PI TAU SIGMA ANNUAL CHAPTER REPORT

2011-2012

University of Florida

Florida Sigma Omicron

A. Initiations

Initiates are chosen from the top 35% of students in the mechanical engineering department who are in their third year or have the equivalent 90 credits. These eligible candidates are contacted by the current vice president and are informed of their selection and invited to an introductory meeting. Our chapter receives the list of candidates during the first month of the semester from the Mechanical and Aerospace Engineering department.

Candidates who attend the introductory meeting are briefed by the current officers with a slideshow on Pi Tau Sigma and told how the members interact amongst themselves and with the engineering community as a whole. Officers introduce themselves and describe their roles in the chapter. All candidates who attend the introductory meeting, who attend events, or who send an email of interest are recorded and have their attendance throughout the semester recorded.

Initiates are required to go to six events over the course of the semester, but are encouraged to attend more and socialize with the other members and initiates. They must attend: one Pi Tau Sigma sponsored lab tour, company information session, or related activity; one service project; one fundraising event; one chapter social; the end of the semester Kick-Ball game, usually placing the officers against the initiates in a fun way to end the semester; and the initiation ceremony. Initiation is mandatory and is usually held a week before final exams. If an initiate cannot attend a certain event and would like to substitute another, e.g., an initiate cannot attend the last service event of the semester and instead wants to attend two lab tours; they must obtain permission from the president, vice president, or the membership chair. A one-time dues payment is required before the initiation ceremony. If any of the requirements are not met or if the initiate cannot attend the initiation ceremony, they must wait until next semester to be initiated, assuming they are still eligible. When an initiate pays their dues, they receive a Pi Tau Sigma bent. Initiates are encouraged to polish their bents. At initiation, the initiate who has the best looking bent, as voted by the officers, receives a prize.

The initiation ceremony follows tradition. Initiates are brought into a room with the current officers at the front of the room. A table decorated with Pi Tau Sigma coat of arms and other memorabilia is in the middle of the room, if a table is available. The president and vice president follow the Pi Tau Sigma initiation handbook and describe the coat of arms and the values of Pi Tau Sigma. Once the initiates pledge to uphold the ASME code of ethics, they are congratulated and welcomed as members. To signify this, they are taught the chapter's secret handshake and each initiate shakes hands with the officers.

At the end of the spring semester's initiation, officer elections are held. All members, including those who were just initiated, can run for a position. Only current officers can run for the president and vice president offices.

Our chapter held two initiations this year. The fall initiation was held on Thursday, December 8th and saw seven new members added to the Sigma Omicron chapter. The spring initiation was held on Friday, April 27th and saw seven new members as well. Of these new members, eight of them ran and were elected to be officers for the next academic year. The seven leaving officers welcomed and congratulated the new officers.

B. Chapter Activities

The Sigma Omicron chapter is part of many activities and events that promote involvement in the mechanical engineering department and that introduce students to excellent opportunities for their future. The chapter allows for the members and initiates to work with high-achieving students from the other engineering societies network with professors to gain research opportunities as well as members from industry to gain internships and full-time jobs. More importantly though, our chapter gave back to the department and community by providing mentoring, tutoring and hours of community service work.

Community Service

Our chapter organized a service event with the Ocala Habitat for Humanity organization. This work site is located approximately 45 minutes from campus where they are currently finishing the building of five houses. Nine of the officers and members volunteered for five hours in late April. Work consisted of site clean up, exterior wall insulation, and roughing of the roof. We worked closely with a "golden hammer" named Hank, a retired mechanical engineer at Pratt and Whittney, UF mechanical engineer graduate from the 1960's and also a fellow Pi Tau Sigma member, who supervised the build progress. Within the five hours, the group was able to clean up all of the trash from the site, finish all of the insulation, and install and nail down one half of a roof. Hank said out of all of his time volunteering, we were one of the best groups to come through the organization. With the strong bonds formed with the Habitat for Humanity organizations due to our contributions, we will continue to work through out the summer and into the next school year.

