# Advanced Technology Division
## *Unit Plan for FY 2008*

## Section I: Data Elements

### Student Success Data

Course completion rates
Course withdrawal rates
Student success rates

### Operating Data

Student FTE by subject and course
Student FTE/Faculty FTE ratios
Expenditures per unit (annual)
Cost-per-FTE by subject
Revenue per unit
FTE target for disciplines
Expected budget to work within
Student FTE by division (4-year history)

## Advanced Technology Division - FY06 Student Success/Retention

| Program | Enroll | Success | Complete | Withdraw | Completion Rate | Success Rate |
|---|---|---|---|---|---|---|
| AB | 184 | 165 | 182 | 2 | 98.9% | 89.7% |
| AT | 218 | 203 | 215 | 3 | 98.6% | 93.1% |
| AV | 221 | 189 | 192 | 29 | 86.9% | 85.5% |
| CT | 277 | 270 | 271 | 6 | 97.8% | 97.5% |
| DR | 566 | 503 | 531 | 35 | 93.8% | 88.9% |
| DS | 108 | 101 | 108 | - | 100.0% | 93.5% |
| ET | 359 | 346 | 347 | 12 | 96.7% | 96.4% |
| FT | 778 | 626 | 753 | 25 | 96.8% | 80.5% |
| FW | 268 | 228 | 256 | 12 | 95.5% | 85.1% |
| MT | 143 | 136 | 138 | 5 | 96.5% | 95.1% |
| Division | 3,122 | 2,767 | 2,993 | 129 | 95.9% | 88.6% |
| College | 72,186 | 59,640 | 65,792 | 5,539 | 92.4% | 82.5% |

| Program | Completion % > College% | Success % > College% |
|---|---|---|
| AB | 6.5% | 7.2% |
| AT | 6.2% | 10.7% |
| AV | -5.6% | 3.1% |
| CT | 5.4% | 15.0% |
| DR | 1.4% | 6.4% |
| DS | 7.6% | 11.1% |
| ET | 4.2% | 13.9% |
| FT | 4.3% | -2.0% |
| FW | 3.1% | 2.6% |
| MT | 4.1% | 12.7% |
| Division | 3.4% | 6.2% |

| Program | Completion % > Division % | Success % > Division% |
|---|---|---|
| AB | 3.0% | 1.0% |
| AT | 2.8% | 4.5% |
| AV | -9.0% | -3.1% |
| CT | 2.0% | 8.8% |
| DR | -2.1% | 0.2% |
| DS | 4.1% | 4.9% |
| ET | 0.8% | 7.7% |
| FT | 0.9% | -8.2% |
| FW | -0.3% | -3.6% |
| MT | 0.6% | 6.5% |
| Division | 0.0% | 0.0% |

All of the programs exceeded the college's average completion and success rates with two exceptions: Aviation Maintenance's completion rate was below average and Flight Technology's success rate was below average.  See the next page for a graphical representation of these tables.

# Advanced Technology Division Student Retention FY06

| Category | Completion Rate | Success Rate |
|---|---|---|
| College | 92.4% | 82.5% |
| Division | 95.9% | 88.6% |
| MT | 96.5% | 95.1% |
| FW | 95.5% | 85.1% |
| FT | 96.8% | 80.5% |
| ET | 96.7% | 96.4% |
| DS | 100.0% | 93.5% |
| DR | 93.8% | 88.9% |
| CT | 97.8% | 97.5% |
| AV | 86.9% | 85.5% |
| AT | 98.6% | 93.1% |
| AB | 98.9% | 89.7% |

■ Completion Rate    ■ Success Rate

Completion Rate = Total Completers / Enrollment 2nd Week
Success Rate = Completers with ABCP Grades / Total Completers
College Rates = All College Credit Courses
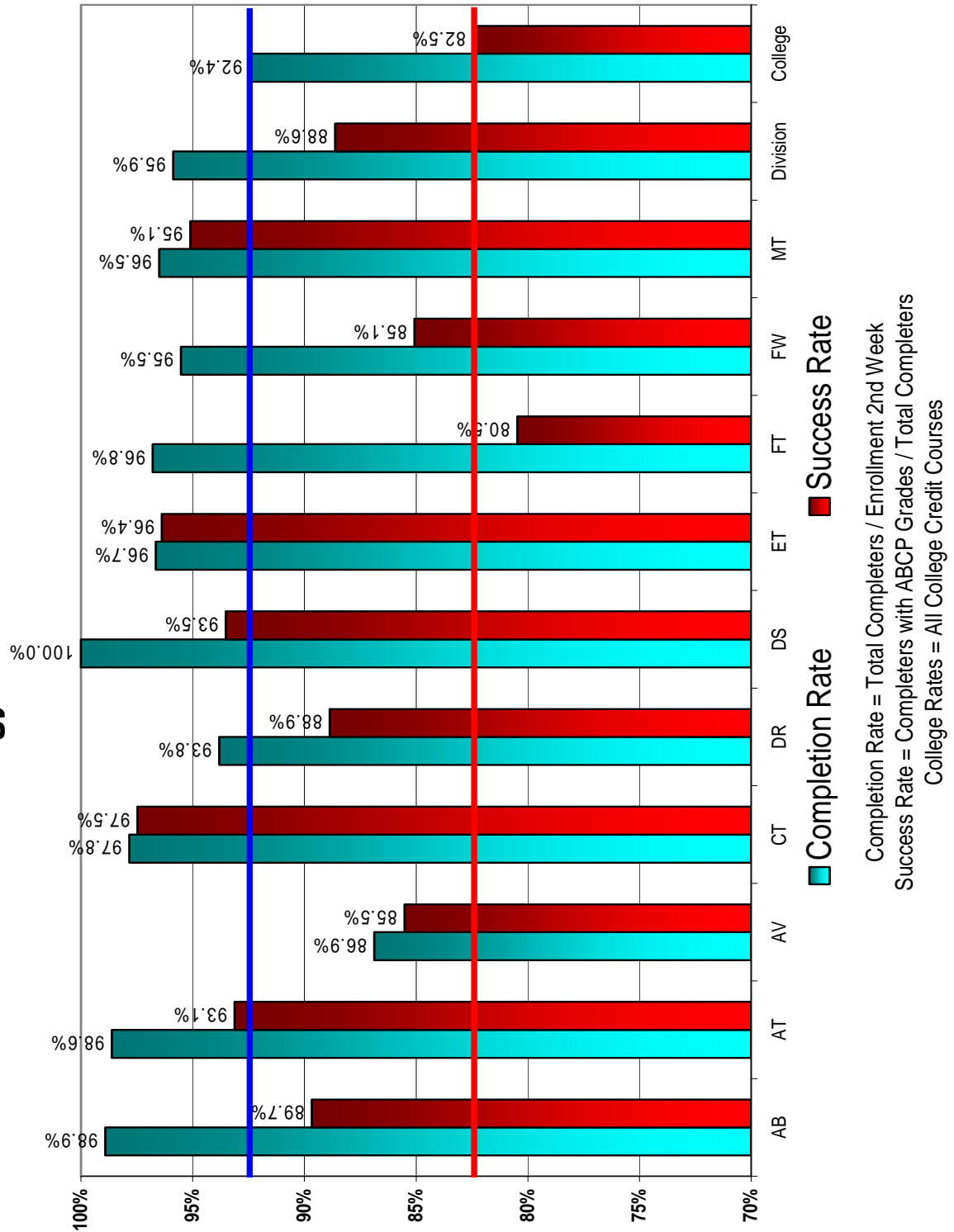
# Unit Plan Section I:  Data Elements
## Advanced Technology Division

**Automotive Body and Fender**

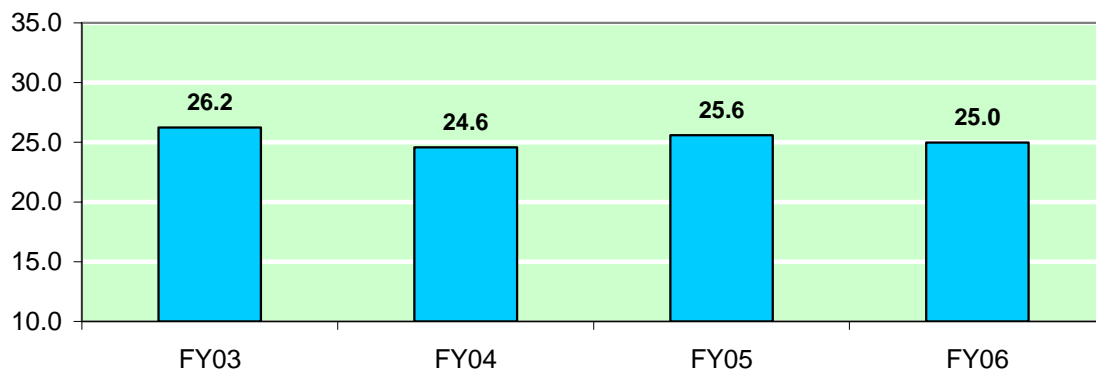| | Fiscal Year 2006 | Expected Model | Actual | Difference | IRAP | Analysis |
|---|---|---|---|---|---|---|
| 1 | **Enrollment** | **M** | | | | **H**igh, **M**edium or **L**ow Cost Program |
| 2 | Reimbursable Student FTE | 56.40 | 49.93 | | 45.9 | 510 contact hours = 1 R-SFTE |
| 3 | Credit Hour Student FTE | 32.00 | 28.33 | | 28.3 | 45 Credit Hours = 1 CrdHr-SFTE |
| 4 | **Staffing** | | | | | |
| 5 | Full-time Equivalent Faculty | 1.600 | 2.000 | 25% | | Actual = Enrollment Reports FY06 |
| 6 | Part-time Equivalent Faculty | 0.400 | 0.000 | - | | Actual = Enrollment Reports FY06 |
| 7 | **Total Faculty FTE** | **2.000** | **2.000** | **0%** | | |
| 8 | **Budget** | | | | | |
| 9 | FT Faculty Dollars | 98,002 | 134,710 | 37% | | Actual = Banner FY06, Period 14 |
| 10 | PT Faculty Dollars | 15,925 | - | - | | Actual = Banner FY06, Period 14 |
| 11 | Lab Assistant Dollars | 8,000 | 6,066 | -24% | | Actual = Banner FY06, Period 14 |
| 12 | OPE | 61,415 | 74,913 | 22% | | Actual = Banner FY06, Period 14 |
| 13 | Materials and Supplies | 6,000 | 2,618 | -56% | | Actual = Banner FY06, Period 14 |
| 14 | Equipment | 8,000 | 3,236 | -60% | | Actual = Banner FY06, Period 14 |
| 15 | **Direct Instruction Costs** | **197,342** | **221,543** | **12%** | **207,184** | **Expenses are higher than expected.** |
| 16 | **Operating Ratios** | | | | | |
| 17 | R-SFTE/Total Faculty FTE | 28.20 | 24.97 | -11% | | |
| 18 | **CrdHr-SFTE/Total Faculty FTE** | **16.00** | **14.17** | **-11%** | | **Faculty are serving fewer students.** |
| 19 | Cost / R-SFTE | 3,499 | 4,437 | 27% | 4,520 | |
| 20 | Cost / CrdHr-SFTE | 6,167 | 7,820 | 27% | | **Cost per student is higher than expected.** |
| 21 | | | | | | |
| 22 | **Revenue** | | **Revenue** | **Difference** | **IRAP** | |
| 23 | Tuition | | 84,140 | | 84,721 | FY06 Tuition Rate x CrdHr SFTE x 45 |
| 24 | Program Fees (Differential) | | 35,594 | | 36,820 | Credit Hours x $27.92 |
| 25 | Public Support / Reimb SFTE | 3,765 | 188,006 | | 117,088 | TPS = $3,765 in Division; =$2,554 in IRAP |
| 26 | Other Instructional Revenue | | | | | |
| 27 | **Total Operating Revenue** | | **307,740** | | **238,629** | Contribution to Total College Revenue |
| 28 | Instructional Function Revenue | 54.5% | 167,718 | | | Based on Model's Functional Cost Ratios |
| 29 | **Direct Instruction Revenue** | **83.3%** | **139,707** | **-37%** | | **Expenses are Greater than Revenue** |
| 30 | | | | | | Faculty, Lab Assts, M&S, Equip Costs |
| 31 | Indirect Instruction Revenue | 16.7% | 28,011 | | | Portion of indirect instructional costs |
| 32 | Other Functions Revenue | 45.5% | 140,022 | | | Student Svs, College Svs, etc. |
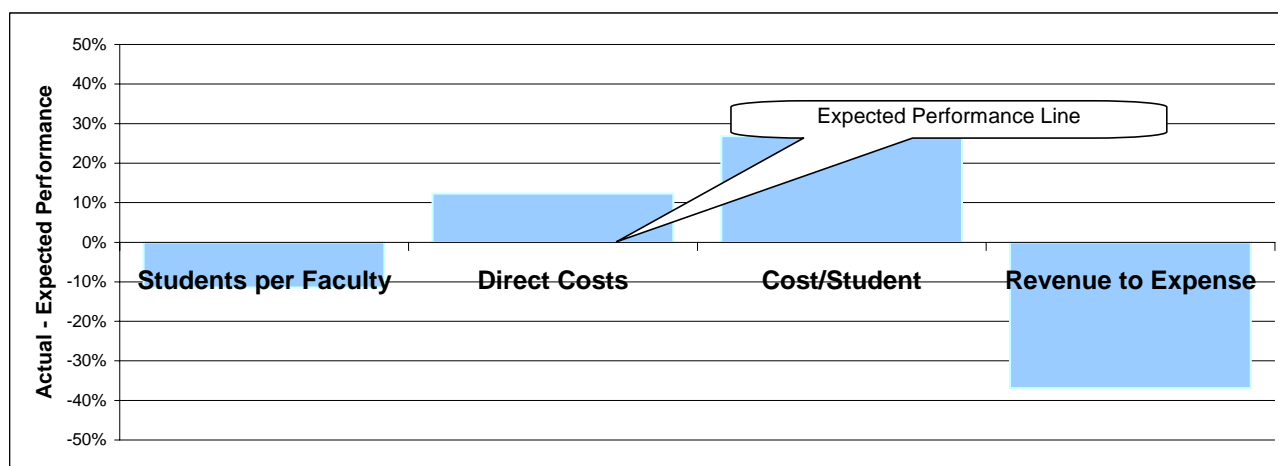


The Automotive Body and Fender program produced 11% less student FTE than planned.  This created higher than expected direct costs and cost per student.  According to the IRAP data, the program's revenue is greater than its direct instructional expense.  When considering only 54.5% of the total revenue is spent by the instructional function and 83.3% of that is spent on direct instruction, the program spent 37% more than it produced in total revenue. This is about 12% too high for a medium cost program.

