courses</th>
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</thead>
<tbody>
<tr>
<td><strong>Chemical Engineering</strong></td>
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<tr>
<td>ENGR 221 – Circuits (3)</td>
<td>EECE 201 – Electrical Circuits (3)</td>
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<tr>
<td>ENGR 222 – Thermodynamics (3)</td>
<td>ENGR 301 – Thermodynamics (3)</td>
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<tr>
<td>CHEM 102 - General Chemistry II (3)</td>
<td>CHEM 108 - General Chemistry II (3)</td>
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<tr>
<td>CHEM 250 – Organic Chemistry I (3)</td>
<td>CHEM 231 – Organic Chemistry I (3)</td>
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<tr>
<td><strong>Civil Engineering</strong></td>
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<tr>
<td>ENGR 220 – Statics (3)</td>
<td>ENGR 211 – Statics (3)</td>
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<tr>
<td>ENGR 201 – Engineering Materials (3)</td>
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<tr>
<td><strong>Electrical and Computer Engineering</strong></td>
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<td>ENGR 100 – Engineering Fundamentals (3)</td>
<td>EECE 101 – Intro to Electrical Engineering (1)</td>
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<td>PHYS 212 (3) and 202L (1) – Physics II and Lab</td>
<td>PHYS 202 – General Physics II (4)</td>
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<td><strong>General Education Courses</strong></td>
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<td>English Composition</td>
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<td>Fine Arts</td>
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<td>Computer Literacy</td>
<td>CIS 105</td>
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<tr>
<td><strong>Pre-Engineering Courses</strong></td>
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<tr>
<td>Engineering Electives</td>
<td>ENGR Electives*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>61</strong></td>
</tr>
</tbody>
</table>

*Engineering Elective courses could include the following, by discipline: