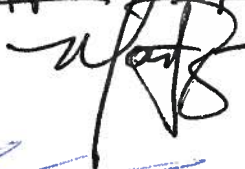




July 14, 2014

MEMORANDUM

Approved by GC:  
 9-22-14

TO: **Dr. Mark Zoran**  
Chair, Graduate Council

THROUGH: **Dr. John C. Criscione**  
Assistant Dean for Graduate Programs  
Dwight Look College of Engineering  


FROM: **Amber Muenzenberger**   
Director, Remote Learning and Outreach Education  
Dwight Look College of Engineering

SUBJECT: Distance Education Master of Engineering in Engineering

The Master of Engineering in Engineering is currently approved for on-campus, face-to-face delivery. We would like to offer the degree via distance education beginning spring 2015. Please see the attached approval and online delivery proposal forms for additional information

Please contact me if you have any questions at [atmberger@tamu.edu](mailto:atmberger@tamu.edu) or 979-458-9719.

RECEIVED

AUG 14 2014

GRADUATE STUDIES

**Texas A&M University**  
**New Certificate, Bachelors, Masters, or Doctoral Program**  
**Undergraduate ♦ Graduate ♦ Professional**  
**♦ Proposal Checklist ♦**

Program request type:  Undergraduate  Graduate  First Professional (ex., DVM, JD, MD, etc.)

Requested by the Department or Unit of: Dwight Look College of Engineering (CLEN)

**Program Type, Level, Designation, Title, Description/Hours**

Program Type:  Certificate Program  Degree Program  
 Program Level:  UG Certificate  Grad Certificate  Bachelor  Master  Doctoral  Professional  
 Degree Designation (i.e., BS, BA, MA, MS, MAgr, MEd, PhD, EdD, etc.) M. Eng. (Masters of Engineering)  
 Title of proposed program: Masters of Engineering in Engineering  
 Proposed CIP Code (if known): 14.0101.00

Brief program description (provide a catalog description for undergraduate and graduate certificates):

The Masters of Engineering in Engineering is a 30 credit hour non-thesis degree that requires at least one major project as part of a class or internship. This degree program is currently offered on-campus, and the requirements and focus for the distance education program are to be identical to the on-campus program. This degree is intended for students who are seeking careers at the interface of traditional engineering disciplines and/or in new disciplines of engineering that are emerging. Hence, the precise coursework requirements are to be determined by the student's advisory committee, chaired by an engineering faculty member who is a full member of the graduate faculty. A degree plan must be filed, and toward this end, a student should specify a particular engineering career path and work with their advisory committee to identify the relevant coursework. It is expected that the degree plan will be filed during the first semester of study. A final exam can be waived by approval of the student's advisory committee—typically when a project presentation is done in lieu of the final exam. It is expected that the subject matter of this program will encompass multiple departments, and hence, oversight of this program will be maintained at the college level (Office of Graduate Programs within Engineering Academic and Student Affairs).

Minimum program semester credit hours (SCH)      Certificates - 12 hours\*      Bachelors - 120 hours      Masters - 30 hours

Proposed program hours: \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      30

\*12 hours minimum to appear on transcript

Certificate Programs  Embedded  Standalone  
*Students take coursework that will result in a degree and certificate being earned at the same time.*      *Non-degree seeking students take coursework to earn a certificate only (no degrees are awarded).*

**Off-Campus or Distance Delivery**

% of Program a student can take off-campus or through Distance Education

	<u>Program Start Date</u>	<u>SACSCOC Approval**</u>	<u>When Provost needs to inform SACSCOC</u>
<input type="checkbox"/> 25%	_____	Notification Only	_____
<input type="checkbox"/> 50%	_____	Approval Required	6 months before first day of program
<input type="checkbox"/> 80%	_____	Approval Required	6 months before first day of program
<input checked="" type="checkbox"/> 100%	<u>Spring 2015</u>	Approval Required	6 months before first day of program

\*\*Notification letter arranged through the Vice Provost for Academic Affairs and sent by TAMU President.

**Program Delivery Mode**

Location

On-campus \_\_\_\_\_  
 Broadcast / TTVN \_\_\_\_\_  
 Specific off-campus location\*\*\* \_\_\_\_\_  
 Distance Education / Internet  In-State  Out-of-State      Start Date Fall 2014  
 Out-of-Country

Will this program be offered with another institution?  Yes  No  
 If yes, contact the Vice Provost for Academic Affairs for additional reporting requirements.