Community service events are also collaboration with the other engineering societies. One such collaboration is GatorTRAX, a program that introduces many engineering related skills and ideas to elementary, middle and high school students. The Sigma Omicron chapter works together with the Florida chapter of Tau Beta Pi in teaching these young minds new concepts. Officers and members explain to the students, through physical examples, basic concepts of physics, such as velocity and acceleration. This past year, our chapter increased our roll with the program by acting as host for the mechanical engineering weekend of GatorTRAX. In previous years, Pi Tau Sigma only provided members to help support the projects. This year, the officers were responsible for planning the schedule of events, purchasing all the required supplied, and then organizing the volunteer groups, and overseeing the build projects. The project selected for this year was for the kids to build bridges using toothpicks as the trusses and then using gum drops as the joints. There were approximately six Pi Tau Sigma officers and initiates working the event as well as the Tau Beta Pi volunteers. Over 50 kids participated in the event. Another collaboration is SECME, which is a strategic alliance to renew and strengthen the professional capacity of young educators, motivate and mentor students and empower parents so that all students can learn and achieve at higher levels. At SECME, students participate in fun activities, such as an egg drop and building a mousetrap car.

The annual E-Fair is a well-recognized event at the University of Florida. At the E-Fair, engineering groups from all departments come out and demonstrate the fundamental ideas of their core learning to elementary and middle school students, as well as faculty, visiting alumni and fellow students. The Pi Tau Sigma display this year demonstrated how pressure decreasing rapidly in a closed volume could cause force. Several plastic water bottles were opened and designed to look like miniature cars. Wooden spokes and Styrofoam wheels were used to make the bottles mobile. Inflatable balloons were wrapped around sets of three drinking straws and taped to create a seal. The straw-balloon combinations were placed in the bottle cars, whilst holding the end of the straws shut to prevent air leaking. Upon release, the cars pushed away from the direction of airflow and raced along a makeshift track. The car that traveled the furthest won a candy prize. Depending on the position of the straw-balloon combination or how full the balloon was changed the path the bottle car would take and how fast it would go. Eight of the spring 2012 initiates and all of the officers provided the aid to all of the students as they worked on their car design. Hundreds of students came through during the two day event to play with the cars and of course, enjoy the candy.

Departmental Service

The Undergraduate Research Poster Symposium is an annual event in which undergraduate students can share their research with faculty, students and other notable members of the alumni board. This event is coordinated with the UF Mechanical and Aerospace Department annual awards banquet. Invitations for the symposium are sent out through the department undergraduate listserve. All interested undergraduates receive a PowerPoint poster template were the students will describe their research topic, giving background, problem statement, current and future work. Once all of the posters are completed and returned, the officers print out and laminate the posters for the students. During the day of the awards banquet, the ballroom is prepared with the printed posters. A board of department professors and alumni speaks with each of the participations and judges their presentation and poster. This semester, nine students participated in the event. The three of the top presenters were awarded and given the opportunity to attend the awards banquet dinner.

Several of our chapter's officers attended the annual Mechanical and Aerospace Engineering Department Banquet at the University of Florida. These officers represented our chapter and presented awards to distinguished guests. The Pi Tau Sigma National Convention was attended by four of our officers and one member. Several of the Pi Tau Sigma members were also honored during the event. The Sigma Omicron President was honored as the 2011-2012 Outstanding Senior Award for the Mechanical and Aerospace Department. The Sigma Omicron Treasurer was awarded the Knox T. Millsaps Memorial Scholarship. A Sigma Omicron member was honored as the University of Florida College of Engineering Outstanding Leadership Award for the graduating class of 2012.

With close to 2500 undergraduate students in the Mechanical and Aerospace Department at the University of Florida, the Engineering Statics course contains a large number of students, especially this year as the course transitioned into an online with an optional in-person lecture. Due to the importance of these core fundamentals towards the success of future mechanical engineering students, the Sigma Omicron chapter started Statics exam reviews. The Statics course consists of three exams covering the basics from introductory vectors to virtual work. These topics and all of the topics in-between can be difficult for students new to the subject to understand. So two of the officers provided reviews were students could as questions on the fundamentals and practice problems, and the officers explained from the eyes of a student. All of the reviews were highly successful with 80 to 100 students attending. After each of the exams, students were extremely grateful for the time and effort put into the reviews.

