



School of Engineering

CHRISTIAN BROTHERS UNIVERSITY

[News](#) - April 2002

PROFILE

Department of Electrical & Computer Engineering

The Electrical and Computer Engineering Department at Christian Brothers University continues an outstanding tradition of preparing students for careers in a variety of engineering fields. Since the department was formed in 1952 about 1,000 students have received an electrical engineering degree from CBU.

Originally, the department emphasized the core electrical engineering disciplines of power systems, controls and electronics. In recent years, we have changed our name from the electrical engineering to electrical and computer engineer department to emphasize the broad range of topics taught and our commitment to bring students the most up to date education possible. While all students receive a degree in electrical engineering for accreditation purposes, students have the option of selecting two educational tracks. The electrical engineering track emphasizes electronics, controls, and digital systems to provide students with a solid background to work in a variety of industrial positions. The computer engineering track emphasizes digital systems, networks and software issues. The graduates of this track normally work with the design and operation of digital computer or communication systems.

Regardless of the track students select, they have the opportunity to take a wide variety of senior electives. The department works with other engineering faculty and advanced industry practitioners to offer courses such as artificial intelligence, computer interface design, computer graphics and forensic engineering. In addition, the program is designed to allow students the chance to earn minors in mathematics, computer science, or engineering psychology.

ENGINEERING SUMMER COURSES

Below is a list of engineering summer courses:

June Session

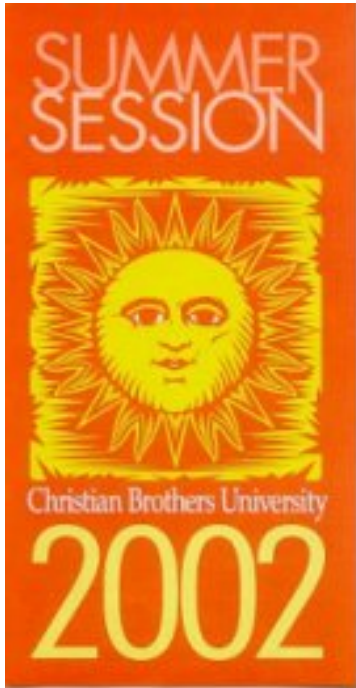
- 30025, CE 201 X, Statics, MTWR 8:30 - 10:15, N241, Madhavan
- 30186, CH E 231 X, Thermo, MTWR 10:30 - 12:15, BU224, Ray
- 30193, ECE 221 X, Circuits I, TR 1:00 - 4:00, TBA, Ventura

July Session

- 30185, CE 498 Z, Quality Assurance, MTWR 10:30 - 12:15, N235, Jackson

Notes:

- Course descriptions for CE 201, ChE 231, and ECE 221 can be found in the recent catalog; whereas the description of CE 498 is "Quality principles are presented through case studies and articles as a methodology to introduce students to organizational functions. Topics presented include: leadership, planning, customer focus, information and analysis, employees and partnerships, process management, and performance results. Emphasis is on the 'human side' of organizational dynamics and performance."
- ChE 231 is accepted as a substitution for the ME 305 requirement for CEE and ECE majors.



MAESC 2002 CONFERENCE

New frontiers... New strategies...

The 4th Annual Memphis Area Engineering & Sciences Conference
Friday, May 10th, 2002
8:00 a.m. - 4:00 p.m.
Christian Brothers University

The School of Engineering and the School of Sciences at Christian Brothers University, in partnership with St. Jude Children's Research Hospital, invite you to learn more about how technology and science will make a difference in the Mid-South's future.

The theme of this year's conference is **Building Foundations for a Better Tomorrow**. Scientists, engineers, researchers and corporate leaders will discuss recent developments in technology and the sciences with a special emphasis on Biotechnology and





Economic Development. Participants will have the opportunity to share new ideas, investigate new opportunities and seek creative solutions to the challenges that lie ahead in these various disciplines.

KEYNOTE ADDRESSES:

"Business Fundamentals: Taking Technology from the Lab to the Marketplace"

G. Robert (Bob) Morris

Butler, Snow, O'Mara, Stevens & Cannada, PLLC
Chairman, Tennessee Governor's Task Force on
Biotechnology



"Influenza Bioengineering: A Natural Terrorism Agent"

Robert G. Webster, Ph.D.

St. Jude Children's Research Hospital
Member, U.S. National Academy of Sciences

FOR MORE INFORMATION:

School of Engineering at Christian Brothers University
650 East Parkway South, Memphis TN 38104
901.321.3405 or maesc@cbu.edu
www.cbu.edu/engineering/maesc

CBU alumni get a 20% discount on the registration fee!

