Engineering Student Technology Committee  
March 23, 2006

Electronic Classroom, 8:00am

Present: Scott Chase (ME), Prof. Tom Chen (ECE), Laura Ciasto (Atmos), Tricia Dize (intra), 
Klaus Hartinger (ECE), Kelley Johnson (Atmos), Amanda Kaiser, chair (ME),
Brian Lee (intra), Scott Lynn(CBE), Evan Mueller (CBE), Mark Ritschard (ENS),
Audrey Twiford (ME)

Absent: Prof. David Alciatore (ME), Prof. Antonio Carraro (CE), Prof. Jeff Collett (Atmos),
Mike Floren (CBE), Henrik Forsling (CE), Kendra Gabbert (CE), Heidi Shray (ECE),
Dr. Tom Siller (Academic Affairs), Prof. David Wang (CBE),
unfilled - undergraduate (Civil), unfilled - undergraduate (ECE)

- Introductions
  Kaiser opened the meeting with introductions and an overview of today's meeting.

- Review of Minutes from Meetings of 3/2/06 & 3/9/06
  Minutes from both meetings were approved as written.

- 2006-2007 Budget & Charge
  Ritschard presented an overview of the current budget and each major category per the
  spreadsheet distributed after last week's meeting. The committee started with the "Server
  Maintenance and Support" category and Ritschard provided an overview of each service.
  Discussion focused on whether all services need to be on a four year replacement cycle and Ritschard agreed that longer cycles could be utilized for some services. Hartinger then moved, and Mueller seconded, that the "Server Maintenance and Support" budget be set at $85,000. The motion passed unanimously.

  The committee then reviewed the lab equipment spreadsheet in detail and Ritschard presented the changes proposed by ENS staff. Chase moved, and Lynn seconded, that the life cycle for all monitors be increased to 5 years. The motion passed unanimously. This was the only change made to the Computer Lab Equipment Replacement budget as proposed by ENS, setting it at $120,000.

  As a result of the changes made above, an additional $16,000 became available. Based on previous discussions on the importance of these funds for the departments, Hartinger moved, and Chase seconded, that the department allocation remain at $135,000 as it was last year and that the remaining funds be placed in Strategic Initiatives. The motion passed unanimously.

  There was also discussion on whether to raise the charge above $142 per semester. However, in the absence of major projects, the committee felt increasing the charges was not justified. Hartinger then moved, and Chase seconded, that the budget be accepted as discussed so far. It was approved with one abstention. The approval set next year's budget at $460,000, with no change in the semester charge, as follows:
<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistive Technology</td>
<td>$2,000</td>
</tr>
<tr>
<td>Business Expenses</td>
<td>$1,000</td>
</tr>
<tr>
<td>Central Services &amp; Systems</td>
<td></td>
</tr>
<tr>
<td>Computer Lab Equip. Replacement</td>
<td>$120,000</td>
</tr>
<tr>
<td>Laboratory Maintenance</td>
<td>$31,000</td>
</tr>
<tr>
<td>Network Maintenance</td>
<td>$6,000</td>
</tr>
<tr>
<td>Server Maintenance &amp; Support</td>
<td>$85,000</td>
</tr>
<tr>
<td>Student Wages</td>
<td>$65,000</td>
</tr>
<tr>
<td>Department Allocations</td>
<td></td>
</tr>
<tr>
<td>Atmospheric Science</td>
<td>$20,000</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>$19,200</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>$33,400</td>
</tr>
<tr>
<td>Electrical &amp; Computer Engr.</td>
<td>$16,800</td>
</tr>
<tr>
<td>Intra-departmental majors</td>
<td>$5,000</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>$40,600</td>
</tr>
<tr>
<td>Strategic Initiatives</td>
<td>$15,000</td>
</tr>
</tbody>
</table>

The next meeting will be on a Thursday in April, to be announced by Kaiser, at 8:00am in the Electronic Classroom. The meeting adjourned at 9:10am.