## Automotive Body and Fender

| | Operating Data | FY03 Actual | FY04 Actual | FY05 Actual | FY06 Actual |
|---|---|---|---|---|---|
| 1 | Full-Time Faculty FTE | 2.000 | 2.000 | 2.000 | 2.000 |
| 2 | Part-Time Faculty FTE | 0.000 | 0.000 | 0.000 | 0.000 |
| 3 | Total Faculty FTE | 2.000 | 2.000 | 2.000 | 2.000 |
| 4 | Student FTE | 52.480 | 49.120 | 51.200 | 49.930 |
| 5 | SFTE / FFTE | 26.240 | 24.560 | 25.600 | 24.965 |
| 6 | | | | | |
| 7 | Full-Time Faculty | 125,522 | 120,984 | 126,664 | 134,710 |
| 8 | Part-Time Faculty | 0 | 1,320 | | |
| 9 | Lab Assistant | 5,469 | 6,031 | 6,019 | 6,066 |
| 10 | Other Payroll Expenses | 49,467 | 62,746 | 69,468 | 74,913 |
| 11 | Materials and Supplies | 1,890 | 1,037 | 734 | 5,854 |
| 12 | Total | 182,347 | 192,118 | 202,885 | 221,543 |
| 13 | Ratios | FY03 | FY04 | FY05 | FY06 |
| 14 | Student FTE / Faculty FTE | 26.2 | 24.6 | 25.6 | 25.0 |
| 15 | Cost per Student FTE | 3,475 | 3,911 | 3,963 | 4,437 |

### Student Teacher Ratio



### Cost per Student FTE
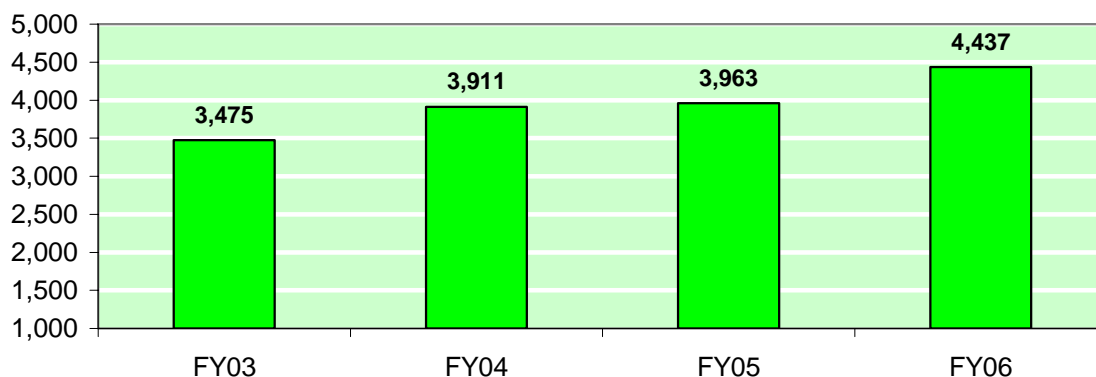
**Automotive Technology**

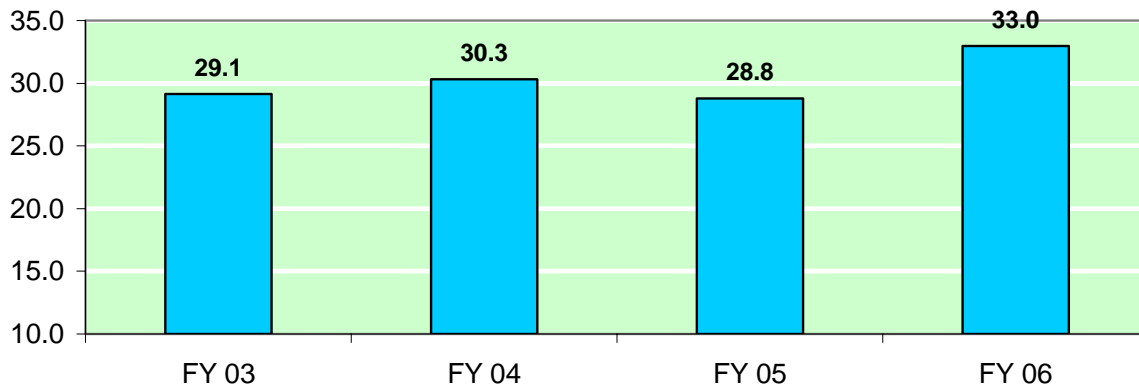| | Fiscal Year 2006 | Expected Model | Actual | Difference | IRAP | Analysis |
|---|---|---|---|---|---|---|
| 1 | **Enrollment** | **M** | | | | **H**igh, **M**edium or **L**ow Cost Program |
| 2 | Reimbursable Student FTE | 55.18 | 56.84 | | 59.0 | 510 contact hours = 1 R-SFTE |
| 3 | Credit Hour Student FTE | 32.00 | 32.96 | | 47.4 | 45 Credit Hours = 1 CrdHr-SFTE |
| 4 | **Staffing** | | | | | |
| 5 | Full-time Equivalent Faculty | 1.600 | 2.000 | 25% | | Actual = Enrollment Reports FY06 |
| 6 | Part-time Equivalent Faculty | 0.400 | 0.000 | - | | Actual = Enrollment Reports FY06 |
| 7 | **Total Faculty FTE** | **2.000** | **2.000** | **0%** | | |
| 8 | **Budget** | | | | | |
| 9 | FT Faculty Dollars | 98,002 | 121,785 | 24% | | Actual = Banner FY06, Period 14 |
| 10 | PT Faculty Dollars | 15,925 | - | - | | Actual = Banner FY06, Period 14 |
| 11 | Lab Assistant Dollars | 8,000 | 12,944 | 62% | | Actual = Banner FY06, Period 14 |
| 12 | OPE | 61,415 | 72,484 | 18% | | Actual = Banner FY06, Period 14 |
| 13 | Materials and Supplies | 6,000 | 5,637 | -6% | | Actual = Banner FY06, Period 14 |
| 14 | Equipment | 8,000 | - | - | | CARF $39,552 is not included |
| 15 | **Direct Instruction Costs** | **197,342** | **212,850** | **8%** | **262,977** | **Expenses are higher than expected.** |
| 16 | **Operating Ratios** | | | | | |
| 17 | R-SFTE/Total Faculty FTE | 27.59 | 28.42 | 3% | | |
| 18 | **CrdHr-SFTE/Total Faculty FTE** | **16.00** | **16.48** | **3%** | | **Faculty are serving more students.** |
| 19 | Cost / R-SFTE | 3,576 | 3,745 | 5% | 4,450 | |
| 20 | Cost / CrdHr-SFTE | 6,167 | 6,458 | 5% | | **Cost per student is higher than expected.** |
| 21 | | | | | | |
| 22 | **Revenue** | | **Revenue** | **Difference** | **IRAP** | |
| 23 | Tuition | | 97,891 | | 141,666 | FY06 Tuition Rate x CrdHr SFTE x 45 |
| 24 | Program Fees (Differential) | | 41,411 | | 38,754 | Credit Hours x $27.92 |
| 25 | Public Support / Reimb SFTE | 3,765 | 214,025 | | 150,746 | TPS = $3,765 in Division; =$2,554 in IRAP |
| 26 | Other Instructional Revenue | | | | | |
| 27 | **Total Operating Revenue** | | **353,327** | | **331,166** | Contribution to Total College Revenue |
| 28 | Instructional Function Revenue | 54.5% | 192,563 | | | Based on Model's Functional Cost Ratios |
| 29 | **Direct Instruction Revenue** | **83.3%** | **160,402** | **-25%** | | **Expenses are Greater than Revenue** |
| 30 | | | | | | Faculty, Lab Assts, M&S, Equip Costs |
| 31 | Indirect Instruction Revenue | 16.7% | 32,161 | | | Portion of indirect instructional costs |
| 32 | Other Functions Revenue | 45.5% | 160,764 | | | Student Svs, College Svs, etc. |
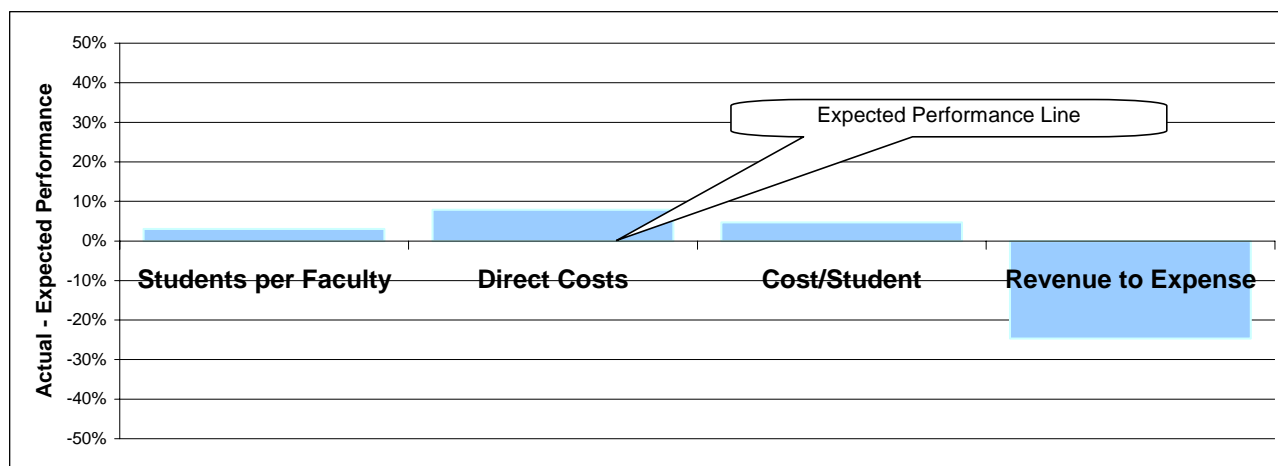


The Automotive Technology program's actual performance was very close to the plan.  According to the IRAP data, the program's revenue is greater than its direct instructional expense.  However, when considering only 54.5% of the total revenue is spent by the instructional function and 83.3% of that is spent on direct instruction, the program spent 25% more than it produced in total revenue.  This is normal for a medium cost program.

## Automotive Technology

| | Operating Data | FY 03 Actual | FY 04 Actual | FY 05 Actual | FY 06 Actual |
|---|---|---|---|---|---|
| 1 | Full-Time Faculty FTE | 2.000 | 2.000 | 2.000 | 2.000 |
| 2 | Part-Time Faculty FTE | 0.000 | 0.000 | 0.000 | 0.000 |
| 3 | Total Faculty FTE | 2.000 | 2.000 | 2.000 | 2.000 |
| 4 | Student FTE | 58.268 | 60.640 | 57.580 | 56.840 |
| 5 | SFTE / FFTE | 29.134 | 30.320 | 28.790 | 32.960 |
| 6 | | | | | |
| 7 | Full-Time Faculty | 106,929 | 107,190 | 114,858 | 121,785 |
| 8 | Part-Time Faculty | 0 | 0 | 0 | 0 |
| 9 | Lab Assistant | 19,236 | 20,267 | 14,906 | 12,944 |
| 10 | Other Payroll Expenses | 55,483 | 62,756 | 66,778 | 72,484 |
| 11 | Materials and Supplies | 6,566 | 15,397 | 7,015 | 5,637 |
| 12 | Total | 188,214 | 205,609 | 203,557 | 212,850 |
| 13 | Cost per Student FTE | 3,230 | 3,391 | 3,535 | 3,745 |

**Student Teacher Ratio**

| | FY 03 | FY 04 | FY 05 | FY 06 |
|---|---|---|---|---|
| | 29.1 | 30.3 | 28.8 | 33.0 |

**Cost per Student FTE**

| | FY 03 | FY 04 | FY 05 | FY 06 |
|---|---|---|---|---|
| | 3,230 | 3,391 | 3,535 | 3,745 |
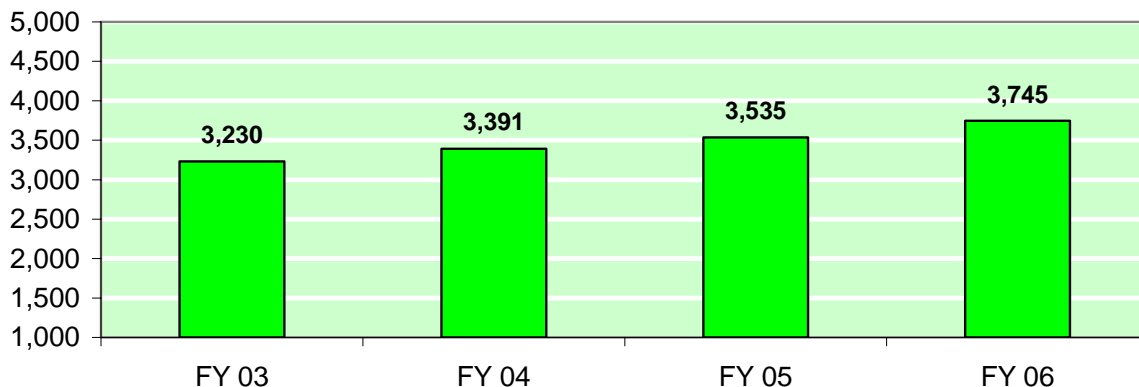
**Aviation Maintenance**