\*\*\*Is this an approved SACSCOC location?  Yes  No      If no, a program prospectus must be sent to SACSCOC.

**Texas A&M University**  
**New Certificate, Bachelors, Masters, or Doctoral Program**  
**Undergraduate ♦ Graduate ♦ Professional**  
**♦ Proposal Checklist ♦**

Approved locations as of March 2012: TAMU-Galveston, TAMU-Qatar, University Center-The Woodlands, CityCentre-Houston, Dubai and Saudi Arabia.

**Program Funding**

Has program funding been finalized at the department or college level?

Yes       No

If no, explain or attach budget: \_\_\_\_\_

Will new costs for the first five years of the program be under \$2 million?

Yes       No

If new costs exceed \$2 million, coordinating board approval is required.

**Submitted by (Contact Person):**

Amber Muenzenberger

atmberger@tamu.edu

Name

Email

Director of Remote Learning & Outreach Education

979.458.9717


Title

Phone

**Certification Statement**

By signing below, the Dean of the College certifies the proposed program complies with coordinating board standards. If the program is delivered through Distance Education, the Dean of the College certifies that they are following the *Principles of Good Practice for Academic Degree and Certificate Programs and Credit Courses Offered Electronically*.


*Use additional signature lines if program is between three or more departments or colleges.*

 9/22/14  
\_\_\_\_\_  
Signature, Department Head or Interdisciplinary Date  
Program Chair

John C. Criscione  
\_\_\_\_\_  
Typed or Printed Name

 9/22/14  
\_\_\_\_\_  
Chair, College Review Committee Date

Valerie E Taylor 9/22/2014  
\_\_\_\_\_  
Dean of College Date

 9-22-14  
\_\_\_\_\_  
Chair, University Curriculum Committee or Date  
Graduate Council

Additional Approvals Required: Faculty Senate and President.

**DISTANCE EDUCATION  
ELECTRONIC TO INDIVIDUALS (ONLINE DELIVERY) APPROVAL FORM**

Submitted by:

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Texas A&M University     | <input type="checkbox"/> Texas A&M University-Texarkana     |
| <input type="checkbox"/> Texas A&M University- Central Texas | <input type="checkbox"/> Texas A&M International University |
| <input type="checkbox"/> Texas A&M University-Commerce       | <input type="checkbox"/> Prairie View A&M University        |
| <input type="checkbox"/> Texas A&M University-Corpus Christi | <input type="checkbox"/> Tarleton State University          |
| <input type="checkbox"/> Texas A&M University-Kingsville     | <input type="checkbox"/> West Texas A&M University          |
| <input type="checkbox"/> Texas A&M University-San Antonio    | <input type="checkbox"/> Texas A&M Health Science Center    |

Distance Education: Electronic to Individuals (Online Delivery) Authorization Request

**Please list the proposed degree and CIP code:**

Degree: Masters of Engineering in Engineering

CIP Code: 14.0101.00

**When is the effective date of the proposed program?**

Effective Date: Spring 2015

**\*\*Please note:** This proposed program cannot be advertised as an online delivered degree program until the A&M System Office of Academic Affairs has approved it and the Texas Higher Education Coordinating Board has been notified.

**Summary of Proposal (Include Background Information and Rationale for the change.)**

The Masters of Engineering in Engineering is a 30 credit hour non-thesis degree that requires at least one major project as part of a class or internship. This degree program is currently offered on-campus, and the requirements and focus for the distance education program are to be identical to the on-campus program. This degree is intended for students who are seeking careers at the interface of traditional engineering disciplines and/or in new disciplines of engineering that are emerging. Hence, the precise coursework requirements are to be determined by the student's advisory committee, chaired by an engineering faculty member who is a full member of the graduate faculty. A degree plan must be filed, and toward this end, a student should specify a particular engineering career path and work with their advisory committee to identify the relevant coursework. It is expected that the degree plan will be filed during the first semester of study. A final exam can be waived by approval of the student's advisory committee—typically when a project presentation is done in lieu of the final exam. It is expected that the subject matter of this program will encompass multiple departments, and hence, oversight of this program will be maintained at the college level (Office of Graduate Programs within Engineering Academic and Student Affairs).