Respectfully submitted,
Mark Ritschard
## Charges for Technology

### College of Engineering

**Budget Planning for Fiscal Year 2007**

<table>
<thead>
<tr>
<th>FY06</th>
<th>Proposed FY07</th>
<th>Diff. from FY06</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assistive Technology</strong></td>
<td>$2,000</td>
<td>$2,000</td>
</tr>
<tr>
<td><strong>Business Expenses</strong></td>
<td>$0</td>
<td>$1,000</td>
</tr>
<tr>
<td><strong>Central Services &amp; Systems</strong></td>
<td>$334,000</td>
<td>$307,000</td>
</tr>
<tr>
<td>Computer Lab Equip. Replacement</td>
<td>$165,000</td>
<td>$120,000</td>
</tr>
<tr>
<td>Laboratory Maintenance</td>
<td>$23,000</td>
<td>$31,000</td>
</tr>
<tr>
<td>Network Maintenance</td>
<td>$6,000</td>
<td>$6,000</td>
</tr>
<tr>
<td>Server Maintenance &amp; Support</td>
<td>$70,000</td>
<td>$85,000</td>
</tr>
<tr>
<td>Student Wages</td>
<td>$70,000</td>
<td>$65,000</td>
</tr>
<tr>
<td><strong>Department Allocations</strong></td>
<td>$135,000</td>
<td>$135,000</td>
</tr>
<tr>
<td>Atmospheric Science</td>
<td>$20,000</td>
<td>$20,000</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>$19,700</td>
<td>$19,200</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>$31,800</td>
<td>$33,400</td>
</tr>
<tr>
<td>Electrical &amp; Computer Engineering</td>
<td>$17,500</td>
<td>$16,800</td>
</tr>
<tr>
<td>Intra-departmental majors</td>
<td>$5,000</td>
<td>$5,000</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>$41,000</td>
<td>$40,600</td>
</tr>
<tr>
<td><strong>Strategic Initiatives</strong></td>
<td>$24,000</td>
<td>$15,000</td>
</tr>
<tr>
<td>New Academic Village Equipment</td>
<td>$10,000</td>
<td></td>
</tr>
<tr>
<td>Security Cameras</td>
<td>$6,000</td>
<td></td>
</tr>
<tr>
<td>Unallocated</td>
<td>$8,000</td>
<td>$15,000</td>
</tr>
</tbody>
</table>

**Budget: $495,000**  **$460,000**

### Actual/Projected Tech Charge Revenue

- **$460,000**

**Per semester:**

- **current charge 142.00 $460,000**
- **proposed charge 142.00 0.0% $460,000**
- **$0**

**Budget Approved by Engineering Student Technology Committee on 3/23/06**
## Actual Lab Equipment

<table>
<thead>
<tr>
<th>Cost</th>
<th>life cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,500</td>
<td>4</td>
</tr>
<tr>
<td>3,000</td>
<td>4</td>
</tr>
<tr>
<td>6,000</td>
<td>6</td>
</tr>
<tr>
<td>1,100</td>
<td>4</td>
</tr>
<tr>
<td>400</td>
<td>5</td>
</tr>
<tr>
<td>350</td>
<td>5</td>
</tr>
<tr>
<td>225</td>
<td>5</td>
</tr>
<tr>
<td>1,100</td>
<td>4</td>
</tr>
<tr>
<td>900</td>
<td>4</td>
</tr>
<tr>
<td>125</td>
<td>4</td>
</tr>
<tr>
<td>1,750</td>
<td>4</td>
</tr>
<tr>
<td>2,800</td>
<td>4</td>
</tr>
<tr>
<td>6,000</td>
<td>5</td>
</tr>
<tr>
<td>1,600</td>
<td>5</td>
</tr>
</tbody>
</table>

### Allison Hall
- Computers: 60
- UNIX compute workstations: 35
- Thin clients: 24
- 19" flat panel display: 21
- 21" Trinitron monitor: 5
- B/W laser printer: 3
- Color laser printer: 3
- 36" color plotter: 3
- 60" color plotter: 3
- Regular scanners: 3
- Large format scanners: 1
- Photo scanners: 2
- Digital senders: 1
- Projectors: 5
- Plasma displays: 4
- Smart boards: 1
- Equip. value: $5,625
- Life cycle: 4 yrs
- Annual rep. cost: $1,472