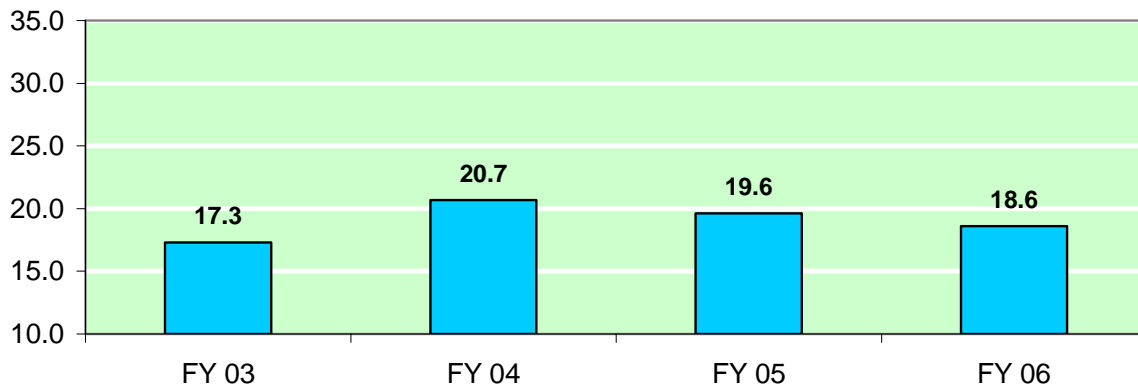| | Fiscal Year 2006 | Expected Model | Actual | Difference | IRAP | Analysis |
|---|---|---|---|---|---|---|
| 1 | **Enrollment** | **H** | | | | High, Medium or Low Cost Program |
| 2 | Reimbursable Student FTE | 59.17 | 57.67 | | 54.3 | 510 contact hours = 1 R-SFTE |
| 3 | Credit Hour Student FTE | 30.00 | 29.24 | | 29.2 | 45 Credit Hours = 1 CrdHr-SFTE |
| 4 | **Staffing** | | | | | |
| 5 | Full-time Equivalent Faculty | 2.700 | 3.000 | 11% | | Actual = Enrollment Reports FY06 |
| 6 | Part-time Equivalent Faculty | 0.300 | 0.000 | - | | Actual = Enrollment Reports FY06 |
| 7 | **Total Faculty FTE** | **3.000** | **3.000** | **0%** | | |
| 8 | **Budget** | | | | | |
| 9 | FT Faculty Dollars | 165,378 | 194,090 | 17% | | Actual = Banner FY06, Period 14 |
| 10 | PT Faculty Dollars | 11,944 | 2,286 | -81% | | Actual = Banner FY06, Period 14 |
| 11 | Lab Assistant Dollars | 15,000 | - | - | | Actual = Banner FY06, Period 14 |
| 12 | OPE | 98,320 | 103,445 | 5% | | Actual = Banner FY06, Period 14 |
| 13 | Materials and Supplies | 12,000 | 9,139 | -24% | | Actual = Banner FY06, Period 14 |
| 14 | Equipment | 15,000 | - | - | | Actual = Banner FY06, Period 14 |
| 15 | **Direct Instruction Costs** | **317,642** | **308,960** | **-3%** | **316,181** | **Expenses are lower than expected.** |
| 16 | **Operating Ratios** | | | | | |
| 17 | R-SFTE/Total Faculty FTE | 19.72 | 19.22 | -3% | | |
| 18 | **CrdHr-SFTE/Total Faculty FTE** | **10.00** | **9.75** | **-3%** | | **Faculty are serving fewer students.** |
| 19 | Cost / R-SFTE | 5,368 | 5,357 | 0% | 5,820 | |
| 20 | Cost / CrdHr-SFTE | 10,588 | 10,566 | 0% | | **Cost per student is lower than expected.** |
| 21 | | | | | | |
| 22 | **Revenue** | | **Revenue** | **Difference** | **IRAP** | |
| 23 | Tuition | | 86,843 | | 87,445 | FY06 Tuition Rate x CrdHr SFTE x 45 |
| 24 | Program Fees (Differential) | | - | | - | Credit Hours x $27.92 |
| 25 | Public Support / Reimb SFTE | 3,765 | 217,150 | | 138,769 | TPS = $3,765 in Division; =$2,554 in IRAP |
| 26 | Other Instructional Revenue | | | | | |
| 27 | **Total Operating Revenue** | | **303,993** | | **226,214** | Contribution to Total College Revenue |
| 28 | Instructional Function Revenue | 54.5% | 165,676 | | | Based on Model's Functional Cost Ratios |
| 29 | **Direct Instruction Revenue** | **83.3%** | **138,006** | **-55%** | | **Expenses are Greater than Revenue** |
| 30 | | | | | | Faculty, Lab Assts, M&S, Equip Costs |
| 31 | Indirect Instruction Revenue | 16.7% | 27,670 | | | Portion of indirect instructional costs |
| 32 | Other Functions Revenue | 45.5% | 138,317 | | | Student Svs, College Svs, etc. |
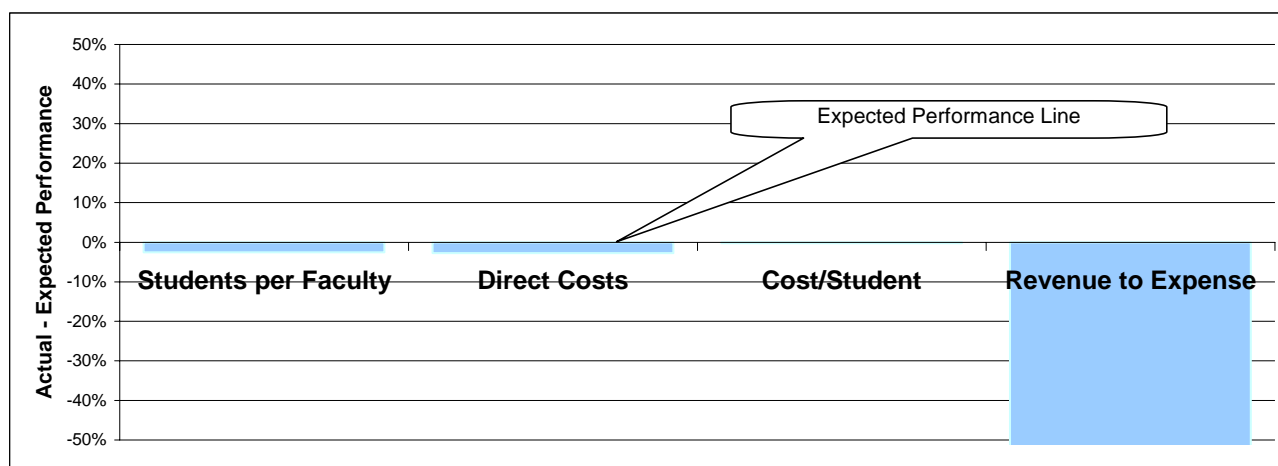


The Aviation Maintenance program's actual performance was very close to the plan. According to the IRAP data, the program's revenue is less than its direct instructional expense. When considering only 54.5% of the total revenue is spent by the instructional function and 83.3% of that is spent on direct instruction, the program spent 55% more than it produced in total revenue. This is normal for a high cost program.

## Aviation Maintenance Technician

| | Operating Data | FY 03 Actual | FY 04 Actual | FY 05 Actual | FY 06 Actual |
|---|---|---|---|---|---|
| 1 | Full-Time Faculty FTE | 4.000 | 3.000 | 3.000 | 3.000 |
| 2 | Part-Time Faculty FTE | 0.500 | 0.159 | 0.000 | 0.100 |
| 3 | Total Faculty FTE | 4.500 | 3.159 | 3.000 | 3.100 |
| 4 | Student FTE | 77.820 | 65.340 | 58.870 | 57.670 |
| 5 | SFTE / FFTE | 17.293 | 20.684 | 19.623 | 18.603 |
| 6 | | | | | |
| 7 | Full-Time Faculty | 187,917 | 159,433 | 173,429 | 194,090 |
| 8 | Part-Time Faculty | 7,381 | 6,748 | 557 | 2,286 |
| 9 | Lab Assistant | 7,364 | 8,417 | 1,065 | 0 |
| 10 | Other Payroll Expenses | 79,315 | 83,670 | 92,560 | 103,445 |
| 11 | Materials and Supplies | 8,837 | 13,098 | 10,942 | 9,139 |
| 12 | Total | 290,813 | 271,367 | 278,553 | 308,960 |
| 13 | Cost per Student FTE | 3,737 | 4,153 | 4,732 | 5,357 |

### Student Teacher Ratio

| FY 03 | FY 04 | FY 05 | FY 06 |
|---|---|---|---|
| 17.3 | 20.7 | 19.6 | 18.6 |

### Cost per Student FTE

| FY 03 | FY 04 | FY 05 | FY 06 |
|---|---|---|---|
| 3,737 | 4,153 | 4,732 | 5,357 |
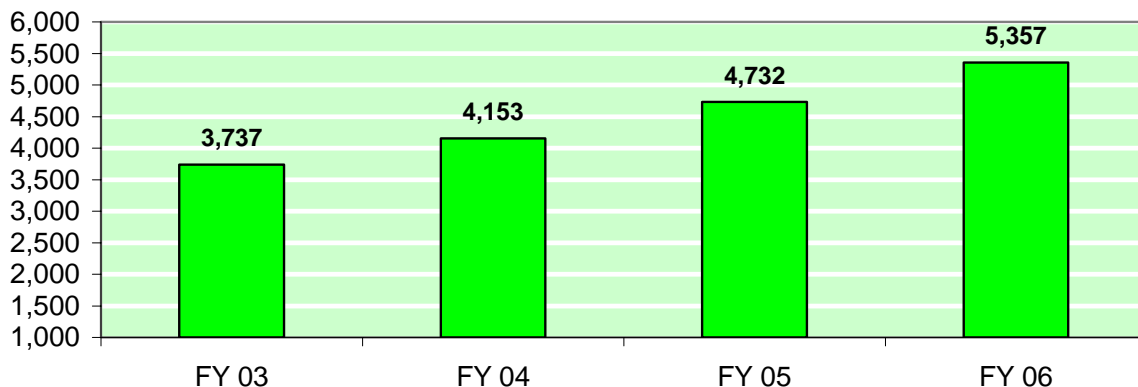
**Construction**