## Financial Implications:

TAMU has sufficient resources to initiate and maintain quality distance learning programs. Traditional funding sources and student fees ensure the excellence of electronically based courses and programs. Students who are enrolled in online courses within the college of engineering are charged distance education differential tuition of \$540.00 per semester credit hour, which allows for the delivery of the course and ensures the quality of distance and distributed education programs of the University. In addition to the distance education differential tuition, there are traditional services that are a part of the university's operations that contribute to the effective delivery of distance education. A list of all student fee and explanations can be found at <http://sbs.tamu.edu/>.

## University: Request for Authorization

I recommend adoption of the following program:

**“Having complied with all of the requirements of the Texas Higher Education Coordinating Board, Texas A&M University (University name) is hereby authorized to offer the Masters of Engineering in Engineering (Degree) program by distance education, electronic to individuals (online delivery) effective Spring 2015.**

**The Texas A&M University System Office of Academic Affairs finds that the program offering aforementioned is within the role and scope and capacity of the institution and will benefit students.**

**Texas A&M University (University name) certifies that the proposed distance delivery of the aforementioned program meets the criteria under Texas Administrative Code Chapter 4 Subchapter P regarding quality of the curriculum and courses; delivery of instruction; evaluation, training, supervision, and support of faculty; financial resources; and admission of and support services for students. The program is within the role and mission of the institution and in the Table of Programs. The institution will comply with the standards and criteria of the Commission on Colleges of the Southern Association of Colleges and Schools and will adhere to criteria outlined in *Principles of Good Practice for Degree and Certificate Programs and Courses Offered Through Distance Education.*”**

### Approval – University:

\_\_\_\_\_  
University President: \_\_\_\_\_  
Print name of President

\_\_\_\_\_  
Date

## Authorization: System

### Approval – Texas A&M University System:

\_\_\_\_\_  
James R. Hallmark, Ph.D.  
Vice Chancellor for Academic Affairs

\_\_\_\_\_  
Date



**THE TEXAS A&M UNIVERSITY SYSTEM  
DISTANCE EDUCATION PROGRAM PROPOSAL:  
ELECTRONIC TO INDIVIDUALS (ONLINE) DELIVERY**

**(BACHELORS OR MASTERS PROGRAMS ONLY)**

**Directions:** An institution shall use this form to propose an “existing” bachelor’s or master’s degree program they wish to be offered via electronic to individual (online) delivery.

This form must be completed and signed by the university president or chief academic officer.

Upon completion, attach the “Approval Form” and submit it to the A&M System Office of Academic Affairs at [AA-Agendaltms@tamus.edu](mailto:AA-Agendaltms@tamus.edu)

**Information:** Contact the A&M System Office of Academic Affairs at 979-458-7421 (Irma Harper)

**Administrative Information**

1. Institution: Texas A&M University
2. Program to be Offered (Include CIP code): Masters of Engineering in Engineering (14.0101.00)
3. Online Program Description –  
The Masters of Engineering in Engineering is a 30 credit hour non-thesis degree that requires at least one major project as part of a class or internship. This degree program is currently offered on-campus, and the requirements and focus for the distance education program are to be identical to the on-campus program. This degree is intended for students who are seeking careers at the interface of traditional engineering disciplines and/or in new disciplines of engineering that are emerging. Hence, the precise coursework requirements are to be determined by the student’s advisory committee, chaired by an engineering faculty member who is a full member of the graduate faculty. A degree plan must be filed, and toward this end, a student should specify a particular engineering career path and work with their advisory committee to identify the relevant coursework. It is expected that the degree plan will be filed during the first semester of study. A final exam can be waived by approval of the student’s advisory committee—typically when a project presentation is done in lieu of the final exam. It is expected that the subject matter of this program will encompass multiple departments, and hence, oversight of this program will be maintained at the college level (Office of Graduate Programs within Engineering Academic and Student Affairs).
4. Administrative Unit – Engineering Academic and Student Affairs within the Dwight Look College of Engineering
5. Proposed Implementation Date – Spring 2015

6. Contact Person -- Provide contact information for the person who can answer specific questions about the program.

Name: John Criscione

Title: Assistant Dean for Graduate Programs, Dwight Look College of Engineering

E-mail: [jccriscione@tamu.edu](mailto:jccriscione@tamu.edu)

Phone: 979.845.5428



## Format for Existing Bachelors or Masters Degree Program Electronic to Individual (Online Delivery) Request

**Step One:** For each of the following questions, include the requested information:

- What previously approved programs does your university offer, that are closely related to the new program and how are they related?