### Anderson Lab
- Computers: 5
- UNIX compute workstations: 0
- Thin clients: 0
- 19" flat panel display: 0
- 21" Trinitron monitor: 0
- B/W laser printer: 0
- Color laser printer: 0
- 36" color plotter: 0
- 60" color plotter: 0
- Regular scanners: 0
- Large format scanners: 0
- Photo scanners: 0
- Digital senders: 0
- Projectors: 0
- Plasma displays: 0
- Smart boards: 0
- Equip. value: $15,625
- Life cycle: 4 yrs
- Annual rep. cost: $3,367

### BC Infill (Lounge)
- Computers: 4
- UNIX compute workstations: 0
- Thin clients: 0
- 19" flat panel display: 0
- 21" Trinitron monitor: 0
- B/W laser printer: 0
- Color laser printer: 0
- 36" color plotter: 0
- 60" color plotter: 0
- Regular scanners: 0
- Large format scanners: 0
- Photo scanners: 0
- Digital senders: 0
- Projectors: 0
- Plasma displays: 0
- Smart boards: 0
- Equip. value: $6,000
- Life cycle: 5 yrs
- Annual rep. cost: $1,333

### Design Studio
- Computers: 12
- UNIX compute workstations: 0
- Thin clients: 0
- 19" flat panel display: 0
- 21" Trinitron monitor: 0
- B/W laser printer: 0
- Color laser printer: 0
- 36" color plotter: 0
- 60" color plotter: 0
- Regular scanners: 0
- Large format scanners: 0
- Photo scanners: 0
- Digital senders: 0
- Projectors: 0
- Plasma displays: 0
- Smart boards: 0
- Equip. value: $138,250
- Life cycle: 4 yrs
- Annual rep. cost: $30,877

### Technical Shop
- Computers: 1
- UNIX compute workstations: 0
- Thin clients: 0
- 19" flat panel display: 0
- 21" Trinitron monitor: 0
- B/W laser printer: 0
- Color laser printer: 0
- 36" color plotter: 0
- 60" color plotter: 0
- Regular scanners: 0
- Large format scanners: 0
- Photo scanners: 0
- Digital senders: 0
- Projectors: 0
- Plasma displays: 0
- Smart boards: 0
- Equip. value: $8,000
- Life cycle: 5 yrs
- Annual rep. cost: $1,756

### Electronic Classroom
- Computers: 24
- UNIX compute workstations: 0
- Thin clients: 0
- 19" flat panel display: 0
- 21" Trinitron monitor: 0
- B/W laser printer: 0
- Color laser printer: 0
- 36" color plotter: 0
- 60" color plotter: 0
- Regular scanners: 0
- Large format scanners: 0
- Photo scanners: 0
- Digital senders: 0
- Projectors: 0
- Plasma displays: 0
- Smart boards: 0
- Equip. value: $41,900
- Life cycle: 4 yrs
- Annual rep. cost: $9,353

### ERC lab
- Computers: 11
- UNIX compute workstations: 0
- Thin clients: 0
- 19" flat panel display: 0
- 21" Trinitron monitor: 0
- B/W laser printer: 0
- Color laser printer: 0
- 36" color plotter: 0
- 60" color plotter: 0
- Regular scanners: 0
- Large format scanners: 0
- Photo scanners: 0
- Digital senders: 0
- Projectors: 0
- Plasma displays: 0
- Smart boards: 0
- Equip. value: $14,400
- Life cycle: 4 yrs
- Annual rep. cost: $3,600