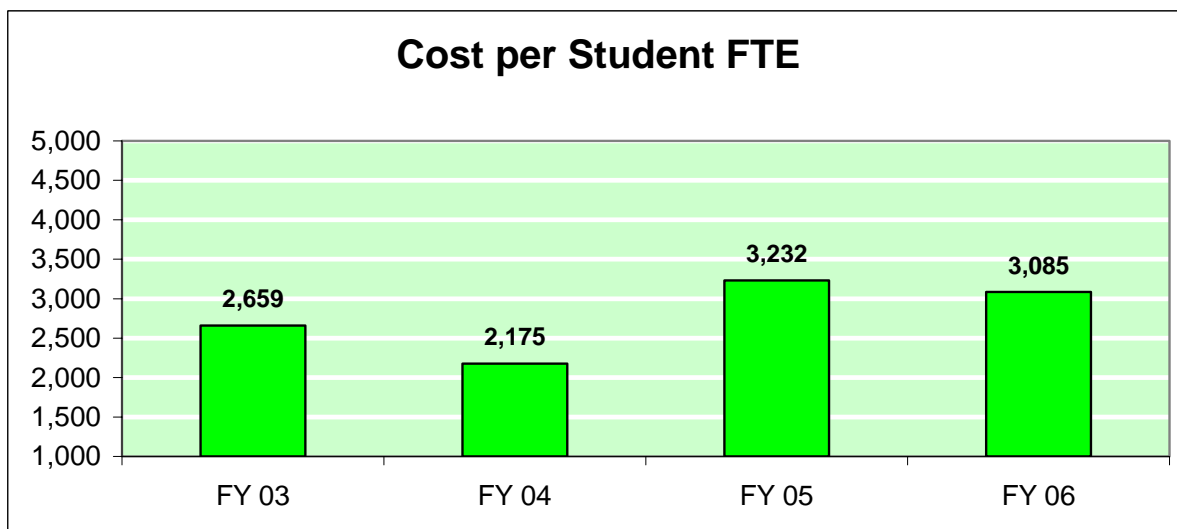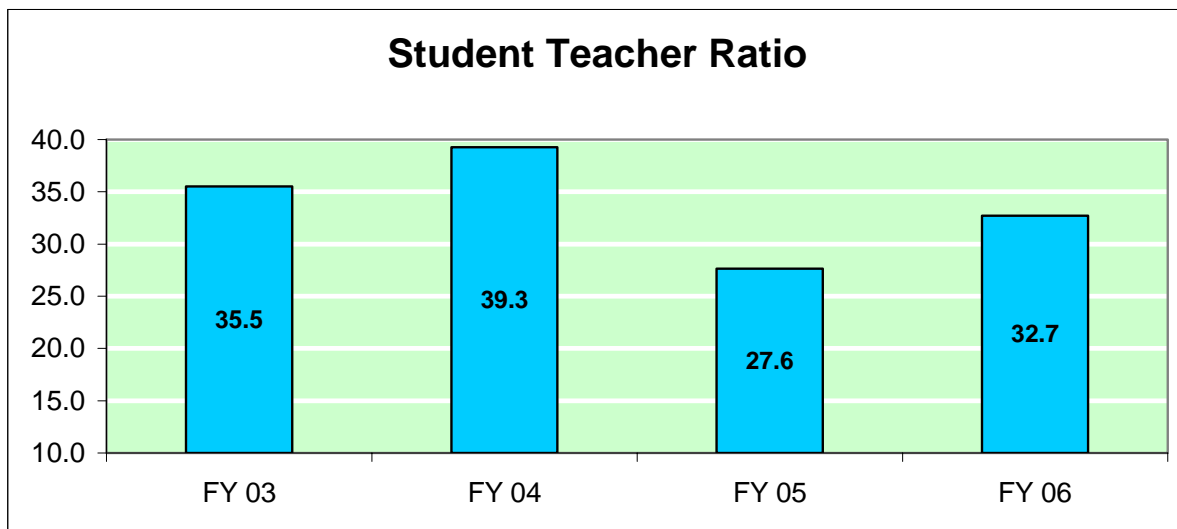| | Fiscal Year 2006 | Expected Model | Actual | Difference | IRAP | Analysis |
|---|---|---|---|---|---|---|
| 1 | **Enrollment** | **M** | | | | High, Medium or Low Cost Program |
| 2 | Reimbursable Student FTE | 21.15 | 30.42 | | 30.4 | 510 contact hours = 1 R-SFTE |
| 3 | Credit Hour Student FTE | 14.88 | 21.40 | | 24.4 | 45 Credit Hours = 1 CrdHr-SFTE |
| 4 | **Staffing** | | | | | |
| 5 | Full-time Equivalent Faculty | 0.744 | 0.750 | 1% | | Actual = Enrollment Reports FY06 |
| 6 | Part-time Equivalent Faculty | 0.186 | 0.180 | -3% | | Actual = Enrollment Reports FY06 |
| 7 | **Total Faculty FTE** | **0.930** | **0.930** | **0%** | | |
| 8 | **Budget** | | | | | |
| 9 | FT Faculty Dollars | 45,571 | 49,368 | 8% | | Actual = Banner FY06, Period 14 |
| 10 | PT Faculty Dollars | 7,405 | 7,147 | -3% | | Actual = Banner FY06, Period 14 |
| 11 | Lab Assistant Dollars | 3,720 | 3,233 | -13% | | Actual = Banner FY06, Period 14 |
| 12 | OPE | 28,558 | 30,733 | 8% | | Actual = Banner FY06, Period 14 |
| 13 | Materials and Supplies | 2,790 | 3,352 | 20% | | Actual = Banner FY06, Period 14 |
| 14 | Equipment | 3,720 | - | - | | Actual = Banner FY06, Period 14 |
| 15 | **Direct Instruction Costs** | **91,764** | **93,833** | **2%** | **85,949** | **Expenses are higher than expected.** |
| 16 | **Operating Ratios** | | | | | |
| 17 | R-SFTE/Total Faculty FTE | 22.74 | 32.71 | 44% | | |
| 18 | **CrdHr-SFTE/Total Faculty FTE** | **16.00** | **23.01** | **44%** | | **Faculty are serving more students.** |
| 19 | Cost / R-SFTE | 4,338 | 3,085 | -29% | 2,830 | |
| 20 | Cost / CrdHr-SFTE | 6,167 | 4,385 | -29% | | **Cost per student is lower than expected.** |
| 21 | | | | | | |
| 22 | **Revenue** | | **Revenue** | **Difference** | **IRAP** | |
| 23 | Tuition | | 63,558 | | 72,893 | FY06 Tuition Rate x CrdHr SFTE x 45 |
| 24 | Program Fees (Differential) | | - | | - | Credit Hours x $27.92 |
| 25 | Public Support / Reimb SFTE | 3,765 | 114,543 | | 77,684 | TPS = $3,765 in Division; =$2,554 in IRAP |
| 26 | Other Instructional Revenue | | | | | |
| 27 | **Total Operating Revenue** | | **178,101** | | **150,577** | Contribution to Total College Revenue |
| 28 | Instructional Function Revenue | 54.5% | 97,065 | | | Based on Model's Functional Cost Ratios |
| 29 | **Direct Instruction Revenue** | **83.3%** | **80,854** | **-14%** | | **Expenses are Greater than Revenue** |
| 30 | | | | | | Faculty, Lab Assts, M&S, Equip Costs |
| 31 | Indirect Instruction Revenue | 16.7% | 16,211 | | | Portion of indirect instructional costs |
| 32 | Other Functions Revenue | 45.5% | 81,036 | | | Student Svs, College Svs, etc. |
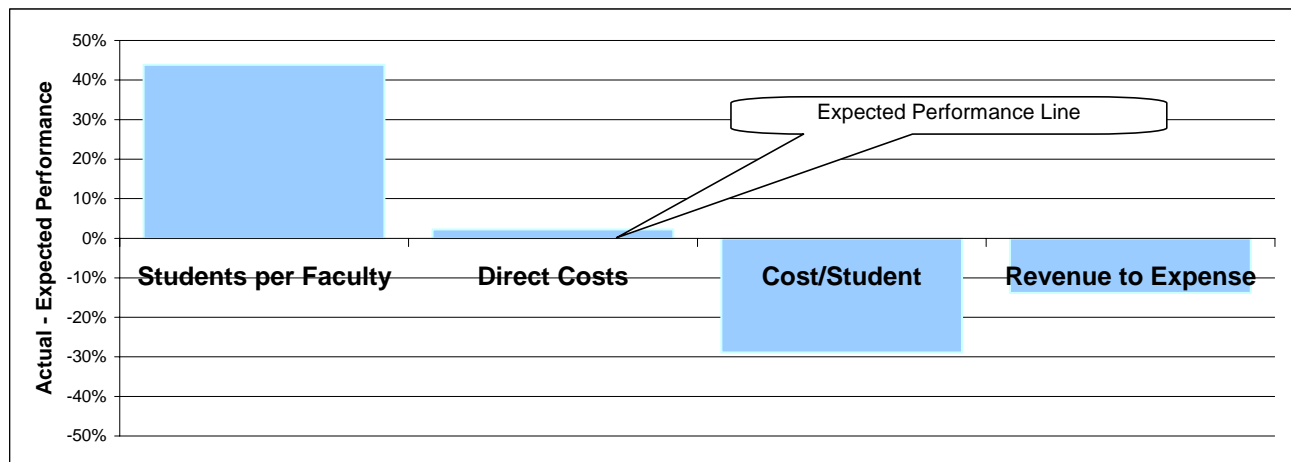


The Construction Technology program's actual performance was better than the plan.  According to the IRAP data, the program's revenue is more than its direct instructional expense.  When considering only 54.5% of the total revenue is spent by the instructional function, and 83.3% of that is spent on direct instruction, the program spent 14% more than it produced in total revenue.  This is good performance for a medium cost program.

## Construction Technology

| | Operating Data | FY 03 Actual | FY 04 Actual | FY 05 Actual | FY 06 Actual |
|---|---|---|---|---|---|
| 1 | Full-Time Faculty FTE | 0.750 | 0.750 | 0.750 | 0.750 |
| 2 | Part-Time Faculty FTE | 0.042 | 0.180 | 0.180 | 0.180 |
| 3 | Total Faculty FTE | 0.792 | 0.930 | 0.930 | 0.930 |
| 4 | Student FTE | 28.140 | 36.520 | 25.700 | 30.420 |
| 5 | SFTE / FFTE | 35.530 | 39.269 | 27.634 | 32.710 |
| 6 | | | | | |
| 7 | Full-Time Faculty | 47,758 | 43,441 | 46,567 | 49,368 |
| 8 | Part-Time Faculty | 1,436 | 6,767 | 6,489 | 7,147 |
| 9 | Lab Assistant | 783 | 540 | 144 | 3,233 |
| 10 | Other Payroll Expenses | 19,693 | 24,037 | 27,308 | 30,733 |
| 11 | Materials and Supplies | 5,158 | 4,645 | 2,554 | 3,352 |
| 12 | Total | 74,828 | 79,430 | 83,062 | 93,833 |
| 13 | Cost per Student FTE | 2,659 | 2,175 | 3,232 | 3,085 |

### Student Teacher Ratio

| | FY 03 | FY 04 | FY 05 | FY 06 |
|---|---|---|---|---|
| | 35.5 | 39.3 | 27.6 | 32.7 |

### Cost per Student FTE

| | FY 03 | FY 04 | FY 05 | FY 06 |
|---|---|---|---|---|
| | 2,659 | 2,175 | 3,232 | 3,085 |

## Unit Plan Section I: Data Elements
### Advanced Technology Division

**Diesel Technology**

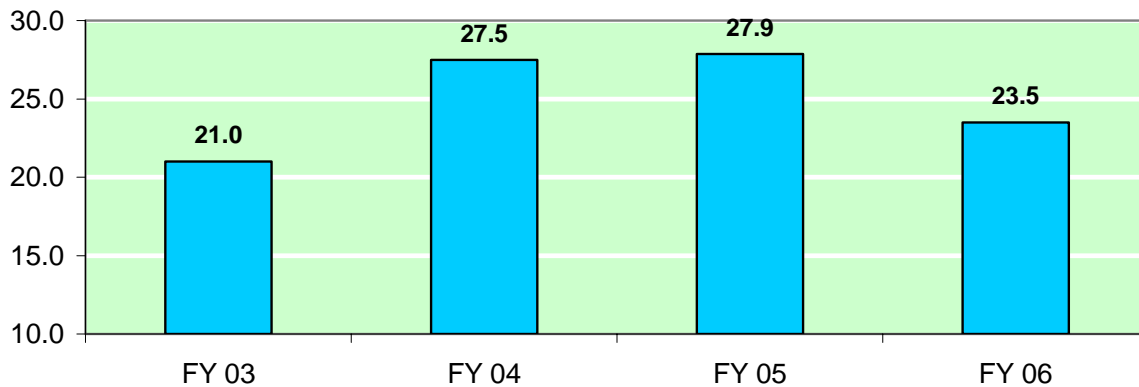| Fiscal Year 2006 | Expected Model | Actual | Difference | IRAP | Analysis |
|---|---|---|---|---|---|
| 1 Enrollment | M | | | | High, Medium or Low Cost Program |
| 2  Reimbursable Student FTE | 50.27 | 46.99 | | 44.4 | 510 contact hours = 1 R-SFTE |
| 3  Credit Hour Student FTE | 32.00 | 29.91 | | 29.9 | 45 Credit Hours = 1 CrdHr-SFTE |
| 4 Staffing | | | | | |
| 5  Full-time Equivalent Faculty | 1.600 | 2.000 | 25% | | Actual = Enrollment Reports FY06 |
| 6  Part-time Equivalent Faculty | 0.400 | 0.000 | - | | Actual = Enrollment Reports FY06 |
| 7  Total Faculty FTE | 2.000 | 2.000 | 0% | | |
| 8 Budget | | | | | |
| 9  FT Faculty Dollars | 98,002 | 122,347 | 25% | | Actual = Banner FY06, Period 14 |
| 10  PT Faculty Dollars | 15,925 | - | - | | Actual = Banner FY06, Period 14 |
| 11  Lab Assistant Dollars | 8,000 | 12,942 | 62% | | Actual = Banner FY06, Period 14 |
| 12  OPE | 61,415 | 72,706 | 18% | | Actual = Banner FY06, Period 14 |
| 13  Materials and Supplies | 6,000 | 10,373 | 73% | | Actual = Banner FY06, Period 14 |
| 14  Equipment | 8,000 | - | - | | CARF $18,493 is not included |
| 15  Direct Instruction Costs | 197,342 | 218,368 | 11% | 188,090 | Expenses are higher than expected. |
| 16 Operating Ratios | | | | | |
| 17  R-SFTE/Total Faculty FTE | 25.14 | 23.50 | -7% | | |
| 18  CrdHr-SFTE/Total Faculty FTE | 16.00 | 14.96 | -7% | | Faculty are serving fewer students. |
| 19  Cost / R-SFTE | 3,925 | 4,647 | 18% | 4,240 | |
| 20  Cost / CrdHr-SFTE | 6,167 | 7,301 | 18% | | Cost per student is higher than expected. |
| 21 | | | | | |
| 22  Revenue | | Revenue | Difference | IRAP | |
| 23  Tuition | | 88,833 | | 89,439 | FY06 Tuition Rate x CrdHr SFTE x 45 |
| 24  Program Fees (Differential) | | - | | - | Credit Hours x $27.92 |
| 25  Public Support / Reimb SFTE | 3,765 | 176,936 | | 113,258 | TPS = $3,765 in Division; =$2,554 in IRAP |
| 26  Other Instructional Revenue | | | | | |
| 27  Total Operating Revenue | | 265,768 | | 202,697 | Contribution to Total College Revenue |
| 28  Instructional Function Revenue | 54.5% | 144,844 | | | Based on Model's Functional Cost Ratios |
| 29  Direct Instruction Revenue | 83.3% | 120,653 | -45% | | Expenses are Greater than Revenue |
| 30 | | | | | Faculty, Lab Assts, M&S, Equip Costs |
| 31  Indirect Instruction Revenue | 16.7% | 24,191 | | | Portion of indirect instructional costs |
| 32  Other Functions Revenue | 45.5% | 120,925 | | | Student Svs, College Svs, etc. |
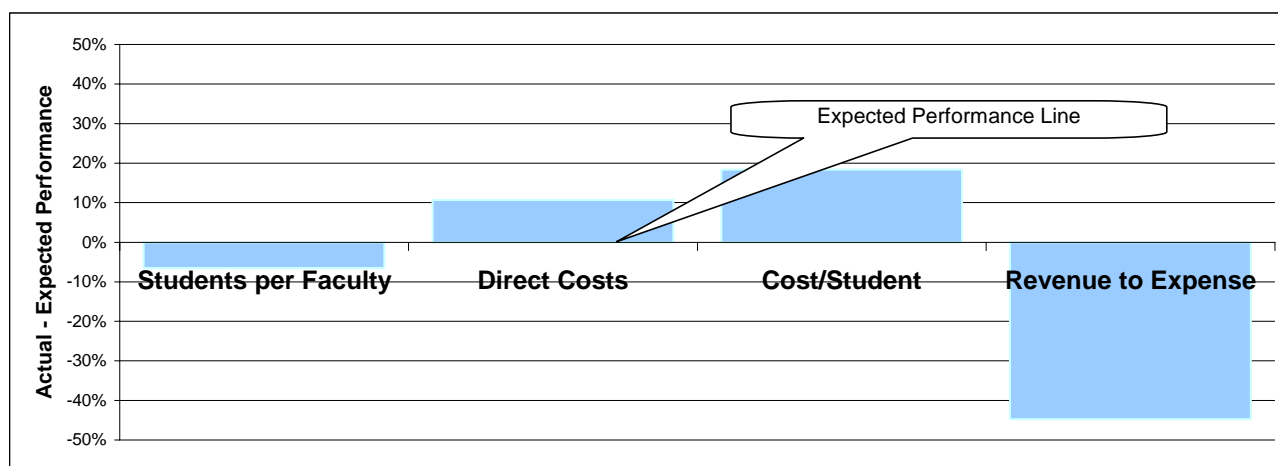


The Diesel Technology program produced 7% less student FTE than planned. This created higher than expected direct costs and cost per student. According to the IRAP data, the program's revenue is less than its direct instructional expense. When considering only 54.5% of the total revenue is spent by the instructional function and 83.3% of that is spent on direct instruction, the program spent 45% more than it produced in total revenue. This is about 20% too high for a medium cost program.