The Dwight Look College of Engineering at Texas A&M University offers a variety of Masters of Engineering degree programs:

- Aerospace Engineering
- Biological & Agricultural Engineering
- Biomedical Engineering
- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electrical engineering
- Industrial Engineering
- Materials Science & Engineering
- Mechanical Engineering
- Nuclear Engineering
- Ocean Engineering
- Petroleum Engineering

All of these programs are related as they are professional degrees that are practice-oriented for industry applications and ventures.

- (List the programs within your college/department that are already approved for online delivery.)
  - Masters of Science in Engineering Systems Management
  - Masters of Engineering in Industrial Engineering
  - Masters of Engineering in Petroleum Engineering
  - Masters of Engineering in Mechanical Engineering (*currently pending approval*)
  - Masters of Industrial Distribution
  - Masters of Science in Safety Engineering
- Will significant additional equipment or facilities be needed? If yes, explain.

Texas A&M University and the college of engineering and have a robust and stable infrastructure to design, develop, and deliver distance courses. These resources include software as well as facilities to design and develop quality distance education content. Physical resources within the college include small studios to record and edit lectures, classrooms with lecture capture and videoconferencing (TTVN) capabilities, and interactive video/webinar rooms. At the university level, KAMU studios can be used to produce high quality videos.

TAMU libraries have podcast rooms available for faculty use. In addition, Instructional Technology Services provides and supports Blackboard Learn, the learning management system, and they host a variety of training events on Blackboard as well as other instructional technology software packages. Academic technology staff within the college of engineering will also work with faculty to provide additional and just-in-time training and assistance to use these facilities and software packages.

- Will significant additional financial resources be needed? If yes, explain.

TAMU has sufficient resources to initiate and maintain quality distance learning programs. Traditional funding sources and student fees ensure the excellence of electronically based courses and programs. Students who are enrolled in online courses within the college of engineering are charged distance education differential tuition of \$540.00 per semester credit hour, which allows for the delivery of the course and ensures the quality of distance and distributed education programs of the University. In addition to the distance education differential tuition, there are traditional services that are a part of the university's operations that contribute to the effective delivery of distance education. The library, for example, provides online access to electronic databases and interlibrary loan services. Texas A&M Computing and Information Services, in addition to maintaining servers and network, supports the course management system, student information system, university Web site, etc. that are essential resources for the operation of distance education programs. These units are funded through state appropriations and student fees. A list of all student fee and explanations can be found at <http://sbs.tamu.edu/>.

- Will a significant number of new courses be required? If yes, explain.

Courses that are currently offered within the face-to-face degree program will be designed and developed into a distance education modality through a partnership between the subject matter expert (faculty member) and the instructional design and development team. The face-to-face and distance education courses will have the same course goals and objectives. These courses will only differ in the delivery and teaching methodologies that have proven to be best practices in distance education courses. Students, regardless of the delivery mechanism will be held to the same standard for courses and the degree program.

- Will a significant number of new faculty members be required? If yes, explain.

Existing faculty will serve as the subject matter experts when designing and developing the courses with an instructional design team. The subject matter experts and additional currently existing graduate faculty within the college of engineering will serve as the instructors of record. As the program grows, additional faculty may be hired according to the graduate faculty standards set forth by the college of engineering.

- Will significant additional library/learning resources be needed? If yes, explain.

Library resources to be used within the distance education program currently exist via electronic means. Both face-to-face and distance education students will have access to the same resources and databases that will be required to complete the program. All students involved in the program will be subject to the library use fee, which is standard for all Texas A&M University students regardless of location. Program staff will assist these students as needed in acquiring necessary materials.