### GIS lab
- Computers: 24
- UNIX compute workstations: 0
- Thin clients: 0
- 19" flat panel display: 0
- 21" Trinitron monitor: 0
- B/W laser printer: 0
- Color laser printer: 0
- 36" color plotter: 0
- 60" color plotter: 0
- Regular scanners: 0
- Large format scanners: 0
- Photo scanners: 0
- Digital senders: 0
- Projectors: 0
- Plasma displays: 0
- Smart boards: 0
- Equip. value: $51,950
- Life cycle: 4 yrs
- Annual rep. cost: $11,631

### Internet Cafe
- Computers: 3
- UNIX compute workstations: 0
- Thin clients: 0
- 19" flat panel display: 0
- 21" Trinitron monitor: 0
- B/W laser printer: 0
- Color laser printer: 0
- 36" color plotter: 0
- 60" color plotter: 0
- Regular scanners: 0
- Large format scanners: 0
- Photo scanners: 0
- Digital senders: 0
- Projectors: 0
- Plasma displays: 0
- Smart boards: 0
- Equip. value: $47,000
- Life cycle: 4 yrs
- Annual rep. cost: $10,508

### Loaner pool
- Computers: 6
- UNIX compute workstations: 0
- Thin clients: 0
- 19" flat panel display: 0
- 21" Trinitron monitor: 0
- B/W laser printer: 0
- Color laser printer: 0
- 36" color plotter: 0
- 60" color plotter: 0
- Regular scanners: 0
- Large format scanners: 0
- Photo scanners: 0
- Digital senders: 0
- Projectors: 0
- Plasma displays: 0
- Smart boards: 0
- Equip. value: $14,400
- Life cycle: 4 yrs
- Annual rep. cost: $3,600

### MEReC
- Computers: 5
- UNIX compute workstations: 0
- Thin clients: 0
- 19" flat panel display: 0
- 21" Trinitron monitor: 0
- B/W laser printer: 0
- Color laser printer: 0
- 36" color plotter: 0
- 60" color plotter: 0
- Regular scanners: 0
- Large format scanners: 0
- Photo scanners: 0
- Digital senders: 0
- Projectors: 0
- Plasma displays: 0
- Smart boards: 0
- Equip. value: $25,800
- Life cycle: 4 yrs
- Annual rep. cost: $5,783

### Total
- Computers: 114
- UNIX compute workstations: 42
- Thin clients: 49
- 19" flat panel display: 87
- 21" Trinitron monitor: 51
- B/W laser printer: 102
- Color laser printer: 90
- 36" color plotter: 65
- 60" color plotter: 33
- Regular scanners: 21
- Large format scanners: 11
- Photo scanners: 7
- Digital senders: 2
- Projectors: 6
- Plasma displays: 1
- Smart boards: 1
- Equip. value: $634,550
- Life cycle: 4 yrs
- Annual rep. cost: $71,784
### Charges for Technology