## Diesel Technology

| | Operating Data | FY 03 Actual | FY 04 Actual | FY 05 Actual | FY 06 Actual |
|---|---|---|---|---|---|
| 1 | Full-Time Faculty FTE | 2.000 | 2.000 | 2.000 | 2.000 |
| 2 | Part-Time Faculty FTE | 0.000 | 0.000 | 0.000 | 0.000 |
| 3 | Total Faculty FTE | 2.000 | 2.000 | 2.000 | 2.000 |
| 4 | Student FTE | 42.000 | 54.960 | 55.710 | 46.990 |
| 5 | SFTE / FFTE | 21.000 | 27.480 | 27.855 | 23.495 |
| 6 | | | | | |
| 7 | Full-Time Faculty | 104,928 | 108,381 | 114,648 | 122,347 |
| 8 | Part-Time Faculty | 0 | 208 | 78 | 0 |
| 9 | Lab Assistant | 0 | 0 | 8,231 | 12,942 |
| 10 | Other Payroll Expenses | 31,774 | 54,260 | 64,053 | 72,706 |
| 11 | Materials and Supplies | 9,129 | 9,046 | 5,106 | 10,373 |
| 12 | Total | 145,831 | 171,894 | 192,116 | 218,368 |
| 13 | Cost per Student FTE | 3,472 | 3,128 | 3,449 | 4,647 |

### Student Teacher Ratio

FY 03: 21.0, FY 04: 27.5, FY 05: 27.9, FY 06: 23.5

### Cost per Student FTE

FY 03: 3,472, FY 04: 3,128, FY 05: 3,449, FY 06: 4,647
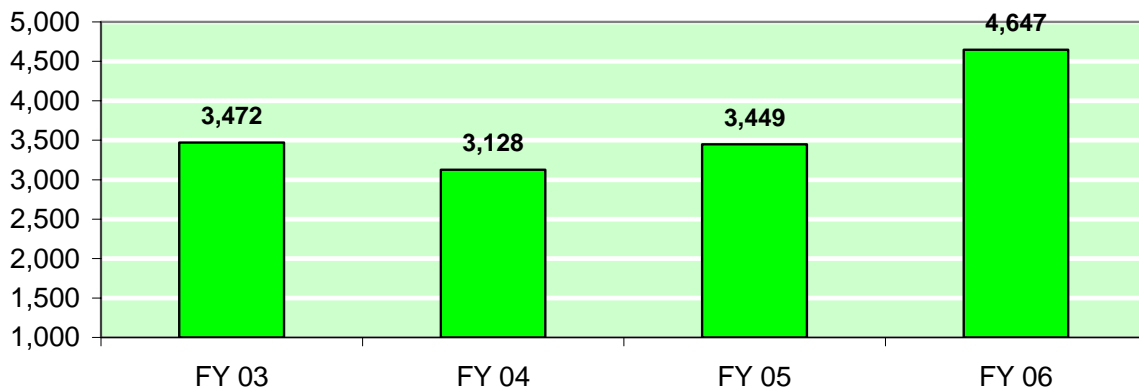
**Drafting**

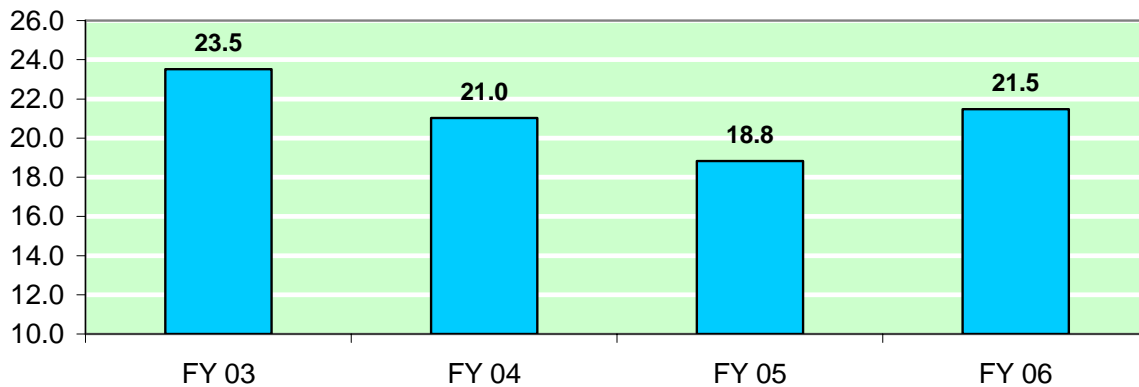| | Fiscal Year 2006 | Expected Model | Actual | Difference | IRAP | Analysis |
|---|---|---|---|---|---|---|
| 1 | **Enrollment** | **M** | | | | **H**igh, **M**edium or **L**ow Cost Program |
| 2 | Reimbursable Student FTE | 79.62 | 70.87 | | 69.6 | 510 contact hours = 1 R-SFTE |
| 3 | Credit Hour Student FTE | 52.80 | 47.00 | | 75.5 | 45 Credit Hours = 1 CrdHr-SFTE |
| 4 | **Staffing** | | | | | |
| 5 | Full-time Equivalent Faculty | 2.640 | 2.000 | -24% | | Actual = Enrollment Reports FY06 |
| 6 | Part-time Equivalent Faculty | 0.660 | 1.300 | 97% | | Actual = Enrollment Reports FY06 |
| 7 | **Total Faculty FTE** | **3.300** | **3.300** | **0%** | | |
| 8 | **Budget** | | | | | |
| 9 | FT Faculty Dollars | 161,703 | 110,122 | -32% | | Actual = Banner FY06, Period 14 |
| 10 | PT Faculty Dollars | 26,277 | 68,360 | 160% | | Actual = Banner FY06, Period 14 |
| 11 | Lab Assistant Dollars | 13,200 | - | - | | Actual = Banner FY06, Period 14 |
| 12 | OPE | 101,335 | 86,481 | -15% | | Actual = Banner FY06, Period 14 |
| 13 | Materials and Supplies | 9,900 | 7,088 | -28% | | Actual = Banner FY06, Period 14 |
| 14 | Equipment | 13,200 | - | - | | Actual = Banner FY06, Period 14 |
| 15 | **Direct Instruction Costs** | **325,614** | **272,051** | **-16%** | **268,999** | **Expenses are lower than expected.** |
| 16 | **Operating Ratios** | | | | | |
| 17 | R-SFTE/Total Faculty FTE | 24.13 | 21.48 | -11% | | |
| 18 | **CrdHr-SFTE/Total Faculty FTE** | **16.00** | **14.24** | **-11%** | | **Faculty are serving fewer students.** |
| 19 | Cost / R-SFTE | 4,090 | 3,839 | -6% | 3,860 | |
| 20 | Cost / CrdHr-SFTE | 6,167 | 5,788 | -6% | | **Cost per student is lower than expected.** |
| 21 | | | | | | |
| 22 | **Revenue** | | **Revenue** | **Difference** | **IRAP** | |
| 23 | Tuition | | 139,590 | | 225,789 | FY06 Tuition Rate x CrdHr SFTE x 45 |
| 24 | Program Fees (Differential) | | - | | - | Credit Hours x $27.92 |
| 25 | Public Support / Reimb SFTE | 3,765 | 266,853 | | 177,841 | TPS = $3,765 in Division; =$2,554 in IRAP |
| 26 | Other Instructional Revenue | | | | | |
| 27 | **Total Operating Revenue** | | **406,443** | | **403,630** | Contribution to Total College Revenue |
| 28 | Instructional Function Revenue | 54.5% | 221,512 | | | Based on Model's Functional Cost Ratios |
| 29 | **Direct Instruction Revenue** | **83.3%** | **184,516** | **-32%** | | **Expenses are Greater than Revenue** |
| 30 | | | | | | Faculty, Lab Assts, M&S, Equip Costs |
| 31 | Indirect Instruction Revenue | 16.7% | 36,996 | | | Portion of indirect instructional costs |
| 32 | Other Functions Revenue | 45.5% | 184,932 | | | Student Svs, College Svs, etc. |
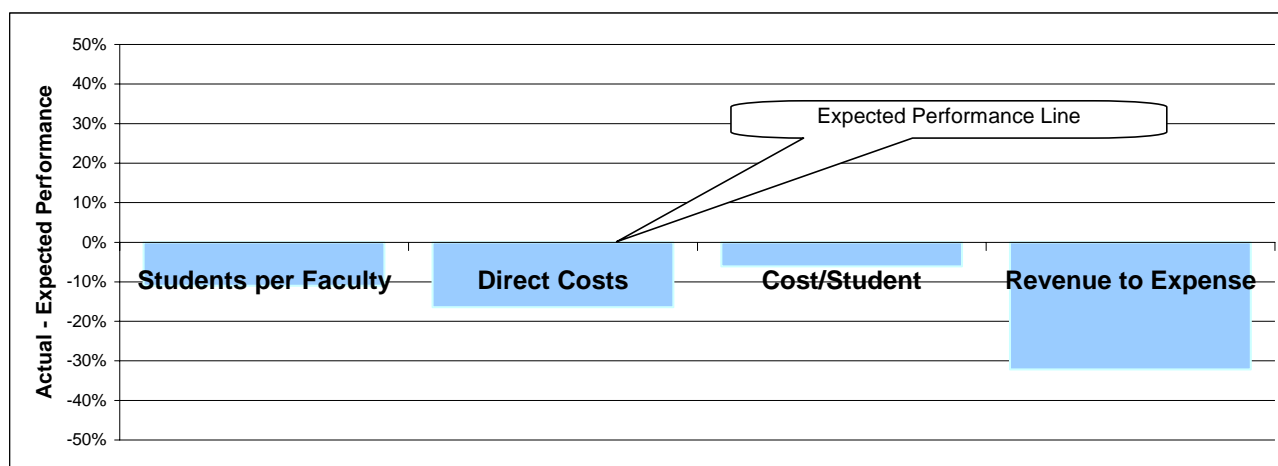


The Drafting program produced 11% less student FTE than planned but the program's costs were lower than expected.  According to the IRAP data, the program's revenue is greater than its direct instructional expense. When considering only 54.5% of the total revenue is spent by the instructional function and 83.3% of that is spent on direct instruction, the program spent 32% more than it produced in total revenue. This is about 7% too high for a medium cost program.