- What processes do you have in place that secures that a student registered for a distance education course is the same student who completes and receives credit for it? Explain.  
Texas A&M University currently has distance education programs and demonstrates that the student who registers these programs or courses is the same student who participates in and completes the course or program and receives the credit. TAMU verifies the identity of students through a secure login and pass code available in the university learning management system (Blackboard Learn). TAMU offers approximately 30 programs, through the College of Agriculture & Life Sciences, College of Education & Human Development, Dwight Look College of Engineering, and College of Science, in which students can obtain 50 percent or more of the program via distance learning. These programs were approved by The Texas A&M University System as a part of a comprehensive institutional plan for distance education. All of these programs are currently enrolling students. Furthermore, the university offers fully on-line courses in a variety of disciplines. TAMU implemented Blackboard Learn as the learning management system in Spring 2012 to effectively manage these courses and to verify student participation in online courses.

TAMU primarily uses the secure login and password system in Blackboard Learn to verify the student identity. To access the course content maintained on the Blackboard Learn course management system, TAMU requires students to log in using a unique username and password. The password is initially set to a unique nine-digit number, which is communicated to students at the time of application and acceptance to the university. After the initial login, a student may change the default password. Furthermore, through this secure login and password, student activity performed in these courses is logged on the Blackboard server. Course instructors and system administrators can create reports showing users' logon dates, frequency, content area access, tool usage, and assessment and assignment submissions.

In addition, Texas A&M University has several Standard Administrative Procedures (SAPs) and University Rules (URs) that address student authentication:

- SAP 29.02.03.M1.03 Information Resources – Account Management
- SAP 29.01.03.M1.14 Information Resources – Password-Based Authentication
- SAP 29.01.03.M1.09 Information Resources – Incident Management
- SAP 29.01.03.M1.27 Exclusion from Required Risk Mitigation Measures
- UR 29.01.03.M2 Rules for Responsible Computing
- UR 29.01.03.M1 Security of Electronic Information Resources

**\*Note:** SACS requires that programs that are a significant departure from those offered when the institution was last evaluated be reported according to SACS. If the answers to these questions reflect a “significant departure” then SACS reporting is required.

**Step Two:** For each of the following questions, include the requested information:

1. Program Administrative Oversight and Structure:

- Identify the person and office directly responsible for the overall management of the offering.
  - Name: John Criscione
  - Title: Assistant Dean for Graduate Programs, Dwight Look College of Engineering
  - E-mail: [jccriscione@tamu.edu](mailto:jccriscione@tamu.edu)
  - Phone: 979.845.5428

2. Faculty Resources:

- If the online program will result in additional students, how will faculty resources be provided, that is, hiring additional faculty, reallocating faculty resources from other programs, etc.?

Existing faculty will serve as the subject matter experts when designing and developing the courses with an instructional design team. The subject matter experts and additional currently existing graduate faculty within the college of engineering will serve as the instructors of record. As the program grows, additional faculty may be hired according to the graduate faculty standards set forth by the college of engineering. The department and college will monitor the growth of the program to determine additional needs, if current faculty from other programs can be utilized to serve as subject matter experts and instructors of record, department will work together to share faculty appointments (when necessary). If additional faculty are warranted, the college of engineering will work with departments to hire qualified distance education faculty to develop and teach courses within the distance education masters program.

3. Evaluation:

- How will your institution monitor the quality of the program and student learning outcomes?

Course content creation, design, and development will be carried out as a partnership between the subject matter expert and the instructional design and development team. Quality standards will be established based on national standards to ensure the course is consistent with Texas A&M University standards for educational program development. Accessibility laws and guidelines will also be followed.

Distance courses within the college of engineering will be evaluated and assessed within the academic program’s assessment and continuous improvement process. The continuous improvement process looks annually at the learning outcomes of the individual courses in the program. The program assessment takes place yearly with WEAVE online. A formal audit or review occurs every seven years by outside engineering experts and a final report is

sent to the TAMU Provost's Office. The department and program coordinators will ensure that data are collected to represent the distant modality and are then fed into the assessment process and the improvements made thereafter.

- Describe procedures for evaluation of the program and its effectiveness in the first five years of the program, including admission and retention rates, program outcomes assessments, placement of graduates, changes of job market need/demand, ex-student/graduate surveys, or other procedures.