**College of Engineering**

**Server Maintenance & Support**

**Budget Calculation for FY07**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Server</th>
<th>Student share</th>
<th>Cost to Replace</th>
<th>Student Cost (covered by Lab Equipment Replacement Budget)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backup</td>
<td>Snoopy</td>
<td>53%</td>
<td>8,000</td>
<td>4,206</td>
</tr>
<tr>
<td>Backup</td>
<td>Backup Tape Library</td>
<td>53%</td>
<td>75,000</td>
<td>39,427</td>
</tr>
<tr>
<td>Card Reader Servers</td>
<td>doorlock servers</td>
<td>100%</td>
<td>7,000</td>
<td>7,000</td>
</tr>
<tr>
<td>Compute Servers</td>
<td>Proposed to Replace UNIX</td>
<td>82%</td>
<td>120,000</td>
<td>97,806</td>
</tr>
<tr>
<td>Domain Servers (Accounts, DHCP, licenses)</td>
<td>Luke, etc.</td>
<td>82%</td>
<td>22,000</td>
<td>17,931</td>
</tr>
<tr>
<td>Electronic Mail</td>
<td>Goku</td>
<td>82%</td>
<td>8,000</td>
<td>6,520</td>
</tr>
<tr>
<td>Faculty &amp; Staff U: &amp; V: drives</td>
<td>Gohan</td>
<td>0%</td>
<td>15,000</td>
<td>0</td>
</tr>
<tr>
<td>Print Quota Servers</td>
<td>Cerebrus</td>
<td>100%</td>
<td>3,000</td>
<td>3,000</td>
</tr>
<tr>
<td>Project Space (T:\projects)</td>
<td>Gohan</td>
<td>50%</td>
<td>20,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Student U: drives &amp; T:\classes</td>
<td>BlueStore</td>
<td>100%</td>
<td>80,000</td>
<td>80,000</td>
</tr>
<tr>
<td>Sun Ray server</td>
<td>Sunfire</td>
<td>97%</td>
<td>40,000</td>
<td>38,667</td>
</tr>
<tr>
<td>Sun Ray Windows servers</td>
<td>Thin1, etc.</td>
<td>97%</td>
<td>90,000</td>
<td>87,000</td>
</tr>
<tr>
<td>Virtual Lab servers</td>
<td>Vlab1, etc.</td>
<td>100%</td>
<td>63,000</td>
<td>63,000</td>
</tr>
<tr>
<td>Web server</td>
<td>Sunbeam</td>
<td>82%</td>
<td>8,000</td>
<td>6,520</td>
</tr>
<tr>
<td>UPS</td>
<td>N/A</td>
<td>77%</td>
<td>40,000</td>
<td>30,700</td>
</tr>
</tbody>
</table>

**Total Student Replacement Cost** 366,110

**Annual Cost for four-year cycle** 91,527

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>graduate students</strong></td>
<td>534</td>
<td>27%</td>
<td>536</td>
<td>28%</td>
<td>563</td>
<td>28%</td>
</tr>
<tr>
<td><strong>undergraduate students</strong></td>
<td>1,409</td>
<td>73%</td>
<td>1,358</td>
<td>72%</td>
<td>1,459</td>
<td>72%</td>
</tr>
<tr>
<td><strong>total students</strong></td>
<td>1,943</td>
<td>82%</td>
<td>1,894</td>
<td>81%</td>
<td>2,022</td>
<td>82%</td>
</tr>
<tr>
<td><strong>Faculty &amp; Staff</strong></td>
<td>441</td>
<td>18%</td>
<td>448</td>
<td>19%</td>
<td>451</td>
<td>18%</td>
</tr>
<tr>
<td><strong>total people</strong></td>
<td>2,384</td>
<td>18%</td>
<td>2,342</td>
<td>19%</td>
<td>2,473</td>
<td>18%</td>
</tr>
</tbody>
</table>

**Backups**
The student share of backup costs reflect the actual student portion of all data backed up

**Sun Ray services**
The student share of backup costs reflect the actual student portion of all data backed up

| Total Sun Rays | 145 | 97% | 120 existing, plus 25 proposed |
|Sun Rays used by Faculty & Staff | 5 | 3% |
|**Total Sun Rays** | **150** |