**ENGINEERING
SENIOR PICNIC**

The School of Engineering at Christian Brothers University invites you to take a late lunch to honor our engineering seniors at a picnic on Friday, April 19, 2002. We'll gather behind the Nolan Engineering Building near the left field foul line of the softball field for a great view of the LadyBucs VS Bethel College at 2 p.m.

4 p.m.-5:30 p.m.: Good Ole' Fish & Chicken Fry served by the Olive Branch Catfish Company along with cold beer and soft drinks.

Engineering Seniors - Free!

Undergraduate Engineering Students - \$8

Engineering Alumni - \$12

Please confirm your attendance by April 16th by sending a check payable to CBU to:



CBU School of Engineering Picnic · Box 52
650 E. Parkway South · Memphis, TN 38104

Questions? Credit Card Payment Option? Contact Diana Dluhos at 901-321-3405 or email ddluhos@cbu.edu.

P.S. All Engineering Alumni will receive a softball autographed by the Lady Buc Softball Team

OTHER SENIOR EVENTS

Thursday April 11, 12:15 p.m. - 1:30 p.m., Real World for Seniors (Lunch Provided):

Learn real world stuff from Alumni Professionals including tips on buying your first house, maximizing your company's 401K or lack of one!, budgeting, working the room at a cocktail party, and volunteering for professional and personal gain. This is the class that alumni say they wish they had "way back when." Now is the time for you to walk away prepared and informed. FREE! RSVP to alumni@cbu.edu.

Monday, April 29, 6:30 p.m. Senior Party:

Make plans to get off of work because this party is just for you! We'll travel by bus to a "to be determined spot" in Memphis where you'll enjoy food, music, and beverages. Tickets will go on sale, Monday, April 22nd in the cafeteria and the Student Affairs Office.

Thursday, May 9 Senior Picnic to follow Graduation Rehearsal:

Food & Fun, No Cost! Faculty encouraged to attend but you must RSVP to alumni@cbu.edu.

IT CAN BE FUN EVEN IN A PHIL COURSE

Christian Brothers University students don't take a back seat to anybody... unless it's in one of the "paper chairs" they just produced as part of a special interdisciplinary course this semester.



The 14 students taking the class titled "**Technology and Human Values**" from professors **Fred Terry** and **Peter Limper** worked in teams of two that paired engineering students with non-engineering majors. The teams designed and developed seven chairs made entirely of paper, paper products and glue. And each chair supports a person weighing more than 200 lbs.

"'Technology and Human Values' is designed to deal with the human implications of technology and with important ethical and social issues related to technology," says Dr. Fred Terry, professor of engineering. It considers the ethical responsibilities of engineers and other technological professionals, as well as the responsibilities of all persons as citizens of a technological society. Throughout the course, ethics were considered both as involving the application of basic philosophical concepts, and as a special kind of problem-solving activity with analogies to engineering design.

The student teams were given this assignment

- Each two-person team will design and build a chair for an adult made entirely of paper, paper products, and glue.
- The chair must generally meet the requirements for a task or work chair.
- The chair must support 250 pounds.
- Total cost of the materials used for constructing the chair must be less than \$30.01.

The chairs had to meet safety and usage codes and be able to accommodate a sitting adult regardless of gender or age. The students were also asked to adhere to the principles of good design and keep aesthetics in mind. "*Life is too short to sit in an ugly chair,*" said Terry.

Some of the chairs were plain, while some were more colorful. All met the minimum criteria. Most of the structural materials came from "dumpster diving" with a few dollars spent on glue. The heaviest chair weighed 8 lbs. And the lightest was 4 lbs. One student team made a chair, footrest and small table from FedEx package boxes; a fitting tribute... or maybe a "sitting" tribute to Memphis' largest employer and one of the largest employers of CBU engineering and business graduates.

To test one of the paper chairs, contact Dr. Fred Terry, School of Engineering at CBU at (901) 321-3415.

AND MORE FUN WITH MOON BUGGY AND CONCRETE CANOE PROJECTS



Alpha 3

Since the year 2000, CBU mechanical engineering students have entered the Great Moon Buggy Race, which is sponsored by NASA. This year's team consists of **Marco Capote**, **Garrett Martin**, **Kris Westbrook**, and **Anthony York**. Drs. **Paul Shiue** and **Bernard Beard** are faculty advisors for the project. The 2002 CBU buggy, the Alpha 3, will enter the 2002 race at the Marshall Space Flight Center in Huntsville, Alabama, on April 12-13. Competitors must negotiate a simulated lunar terrain course in a minimum amount of time. Each buggy must be human powered by one female and one male. The disassembled buggy must fit into a 4' cubic volume. Drivers must be able to carry the disassembled buggy a distance of

20 feet. The minimum ground clearance for any body part must be at least 15 inches. Maximum assembled width is 4 feet, the assembled length and height are unlimited. The vehicle must be equipped with simulated elements such as a TV camera, an antenna, and a U.S. flag. More information about Alpha 3 can be found at <http://www.cbu.edu/Clubs/mbsquad/MB2002/MB2002.htm>.