Engineering Academic and Student Affairs (EASA) within the college of engineering will collaborate with department to assess admission and retention rates for both the on-campus and distance education degree programs. In addition to the monitoring and assessment procedures mentioned above, the EASA will work with departments to assess program outcomes through an informal review process after the fourth year of the program. The department will be responsible for tracking the placement of students, changes within the job market/demand, and exit surveys of students of both the distance education and on-campus degree programs. The program will also be assessed by external reviewers every six to seven years as part of the academic review process.

- How would evaluations be carried out?  
The program evaluation will encompass performance of students, evaluations of the professors, and quality of program from the perspective of students, professors, and industry. Distance education students will be evaluated in comparison to students in face-to-face classrooms through grade distributions and test evaluations/assessments. Professors will be evaluated through the same evaluation tools used by the department for other courses. The program will be evaluated through a survey instrument provided to students both face-to-face and distance. This instrument will ask students to evaluate the quality of instruction they received through the course management system or face-to-face, to comment on their use of other media for communications, and to suggest ways to improve various facets of the course/program. Departmental faculty will monitor courses to evaluate teaching methods and effectiveness to suggest improvements and develop best practices in delivery techniques. Industry advisory boards will be asked to provide input regarding the programs, this feedback will be used to make appropriate changes in the degree and delivery of the program.

**Step Three:** Complete, sign and submit with proposal the "Texas Higher Education Coordinating Board Certification Form for Electronically Delivered Programs" on the following page.

## **Texas Higher Education Coordinating Board**

### **Certification Form for Electronically Delivered and Off-Campus Education Programs**

Based on *Principles of Good Practice for Academic Degree and Certificate Programs and Credit Courses Offered Electronically*.

#### **CURRICULUM AND INSTRUCTION**

- Each program or course results in learning outcomes appropriate to the rigor and breadth of the degree or certificate awarded.
- A degree or certificate program or course offered electronically is coherent and complete.
- The program or course provides for appropriate interaction between faculty and student and among students.
- Qualified faculty provide appropriate oversight of the program or course that is offered electronically.
- Academic standards for all programs or courses offered electronically will be the same as those for programs or courses delivered by other means at the institution where the program or course originates.
- Student learning in programs or courses delivered electronically should be comparable to student learning in programs offered at the campus where the programs or courses originate.

#### **INSTITUTIONAL CONTEXT AND COMMITMENT**

##### Role and Mission

- The program or course is consistent with the institution's role and mission.
- Review and approval processes ensure the appropriateness of the technology being used to meet the objectives of the program or course.

##### Students and Student Services

- Program or course announcements and electronic catalog entries provide appropriate information.
- Students shall be provided with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technological competence and skills, technical equipment requirements, availability of academic support services and financial aid resources, and costs and payment policies.
- Enrolled students have reasonable and adequate access to the range of student services and student rights appropriate to support their learning.
- The institution has admission/acceptance criteria in place to assess the extent to which a student has the background, knowledge and technical skills required to undertake the program or course.
- Advertising, recruiting, and admissions materials clearly and accurately represent the program or course and the services available.

##### Faculty Support

- The program or course provides faculty support services specifically related to teaching via an electronic system.
- The institution assures appropriate training for faculty who teach via the use of technology.

- The institution provides adequate equipment, software, and communications access to faculty to support interaction with students, institutions, and other faculty.

#### Resources for Learning

- The institution ensures that appropriate learning resources are available to students.
- The institution evaluates the adequacy of, and the cost to students for, access to learning resources and documents the use of electronic resources.

#### Commitment to Support

- Policies for faculty evaluation include appropriate recognition of teaching and scholarly activities related to programs or courses offered electronically.
- The institution demonstrates a commitment to ongoing support, both financial and technical, and to continuation of the program or course for a period of time reasonable and sufficient for students to complete the course or program.

### **EVALUATION AND ASSESSMENT**

- The institution evaluates the program's or course's educational effectiveness, including assessments of student learning outcomes, student retention, and student and faculty satisfaction.
- At the completion of the program or course, the institution provides for assessment and documentation of student achievement in each course.

On behalf of *Texas A&M University*, I assert that the preceding Coordinating Board criteria have been met for all courses and programs that will be delivered electronically and off-campus face-to-face.

\_\_\_\_\_  
Chief Academic Officer or President

\_\_\_\_\_  
Date

Name:

Title:

THECB 6/2010