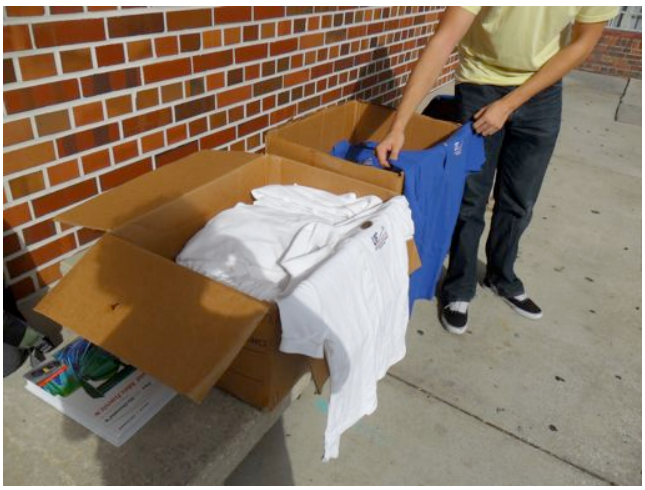
Social Events

This year, the Sigma Omicron chapter brought together other engineering societies of AIAA, ASME, and Tau Beta Pi by hosting the first annual MAE kickball tournament. A little friendly competition along with plenty of food and drinks is always a fun time for all of the members to get to know each other. The tournament was played on the intermural softball fields on campus and consists of three rounds of playoff style double elimination. Around 40 members for all of the clubs participated in the event in each semester. The first tournament in the fall was soundly taken by the Sigma Omicron chapter after beating Tau Beta Pi by double digits in both rounds. The second tournament in the spring came down to extra innings as the ASME chapter knocked off the PTS team. A plaque displays the winners of each of the semester events and hopefully interest in the event will continue.

In addition, our chapter holds many social events for the members. Our social events range from frozen yogurt at the local Mochi frozen yogurt to laser tag. These events are always well attended by members, officers and initiates. This academic year in particular, our socials were lauded as being very fun and enjoyable. Initiates attending these socials are given the chance to personally find out who their officers are and have a great time. The end of the semester Kick-Ball game is another great social event for the initiates to get an opportunity to beat the officers who they have worked with all semester. This past spring, due to weather the Kick-Ball game could not be held and was replaced by a round of pocket billiards. This was equally enjoyed.

Fundraisers

Our largest fundraiser is through the department polo sale. The department donates the funds for the Sigma Omicron chapter to purchases the polos through a local design company. Thus, all of the profits raises in the sales are used to fund all of the events through out the semesters. These polo consist of the UF Gator Engineering logo and have the words Mechanical and Aerospace department under the logo. Students purchase theses polos to wear to info sessions and during internships. Recently, we have expanded our selection to both boys and girls polos in both white and blue colorations.



In addition to the polo sales, our chapter has also created our first chapter Pi Tau Sigma shirts for all of the members. We sell these t-shirts at a low price, just enough to cover the cost to have them manufactured, so that it's not a financial burden for the members to purchase. So far the sales have been great and even graduated members are interested in purchasing the t-shirts.

National Convention

This spring, the Sigma Omicron chapter sent five members consisting of one graduating officer, three returning officer, and one member who is now a officer for the next school year. All of the attending members enjoyed the experience and brought back ideas which will help with grow the chapter at UF. The members participated in all of the event and attending the career showcase event.

Member Communication and Meetings

Members of the Sigma Omicron chapter receive email updates of events happening in the local mechanical engineering department. Graduate students and professors contact our advisor and ask for any Pi Tau Sigma members who are interested in working in research workshops or labs. Members are invited to seminars and department lectures being held by professors and those working in the mechanical engineering field. Our officers arrange tours of engineering professors' laboratories that are open to all members and initiates. These laboratory tours are a great way for members to meet professors and have a chance to talk to them about research opportunities.

The Sigma Omicron chapter holds meetings every five weeks in the fall and spring semesters. With recent construction completed, more meetings are planned for the coming academic year due to easy access to a conference room. At least once a week, members can expect to see an email from our chapter about the latest events happening in the mechanical engineering department.