## Drafting Program

| | Operating Data | FY 03 Actual | FY 04 Actual | FY 05 Actual | FY 06 Actual |
|---|---|---|---|---|---|
| 1 | Full-Time Faculty FTE | 2.000 | 2.000 | 2.000 | 2.000 |
| 2 | Part-Time Faculty FTE | 1.633 | 1.740 | 1.740 | 1.300 |
| 3 | Total Faculty FTE | 3.633 | 3.740 | 3.740 | 3.300 |
| 4 | Student FTE | 85.456 | 78.630 | 70.420 | 70.870 |
| 5 | SFTE / FFTE | 23.522 | 21.024 | 18.829 | 21.476 |
| 6 | | | | | |
| 7 | Full-Time Faculty | 91,263 | 95,791 | 102,109 | 110,122 |
| 8 | Part-Time Faculty | 78,270 | 60,027 | 56,111 | 68,360 |
| 9 | Lab Assistant | 0 | 0 | 0 | 0 |
| 10 | Other Payroll Expenses | 56,648 | 67,188 | 76,327 | 86,481 |
| 11 | Materials and Supplies | 14,090 | 4,731 | 4,074 | 7,088 |
| 12 | Total | 240,271 | 227,736 | 238,621 | 272,051 |
| 13 | Cost per Student FTE | 2,812 | 2,896 | 3,389 | 3,839 |

### Student Teacher Ratio

| | FY 03 | FY 04 | FY 05 | FY 06 |
|---|---|---|---|---|
| | 23.5 | 21.0 | 18.8 | 21.5 |

### Cost per Student FTE

| | FY 03 | FY 04 | FY 05 | FY 06 |
|---|---|---|---|---|
| | 2,812 | 2,896 | 3,389 | 3,839 |
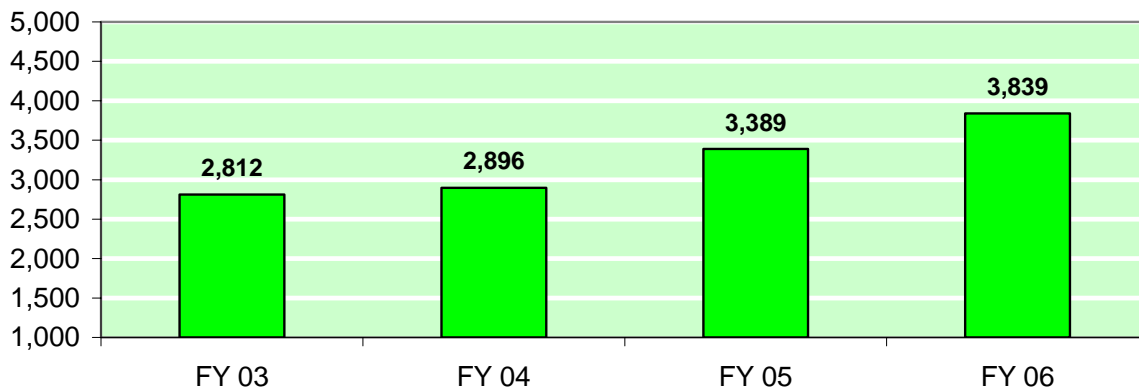
**Electronics**

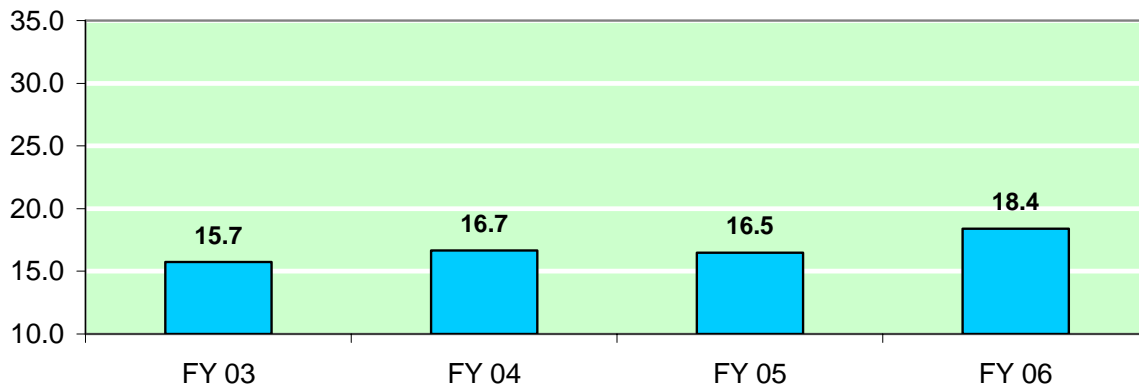| Fiscal Year 2006 | Expected Model | Actual | Difference | IRAP | Analysis |
|---|---|---|---|---|---|
| 1 **Enrollment** | H | | | | **H**igh, **M**edium or **L**ow Cost Program |
| 2   Reimbursable Student FTE | 39.00 | 48.98 | | 46.5 | 510 contact hours = 1 R-SFTE |
| 3   Credit Hour Student FTE | 26.63 | 33.44 | | 33.4 | 45 Credit Hours = 1 CrdHr-SFTE |
| 4 **Staffing** | | | | | |
| 5   Full-time Equivalent Faculty | 2.396 | 2.000 | -17% | | Actual = Enrollment Reports FY06 |
| 6   Part-time Equivalent Faculty | 0.266 | 0.663 | 149% | | Actual = Enrollment Reports FY06 |
| 7   **Total Faculty FTE** | 2.663 | 2.663 | 0% | | |
| 8 **Budget** | | | | | |
| 9   FT Faculty Dollars | 146,782 | 123,620 | -16% | | Actual = Banner FY06, Period 14 |
| 10   PT Faculty Dollars | 10,601 | 30,932 | 192% | | Actual = Banner FY06, Period 14 |
| 11   Lab Assistant Dollars | 13,313 | 7,492 | -44% | | Actual = Banner FY06, Period 14 |
| 12   OPE | 87,264 | 81,954 | -6% | | Actual = Banner FY06, Period 14 |
| 13   Materials and Supplies | 10,651 | 8,250 | -23% | | Actual = Banner FY06, Period 14 |
| 14   Equipment | 13,313 | - | - | | Actual = Banner FY06, Period 14 |
| 15   **Direct Instruction Costs** | 281,925 | 252,248 | -11% | 232,254 | **Expenses are lower than expected.** |
| 16 **Operating Ratios** | | | | | |
| 17   R-SFTE/Total Faculty FTE | 14.65 | 18.40 | 26% | | |
| 18   **CrdHr-SFTE/Total Faculty FTE** | 10.00 | 12.56 | 26% | | **Faculty are serving more students.** |
| 19   Cost / R-SFTE | 7,229 | 5,150 | -29% | 4,993 | |
| 20   Cost / CrdHr-SFTE | 10,588 | 7,543 | -29% | | **Cost per student is lower than expected.** |
| 21 | | | | | |
| 22 **Revenue** | | **Revenue** | **Difference** | **IRAP** | |
| 23   Tuition | | 99,317 | | 100,004 | FY06 Tuition Rate x CrdHr SFTE x 45 |
| 24   Program Fees (Differential) | | 30,096 | | 29,819 | Credits Hours x 45 x $20.00 |
| 25   Public Support / Reimb SFTE | 3,765 | 184,429 | | 118,800 | TPS = $3,765 in Division; =$2,554 in IRAP |
| 26   Other Instructional Revenue | | | | | |
| 27   **Total Operating Revenue** | | **313,842** | | **248,623** | Contribution to Total College Revenue |
| 28   Instructional Function Revenue | 54.5% | 171,044 | | | Based on Model's Functional Cost Ratios |
| 29   **Direct Instruction Revenue** | 83.3% | 142,477 | -44% | | **Expenses are Greater than Revenue** |
| 30 | | | | | Faculty, Lab Assts, M&S, Equip Costs |
| 31   Indirect Instruction Revenue | 16.7% | 28,567 | | | Portion of indirect instructional costs |
| 32   Other Functions Revenue | 45.5% | 142,798 | | | Student Svs, College Svs, etc. |
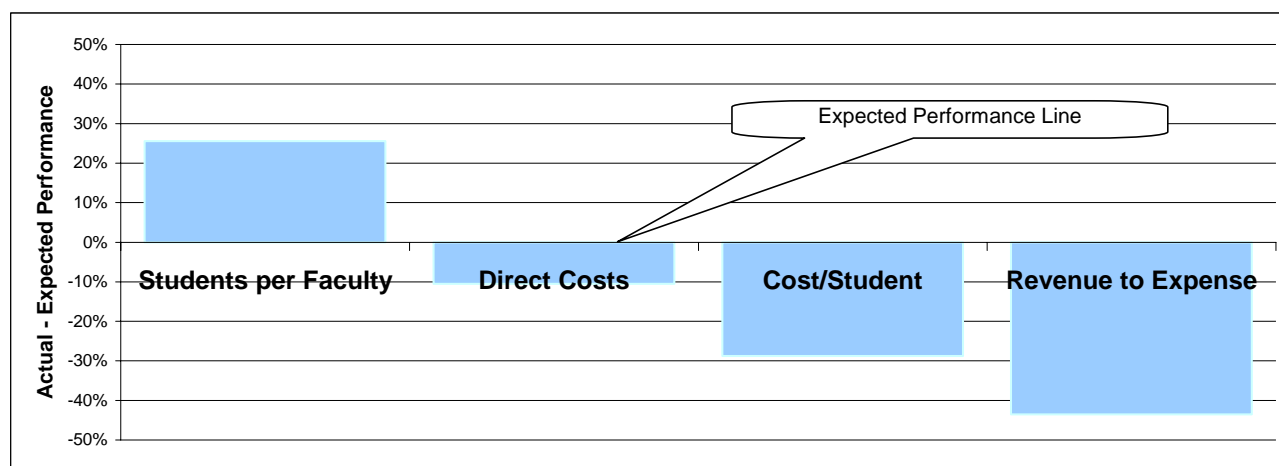


The Electronics program's actual performance was better than planned.  According to the IRAP data, the program's revenue is less than its direct instructional expense.  When considering only 54.5% of the total revenue is spent by the instructional function and 83.3% of that is spent on direct instruction, the program spent 44% more than it produced in total revenue.  This is good performance for a high cost program.

## Electronics Technology

| | Operating Data | FY 03 Actual | FY 04 Actual | FY 05 Actual | FY 06 Actual |
|---|---|---|---|---|---|
| 1 | Full-Time Faculty FTE | 2.000 | 1.733 | 2.591 | 2.000 |
| 2 | Part-Time Faculty FTE | 1.000 | 1.038 | 0.000 | 0.663 |
| 3 | Total Faculty FTE | 3.000 | 2.771 | 2.591 | 2.663 |
| 4 | Student FTE | 47.208 | 46.150 | 42.660 | 48.980 |
| 5 | SFTE / FFTE | 15.736 | 16.655 | 16.465 | 18.393 |
| 6 | | | | | |
| 7 | Full-Time Faculty | 103,621 | 107,344 | 141,594 | 123,620 |
| 8 | Part-Time Faculty | 33,715 | 35,740 | 0 | 30,932 |
| 9 | Lab Assistant | 3,949 | 4,189 | 4,991 | 7,492 |
| 10 | Other Payroll Expenses | 50,488 | 66,461 | 77,021 | 81,954 |
| 11 | Materials and Supplies | 6,104 | 13,731 | 13,146 | 8,250 |
| 12 | Total | 197,878 | 227,464 | 236,752 | 252,248 |
| 13 | Cost per Student FTE | 4,192 | 4,929 | 5,550 | 5,150 |

**Student Teacher Ratio**

| FY 03 | FY 04 | FY 05 | FY 06 |
|---|---|---|---|
| 15.7 | 16.7 | 16.5 | 18.4 |

**Cost per Student FTE**

| FY 03 | FY 04 | FY 05 | FY 06 |
|---|---|---|---|
| 4,192 | 4,929 | 5,550 | 5,150 |
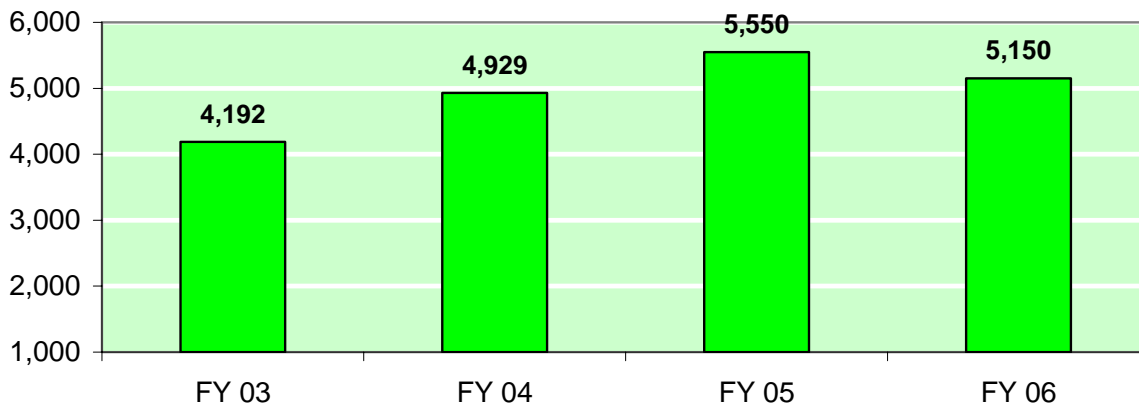
**Fabrication and Welding**