**Cost of Sun Ray servers** 125,667

cost per Sun Ray 838
### Department Allocations

#### Budget Calculation for FY07

**1898 Students enrolled in the College of Engineering in AY06**

<table>
<thead>
<tr>
<th>Major</th>
<th>Students</th>
<th>% by Major</th>
<th>% by Dept</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmos</td>
<td>91</td>
<td>4.77%</td>
<td>4.77%</td>
<td>317.8%</td>
</tr>
<tr>
<td>ChemE</td>
<td>122</td>
<td>6.40%</td>
<td>6.40%</td>
<td>1019.9%</td>
</tr>
<tr>
<td>CE</td>
<td>478</td>
<td>25.16%</td>
<td>28.47%</td>
<td>3599.8%</td>
</tr>
<tr>
<td>Bio &amp; Ag</td>
<td>5</td>
<td>0.32%</td>
<td>0.32%</td>
<td>20.50%</td>
</tr>
<tr>
<td>Civil</td>
<td>472</td>
<td>24.85%</td>
<td>30.10%</td>
<td>3599.8%</td>
</tr>
<tr>
<td>ECE</td>
<td>80</td>
<td>4.22%</td>
<td>21.53%</td>
<td>53.2%</td>
</tr>
<tr>
<td>Electrical</td>
<td>305</td>
<td>16.07%</td>
<td>37.72%</td>
<td>6665.5%</td>
</tr>
<tr>
<td>Intra-departmental</td>
<td>66</td>
<td>3.48%</td>
<td>9.99%</td>
<td>12.20%</td>
</tr>
<tr>
<td>Biomedical</td>
<td>66</td>
<td>3.48%</td>
<td>9.99%</td>
<td>12.20%</td>
</tr>
<tr>
<td>Engineering</td>
<td>1</td>
<td>0.05%</td>
<td>0.05%</td>
<td>0.52%</td>
</tr>
<tr>
<td>Engineering Science</td>
<td>70</td>
<td>3.66%</td>
<td>30.10%</td>
<td>39.87%</td>
</tr>
<tr>
<td>Environmental Engine</td>
<td>53</td>
<td>2.79%</td>
<td>39.87%</td>
<td>39.87%</td>
</tr>
<tr>
<td>ME</td>
<td>599</td>
<td>31.54%</td>
<td>35.69%</td>
<td>599.9%</td>
</tr>
<tr>
<td>Open</td>
<td>31</td>
<td>1.63%</td>
<td>1.63%</td>
<td>1.72%</td>
</tr>
</tbody>
</table>

*average enrollment of fall and spring semesters*

#### Lab Management Software Maintenance TOTAL

<table>
<thead>
<tr>
<th>Department</th>
<th>Lab Management</th>
<th>Software</th>
<th>Maintenance</th>
<th>TOTAL</th>
<th>Allocation</th>
<th>Maint by %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmos</td>
<td>$11,159.92</td>
<td>$3,063.35</td>
<td>5,000</td>
<td>$20,000.00</td>
<td>$19,223.26</td>
<td>1,680.96</td>
</tr>
<tr>
<td>ChemE</td>
<td>$16,348.64</td>
<td>$12,039.08</td>
<td>5,000</td>
<td>$33,387.72</td>
<td>$33,400.00</td>
<td>6,606.25</td>
</tr>
<tr>
<td>CE</td>
<td>$2,000.00</td>
<td>$9,807.75</td>
<td>5,000</td>
<td>$16,807.75</td>
<td>$16,800.00</td>
<td>5,381.85</td>
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<tr>
<td>ECE</td>
<td>$20,491.44</td>
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<td>Intra</td>
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<td>5,000</td>
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<td>$15,000.00</td>
<td>3,050.64</td>
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<tr>
<td>ME</td>
<td>$41,000</td>
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<td>50,000</td>
<td>155,000.00</td>
<td>155,000.00</td>
<td>25,000.00</td>
</tr>
</tbody>
</table>

**1677 students in the 5 departments**

<table>
<thead>
<tr>
<th>Major</th>
<th>Students</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmos</td>
<td>91</td>
<td>5.40%</td>
</tr>
<tr>
<td>ChemE</td>
<td>122</td>
<td>7.25%</td>
</tr>
<tr>
<td>CE</td>
<td>478</td>
<td>28.47%</td>
</tr>
<tr>
<td>ECE</td>
<td>389</td>
<td>23.20%</td>
</tr>
<tr>
<td>ME</td>
<td>599</td>
<td>35.69%</td>
</tr>
</tbody>
</table>

**1587 students in ChemE, CE, ECE, and ME**

<table>
<thead>
<tr>
<th>Major</th>
<th>Students</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmos</td>
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<tr>
<td>ECE</td>
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</tr>
<tr>
<td>ME</td>
<td>599</td>
<td>35.69%</td>
</tr>
</tbody>
</table>

**1198 students in ChemE, CE, and ME**

<table>
<thead>
<tr>
<th>Major</th>
<th>Students</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmos</td>
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</tr>
<tr>
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<td>599</td>
<td>35.69%</td>
</tr>
</tbody>
</table>

*average enrollment of fall and spring semesters*