2002 CBU Concrete Canoe

Every year, the ASCE Student Chapter enters the concrete canoe race at the SE Regional Conference. **Becky Bailey** led the construction project this year. Project slides can be found at <http://www.cbu.edu/engineering/cee/2002canoe.ppt>. The canoe is on its way to the 2002 conference at Florida A&M University-Florida State University in Tallahassee, Florida. The following students are on this trip: **Melissa Johnson, Joshua Giannini, John Wes Goodnight, Peter Hall, Becky Bailey, Jason Deweber, Paolo Fonda, Erik Weghorst, Andy King, and Yothin Chaisingharn**. They will compete in Concrete Canoe, Concrete Bowling Ball, Balsa Wood Bridge, Environmental, Mystery, Cost Estimation, and Surveying. **Fred Sock** (Faculty Advisor) accompanies the group to the conference.

CBU GRADUATE ENGINEERING RECOGNIZED BY GMAQ

The GMAQ award was established in 1993 and is based on the Malcom Baldrige National Quality Award established by the Congress of the United States in 1987. GMAQ is a non-profit association promoting performance excellence in the workplace through a self-assessment process based on the Baldrige Criteria. The association offers recognition at various levels: Quality Commitment, Quality Progress, Quality Leadership and the prestigious Pyramid of Excellence Award.



Christian Brothers Graduate Engineering has moved up and was awarded the Level II, Quality Progress. We have demonstrated serious commitment to excellence and an effective process for continuous improvement.

STUDENT NEWS

There will be a meeting to revitalize our Society of Women Engineers (SWE) Student Chapter on Thursday, April 18, 11:00 a. m. - 11:50 a.m. in Thomas Center Conference Room. **Sandy Pettit, PE**, Region D, Deputy Director of SWE will be at the meeting. Female engineering students are encouraged to attend. This is a great opportunity to find a mentor, to network, and to learn from their experiences.

Congratulations to **Andrew Howard** for being selected as one of the top ten finalists in the Region 3 Student Paper Contest. Andrew submitted his paper entitled "PLC Compensated, Tachogenerator Feedback for Constant Speed Control of an AC Induction Motor." Andrew, other IEEE students, and John Ventura (Faculty Advisor) are on their way to compete at the SoutheastCon 2002 in Columbia, SC.

Congratulations to the following CEE and ME seniors for their final senior project presentations on March 23rd. Also thanks to the faculty, practitioners and companies for advising/sponsoring these projects.



CEE Projects:

- *Design of the Waste Water Treatment Plant for CIBA Specialty Chemicals at the West Memphis Site*
 Student: Paolo Matthew Fonda
 Practitioners: Stewart Johnson and James Morse of CIBA Specialty Chemicals
 Faculty Advisor: Dr. L. Yu Lin, P.E.
- *Design of Foundations for Grain Silos*
 Student: John Wesley Goodnight
 Practitioners: Ashraf Elsayed, Ph.D., P.E. and Kenneth Hall, Ph.D., P.E., of Hall, Brake, & Associates
 Faculty Advisor: Dr. K. Madhavan, P.E.
- *Billy Maher Road Proposed Improvements*
 Student: Jason Michael Deweber
 Practitioners: James Collins, P.E., and Douglas Duke, P.E., of Kimley-Horn & Associates, Inc.
 Faculty Advisor: Mr. Gene McGinnis, P.E.
- *St. John - New Madrid Floodway Design*
 Student: Juanita C. Ford
 Practitioner: Roger Smith, Ph.D., of U.S. Army Corps of Engineers (Memphis District)
 Faculty Advisor: Dr. L. Yu Lin, P.E.
- *VOC Reduction/Air Permitting Strategies*
 Student: Robert Brad Taylor
 Practitioner: Kim Sass of EnSafe, Inc.
 Faculty Advisor: Dr. L. Yu Lin, P.E.
- *2002 ASCE Concrete Canoe*
 Student: Rebecca Ann Bailey
 Practitioner: Marshal Davis of Pickering Firm
 Faculty Advisor: Mr. Fred Sock



ME Projects:

- *Analytical and Physical Models of Powered Surgical Instrumentation*
 Student: Katherine Logerot
 Sponsor: Gyrus ENT
 Faculty Advisor: Dr. Bernard Beard
- *Standard Outer Case Lid Latch Handle Redesign*
 Student: William J. Gibson
 Sponsor: Smith + Nephew
 Faculty Advisor: Dr. Denise Roberts
- *Springback Compensation for Sheet Metal Bending*
 Student: Charles Edward Stevens
 Sponsor: Christian Brothers University
 Faculty Advisor: Dr. Bernard Beard
- *Axial Saw Guide for Cats and Dogs*
 Student: Matthew Roland Kerchoff
 Sponsor: North Central Tool
 Faculty Advisor: Dr. Paul Shiue
- *NASA's Great Moon Buggy Race: Alpha 3*
 Students: Marco Dagoberto Capote, Garrett Dee Wayne Martin, and Kristofer Keith Westbrook
 Sponsors: Ellers, Oakley, Chester and Rike, Inc., EMJ, Franklin Electrofluid, Kele and Associates, Medtronic Sofamor Danek,

- Southern Fabricators, and Time Warner
Faculty Advisors: Drs. Bernard Beard & Paul Shiue
- *Spondylolisthesis Instrumentation*
Student: Alan Rezach
Sponsor: Medtronic Sofamor Danek
Faculty Advisor: Dr. Denise Roberts
 - *Cardiopulmonary Resuscitator Development and Design*
Students: Michael Walter Brunjes and Jason John Diniz
Sponsor: NewAir Manufacturing
Faculty Advisor: Dr. Mark Driver

Congratulations to the following ASCE Student Chapter's elected officers for 2002-2003:

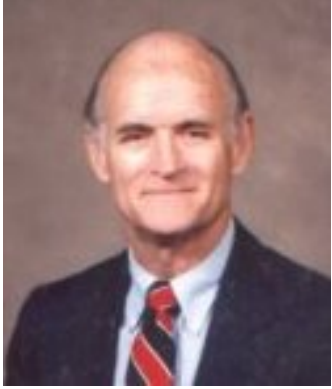
President: **Josh Giannini**
Vice President: **Erik Weghorst**
Secretary: **Melissa Johnson**
Treasurer: **Kristin Teague**
Fundraising/5K Run: **Pete Hall** and **Heather Smith**
Conference Chair/Service: **Nathan Luce**

Attention Students! If you have not visited the Engineering Excellence Awards Project Posters Exhibit, it will be on the 3rd Floor of the Plough Library until April 12, 2002.



EEA Project Posters Exhibit

FACULTY/STAFF NEWS



Dr. Robert Drake, P. E.

Dr. Robert Drake, P.E. (ECE) presented a paper entitled "Some Implementation Results and System Effects of Power Electronic Speed Control of Three-Phase AC Motors in Closed-Loop Operation" at the 2002 Southeastern Symposium on Systems Theory. The paper, co-authored by A. Howard, and J. Ventura, reports hardware implementation and simulation results at CBU and suggests an area of future investigation in electronic speed control of AC motors. The paper was published in the symposium proceedings.

A paper entitled "Development of a Bachelor of Science Degree in Engineering Management with a Concentration in Construction Management at Christian Brothers University" was recently published in the *Proceedings of the 2001 ASEE Southeast Section Conference*. The paper was authored by **Mr. Gene McGinnis** (CEE Department Chairman), **Dr. Neal Jackson** (MEM Director), and **Dr. Siripong Malasri** (Dean). The paper discussed a possibility of having a new degree program which would take advantage of the strengths of the existing Engineering Management graduate program and the Civil & Environmental Engineering undergraduate program. This is one area in which the school might take in the future. The conference proceedings can be found on-line at <http://www.ce.clemson.edu/ASEE%20Proceedings/ASEE2001/ASEE2001SE.htm>.

Dr. Siripong Malasri, P.E. (Dean) co-authored an article entitled "Java Applets for Teaching Neural Networks." The article appears in the *Computers in Education Journal*, Vol. XII, No. 1, January - March 2002. The applets were used in an ECE course last fall and can be found at <http://www.cbu.edu/~pong/ai>. Dr. Malasri also served as a judge for the 2002 Engineering Excellence Awards, hosted each year by the Consulting Engineers of Tennessee. Other judges were Allan Long (Supervisor, Electrical Distribution Engineering at MLGW and in-coming President of the Tennessee Society of Professional Engineers), Jeanette D. Blazier (Mayor of Kingsport), Judith Tackett (Reporter at the Nashville's City Paper), Jane Moore (Manager of Remediation & Environmental Affairs, Bridgestone/Firestone Americas Holding), and Kingsley Brock (Deputy Commissioner, TN Department of Economic & Community Development).