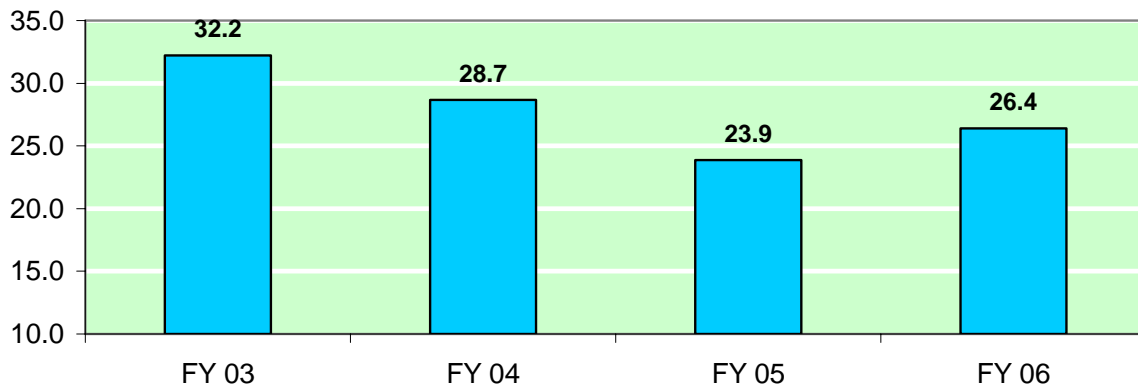| | Fiscal Year 2006 | Expected Model | Actual | Difference | IRAP | Analysis |
|---|---|---|---|---|---|---|
| 1 | **Enrollment** | **M** | | | | **H**igh, **M**edium or **L**ow Cost Program |
| 2 | Reimbursable Student FTE | 66.87 | 65.37 | | 65.6 | 510 contact hours = 1 R-SFTE |
| 3 | Credit Hour Student FTE | 39.62 | 38.73 | | 51.8 | 45 Credit Hours = 1 CrdHr-SFTE |
| 4 | **Staffing** | | | | | |
| 5 | Full-time Equivalent Faculty | 1.981 | 2.000 | 1% | | Actual = Enrollment Reports FY06 |
| 6 | Part-time Equivalent Faculty | 0.495 | 0.476 | -4% | | Actual = Enrollment Reports FY06 |
| 7 | **Total Faculty FTE** | **2.476** | **2.476** | **0%** | | |
| 8 | **Budget** | | | | | |
| 9 | FT Faculty Dollars | 121,326 | 128,202 | 6% | | Actual = Banner FY06, Period 14 |
| 10 | PT Faculty Dollars | 19,715 | 30,428 | 54% | | Actual = Banner FY06, Period 14 |
| 11 | Lab Assistant Dollars | 9,904 | 36,177 | 265% | | Actual = Banner FY06, Period 14 |
| 12 | OPE | 76,032 | 100,563 | 32% | | Actual = Banner FY06, Period 14 |
| 13 | Materials and Supplies | 7,428 | 10,795 | 45% | | Actual = Banner FY06, Period 14 |
| 14 | Equipment | 9,904 | | - | | CARF $24,768 is not included |
| 15 | **Direct Instruction Costs** | **244,310** | **306,165** | **25%** | **239,835** | **Expenses are higher than expected.** |
| 16 | **Operating Ratios** | | | | | |
| 17 | R-SFTE/Total Faculty FTE | 27.01 | 26.40 | -2% | | |
| 18 | **CrdHr-SFTE/Total Faculty FTE** | **16.00** | **15.64** | **-2%** | | **Faculty are serving fewer students.** |
| 19 | Cost / R-SFTE | 3,654 | 4,684 | 28% | 3,650 | |
| 20 | Cost / CrdHr-SFTE | 6,167 | 7,905 | 28% | | **Cost per student is higher than expected.** |
| 21 | | | | | | |
| 22 | **Revenue** | | **Revenue** | **Difference** | **IRAP** | |
| 23 | Tuition | | 115,028 | | 154,757 | FY06 Tuition Rate x CrdHr SFTE x 45 |
| 24 | Program Fees (Differential) | | - | | - | Credit Hours x $27.92 |
| 25 | Public Support / Reimb SFTE | 3,765 | 246,143 | | 167,627 | TPS = $3,765 in Division; =$2,554 in IRAP |
| 26 | Other Instructional Revenue | | | | | |
| 27 | **Total Operating Revenue** | | **361,172** | | **322,384** | **Contribution to Total College Revenue** |
| 28 | Instructional Function Revenue | 54.5% | 196,839 | | | Based on Model's Functional Cost Ratios |
| 29 | **Direct Instruction Revenue** | **83.3%** | **163,964** | **-46%** | | **Expenses are Greater than Revenue** |
| 30 | | | | | | Faculty, Lab Assts, M&S, Equip Costs |
| 31 | Indirect Instruction Revenue | 16.7% | 32,875 | | | Portion of indirect instructional costs |
| 32 | Other Functions Revenue | 45.5% | 164,333 | | | Student Svs, College Svs, etc. |
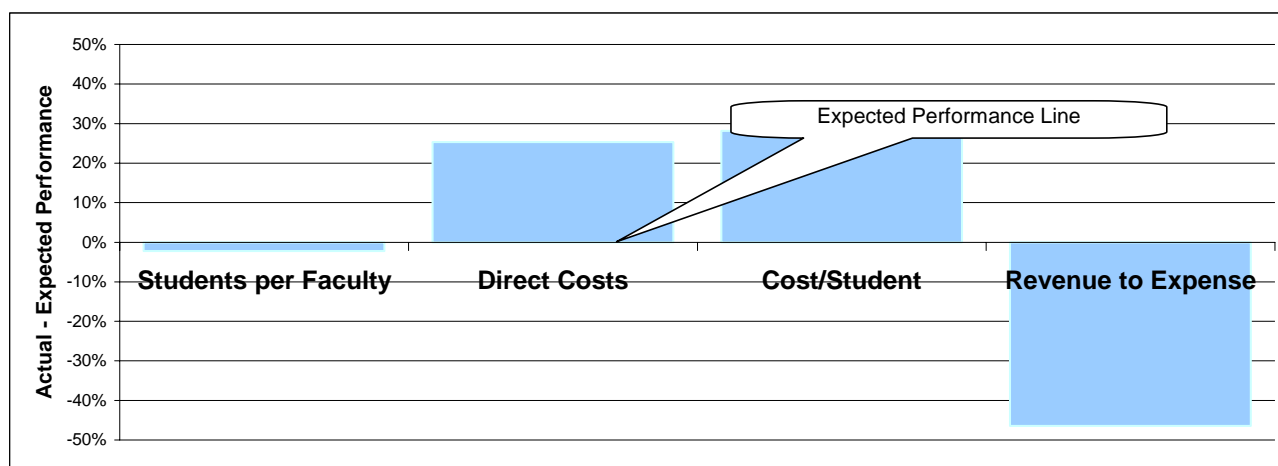


The Fabrication and Welding program produced 2% less student FTE than planned.  This created higher than expected direct costs and cost per student.  According to the IRAP data, the program's revenue is greater than its direct instructional expense.  When considering only 54.5% of the total revenue is spent by the instructional function and 83.3% of that is spent on direct instruction, the program spent 46% more than it produced in total revenue. This is about 21% too high for a medium cost program.

## Fabrication and Welding

| | Operating Data | FY 03 Actual | FY 04 Actual | FY 05 Actual | FY 06 Actual |
|---|---|---|---|---|---|
| 1 | Full-Time Faculty FTE | 2.000 | 2.000 | 2.000 | 2.000 |
| 2 | Part-Time Faculty FTE | 1.235 | 1.049 | 0.916 | 0.476 |
| 3 | Total Faculty FTE | 3.235 | 3.049 | 2.916 | 2.476 |
| 4 | Student FTE | 104.188 | 87.420 | 69.630 | 65.370 |
| 5 | SFTE / FFTE | 32.206 | 28.672 | 23.879 | 26.401 |
| 6 | | | | | |
| 7 | Full-Time Faculty | 110,070 | 114,255 | 120,718 | 128,202 |
| 8 | Part-Time Faculty | 30,111 | 38,237 | 35,318 | 30,428 |
| 9 | Lab Assistant | 19,359 | 34,738 | 36,313 | 36,177 |
| 10 | Other Payroll Expenses | 68,043 | 86,533 | 92,347 | 100,563 |
| 11 | Materials and Supplies | 14,943 | 27,471 | 18,368 | 10,795 |
| 12 | Total | 242,526 | 301,234 | 303,064 | 306,165 |
| 13 | Cost per Student FTE | 2,328 | 3,446 | 4,352 | 4,684 |

### Student Teacher Ratio

| FY 03 | FY 04 | FY 05 | FY 06 |
|---|---|---|---|
| 32.2 | 28.7 | 23.9 | 26.4 |

### Cost per Student FTE

| FY 03 | FY 04 | FY 05 | FY 06 |
|---|---|---|---|
| 2,328 | 3,446 | 4,352 | 4,684 |
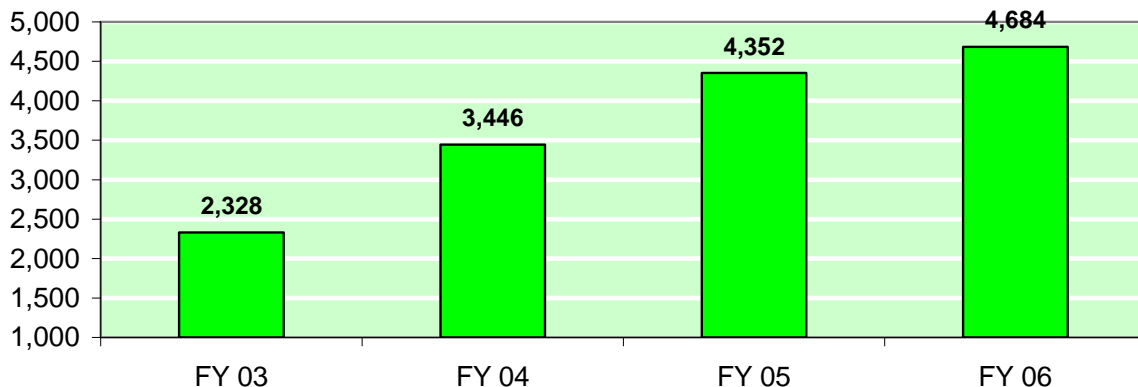
**Flight Technology**

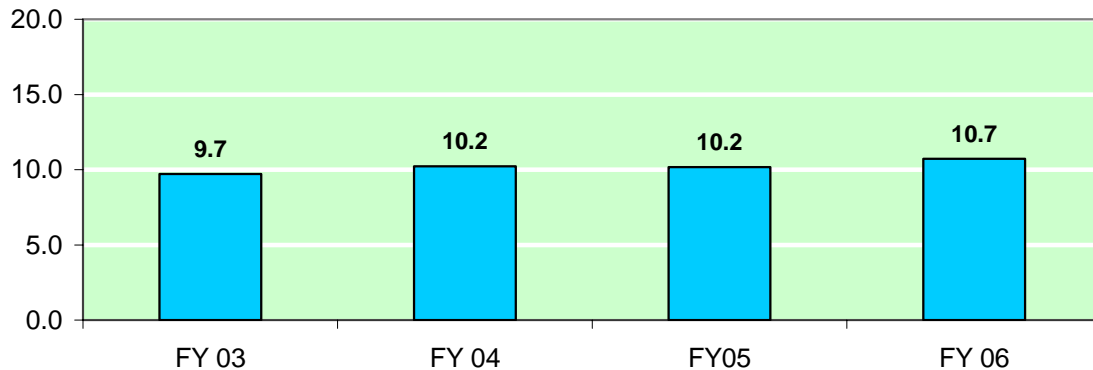| | Fiscal Year 2006 | Expected Model | Actual | Difference | IRAP | Analysis |
|---|---|---|---|---|---|---|
| 1 | **Enrollment** | **M** | | | | High, Medium or Low Cost Program |
| 2 | Reimbursable Student FTE | 77.82 | 85.80 | | 79.9 | 510 contact hours = 1 R-SFTE |
| 3 | Credit Hour Student FTE | 66.30 | 73.10 | | 72.9 | 45 Credit Hours = 1 CrdHr-SFTE |
| 4 | **Staffing** | | | | | |
| 5 | Full-time Equivalent Faculty | 3.315 | 2.000 | -40% | | Actual = Enrollment Reports FY06 |
| 6 | Part-time Equivalent Faculty | 0.829 | 2.144 | 159% | | Actual = Enrollment Reports FY06 |
| 7 | **Total Faculty FTE** | **4.144** | **4.144** | **0%** | | |
| 8 | **Budget** | | | | | |
| 9 | Student Fees | | (879,694) | | (834,315) | Actual = Banner FY06, Period 14 |
| 10 | FT Faculty Dollars | 203,059 | 129,929 | -36% | | Actual = Banner FY06, Period 14 |
| 11 | PT Faculty Dollars | 32,997 | 232,853 | 606% | | Actual = Banner FY06, Period 14 |
| 12 | Lab Assistant Dollars | 16,576 | - | - | | Actual = Banner FY06, Period 14 |
| 13 | Administrators Dollars | | 79,718 | | | Actual = Banner FY06, Period 14 |
| 14 | FT Classified | | 203,325 | | | Actual = Banner FY06, Period 14 |
| 15 | OPE | 127,252 | 315,786 | 148% | | Actual = Banner FY06, Period 14 |
| 16 | Materials and Supplies | 12,432 | 312,978 | 2418% | | Actual = Banner FY06, Period 14 |
| 17 | Equipment | 16,576 | | - | | Actual = Banner FY06, Period 14 |
| 18 | **Direct Instruction Costs** | **408,893** | **394,895** | **-3%** | **392,874** | **Expenses are lower than expected.** |
| 19 | **Operating Ratios** | | | | | |
| 20 | R-SFTE/Total Faculty FTE | 18.78 | 20.70 | 10% | | |
| 21 | **CrdHr-SFTE/Total Faculty FTE** | **16.00** | **17.64** | **10%** | | **Faculty are serving more students.** |
| 22 | Cost / R-SFTE | 5,254 | 4,603 | -12% | 4,918 | |
| 23 | Cost / CrdHr-SFTE | 6,167 | 5,402 | -12% | | **Cost per student is lower than expected.** |
| 24 | | | | | | |
| 25 | **Revenue** | | **Revenue** | **Difference** | | |
| 26 | Tuition | | 248,079 | | 217,949 | Actual = Banner FY06, Period 14 |
| 27 | Program Fees (Differential) | | - | | | |
| 28 | Public Support / CrdHr SFTE | 3,807 | 326,641 | | 304,415 | RFTE*$3,807 |
| 29 | Other Instructional Revenue | | | | | |
| 30 | **Total Operating Revenue** | | **574,720** | | **522,364** | Contribution to Total College Revenue |
| 31 | Instructional Function Revenue | 54.5% | 313,222 | | | Based on Model's Functional Cost Ratios |
| 32 | **Direct Instruction Revenue** | **100.0%** | **313,222** | **-21%** | | **Expenses are Greater than Revenue** |
| 33 | | | | | | Self Supporting Program |
| 34 | Indirect Instruction Revenue | 0.0% | - | | | Portion of indirect instructional costs |
| 35 | Other Functions Revenue | 45.5% | 261,497 | | | Student Svs, College Svs, etc. |
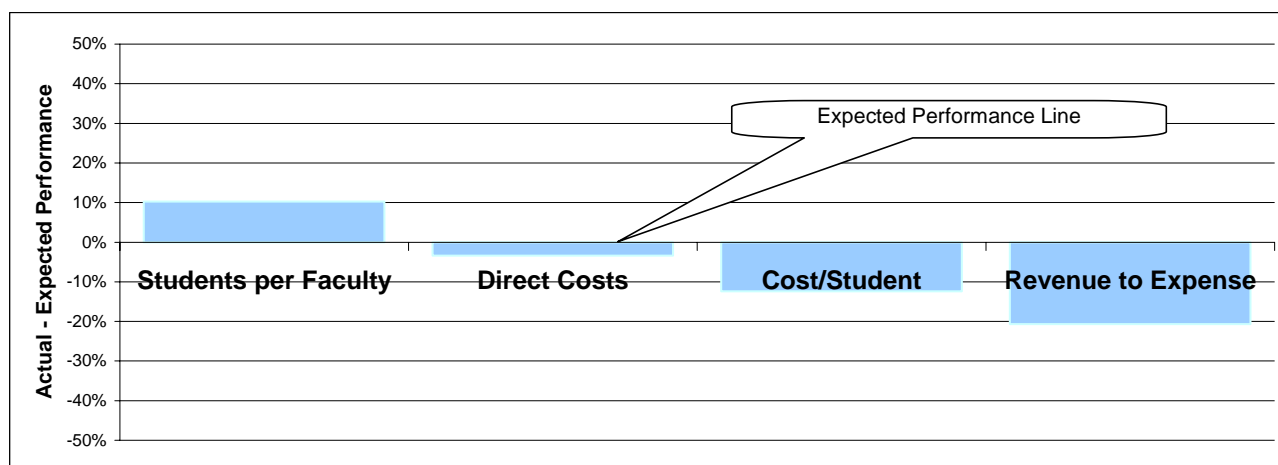


The Flight Technology program's actual performance was better than expected.  According to the IRAP data, the program's revenue is more than its direct instructional expense.  When considering only 54.5% of the total revenue is spent by the instructional function and 83.3% of that is spent on direct instruction, the program spent 21% more than it produced in total revenue.  This is good performance for a medium cost program.

**Flight Technology**

|    | Operating Data | FY 03 Actual | FY 04 Actual | FY05 Actual | FY 06 Actual |
|----|----------------|--------------|--------------|-------------|--------------|
| 1  | Full-Time Faculty FTE | 2.000 | 2.000 | 2.000 | 2.000 |
| 2  | Part-Time Faculty FTE | 8.185 | 7.213 | 6.470 | 2.144 |
| 3  | Total Faculty FTE | 10.185 | 9.213 | 8.470 | 8.000 |
| 4  | Student FTE | 99.000 | 94.180 | 86.140 | 85.800 |
| 5  | SFTE / FFTE | 9.720 | 10.223 | 10.170 | 10.725 |
| 6  |  |  |  |  |  |
| 7  | Full-Time Faculty | 114,422 | 116,754 | 122,234 | 129,929 |
| 8  | Part-Time Faculty | 258,953 | 240,205 | 226,796 | 232,853 |
| 9  | Program Support Personnel | 235,334 | 251,612 | 269,903 | 283,043 |
| 10 | Other Payroll Expenses | 264,458 | 261,401 | 297,644 | 315,786 |
| 11 | Materials and Supplies | 385,788 | 292,279 | 301,939 | 312,978 |
| 12 | Subtotal | 1,258,955 | 1,162,251 | 1,218,516 | 1,274,589 |
| 13 | Student Fees Deduction | -914,795 | -813,823 | -784,315 | -879,694 |
| 14 | Total | 344,160 | 348,427 | 434,201 | 394,895 |
| 15 | Cost per Student FTE (85%) | 2,955 | 3,145 | 4,285 | 3,912 |

## Student Teacher Ratio



| FY 03 | FY 04 | FY05 | FY 06 |
|-------|-------|------|-------|
| 9.7 | 10.2 | 10.2 | 10.7 |

## Cost per Student FTE



| FY 03 | FY 04 | FY05 | FY 06 |
|-------|-------|------|-------|
| 2,955 | 3,145 | 4,285 | 3,912 |
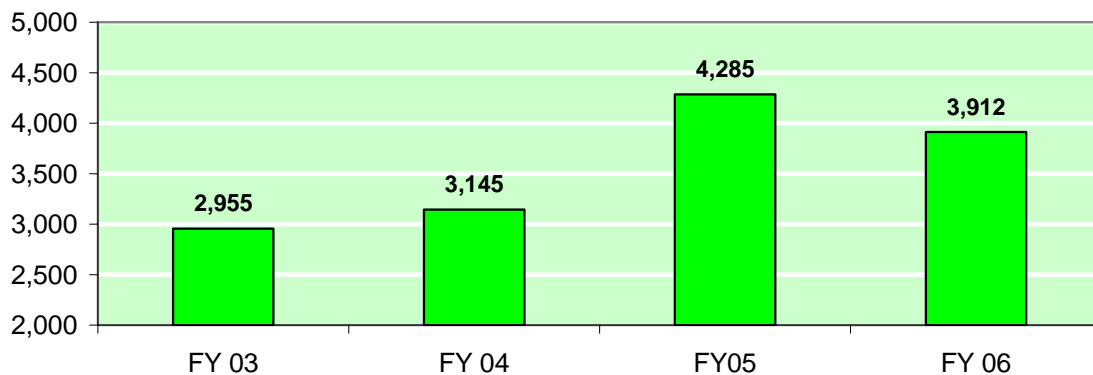
**Manufacturing**

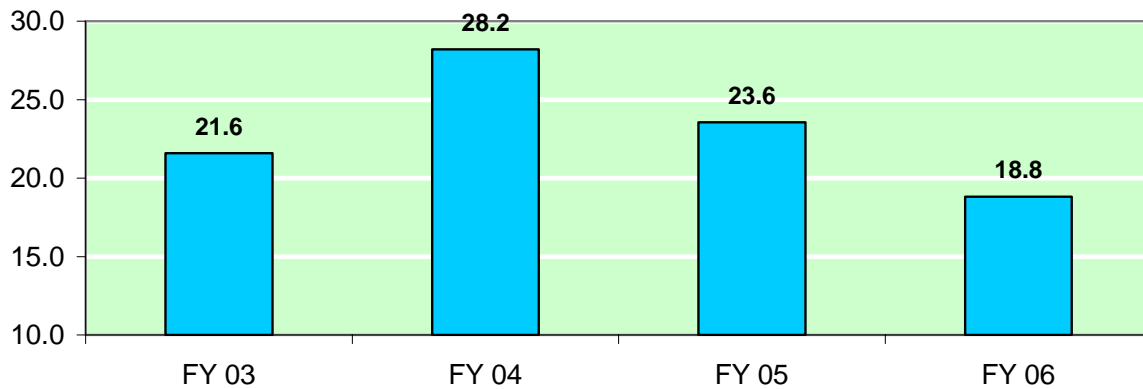| Fiscal Year 2006 | Expected Model | Actual | Difference | IRAP | Analysis |
|---|---|---|---|---|---|
| 1 **Enrollment** | M | | | | **H**igh, **M**edium or **L**ow Cost Program |
| 2 Reimbursable Student FTE | 43.19 | 27.76 | | 26.5 | 510 contact hours = 1 R-SFTE |
| 3 Credit Hour Student FTE | 23.62 | 15.18 | | 17.2 | 45 Credit Hours = 1 CrdHr-SFTE |
| 4 **Staffing** | | | | | |
| 5 Full-time Equivalent Faculty | 1.181 | 1.000 | -15% | | Actual = Enrollment Reports FY06 |
| 6 Part-time Equivalent Faculty | 0.295 | 0.476 | 61% | | Actual = Enrollment Reports FY06 |
| 7 **Total Faculty FTE** | **1.476** | **1.476** | **0%** | | |
| 8 **Budget** | | | | | |
| 9 FT Faculty Dollars | 72,325 | 54,103 | -25% | | Actual = Banner FY06, Period 14 |
| 10 PT Faculty Dollars | 11,753 | 17,531 | 49% | | Actual = Banner FY06, Period 14 |
| 11 Lab Assistant Dollars | 5,904 | 3,305 | -44% | | Actual = Banner FY06, Period 14 |
| 12 OPE | 45,324 | 37,484 | -17% | | Actual = Banner FY06, Period 14 |
| 13 Materials and Supplies | 4,428 | 2,084 | -53% | | Actual = Banner FY06, Period 14 |
| 14 Equipment | 5,904 | | - | | Actual = Banner FY06, Period 14 |
| 15 **Direct Instruction Costs** | **145,638** | **114,507** | **-21%** | **121,573** | **Expenses are lower than expected.** |
| 16 **Operating Ratios** | | | | | |
| 17 R-SFTE/Total Faculty FTE | 29.26 | 18.81 | -36% | | |
| 18 **CrdHr-SFTE/Total Faculty FTE** | **16.00** | **10.28** | **-36%** | | **Faculty are serving fewer students.** |
| 19 Cost / R-SFTE | 3,372 | 4,125 | 22% | 4,590 | |
| 20 Cost / CrdHr-SFTE | 6,167 | 7,543 | 22% | | **Cost per student is higher than expected.** |
| 21 | | | | | |
| 22 **Revenue** | | **Revenue** | **Difference** | **IRAP** | |
| 23 Tuition | | 45,085 | | 51,298 | FY06 Tuition Rate x CrdHr SFTE x 45 |
| 24 Program Fees (Differential) | | 19,072 | | 16,576 | Credit Hours x $27.92 |
| 25 Public Support / Reimb SFTE | 3,765 | 104,527 | | 67,674 | TPS = $3,765 in Division; =$2,554 in IRAP |
| 26 Other Instructional Revenue | | | | | |
| 27 **Total Operating Revenue** | | **168,684** | | **135,548** | Contribution to Total College Revenue |
| 28 Instructional Function Revenue | 54.5% | 91,933 | | | Based on Model's Functional Cost Ratios |
| 29 **Direct Instruction Revenue** | **83.3%** | **76,579** | **-33%** | | **Expenses are Greater than Revenue** |
| 30 | | | | | Faculty, Lab Assts, M&S, Equip Costs |
| 31 Indirect Instruction Revenue | 16.7% | 15,354 | | | Portion of indirect instructional costs |
| 32 Other Functions Revenue | 45.5% | 76,751 | | | Student Svs, College Svs, etc. |
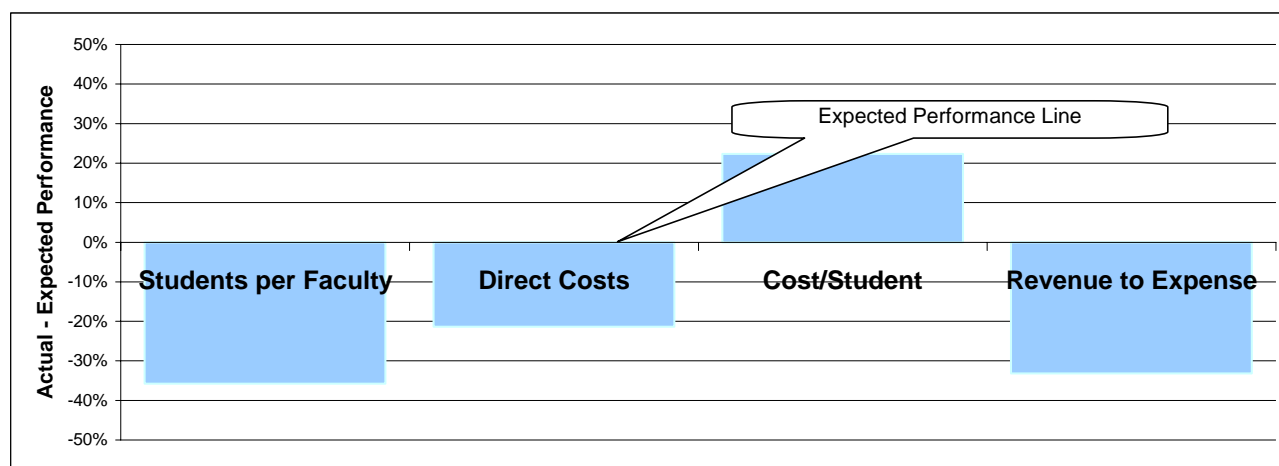


The Manufacturing program produced 36% less student FTE than planned.  This created a higher cost per student, however the direct costs were 21% lower than expected.  According to the IRAP data, the program's revenue is greater than its direct instructional expense.  When considering only 54.5% of the total revenue is spent by the instructional function and 83.3% of that is spent on direct instruction, the program spent 33% more than it produced in total revenue. This is about 8% too high for a medium cost program.

## Manufacturing Technology

| | Operating Data | FY 03 Actual | FY 04 Actual | FY 05 Actual | FY 06 Actual |
|---|---|---|---|---|---|
| 1 | Full-Time Faculty FTE | 1.000 | 1.000 | 1.000 | 1.000 |
| 2 | Part-Time Faculty FTE | 0.500 | 0.476 | 0.476 | 0.476 |
| 3 | Total Faculty FTE | 1.500 | 1.476 | 1.476 | 1.476 |
| 4 | Student FTE | 32.368 | 41.620 | 34.760 | 27.760 |
| 5 | SFTE / FFTE | 21.579 | 28.198 | 23.550 | 18.808 |
| 6 | | | | | |
| 7 | Full-Time Faculty | 48,184 | 47,646 | 51,015 | 54,103 |
| 8 | Part-Time Faculty | 18,962 | 17,505 | 23,712 | 17,531 |
| 9 | Lab Assistant | 2,679 | 9,569 | 7,756 | 3,305 |
| 10 | Other Payroll Expenses | 24,289 | 32,520 | 39,499 | 37,484 |
| 11 | Materials and Supplies | 2,336 | 5,497 | 2,254 | 2,084 |
| 12 | Total | 96,450 | 112,737 | 124,236 | 114,507 |
| 13 | Cost per Student FTE | 2,980 | 2,709 | 3,574 | 4,125 |

### Student Teacher Ratio
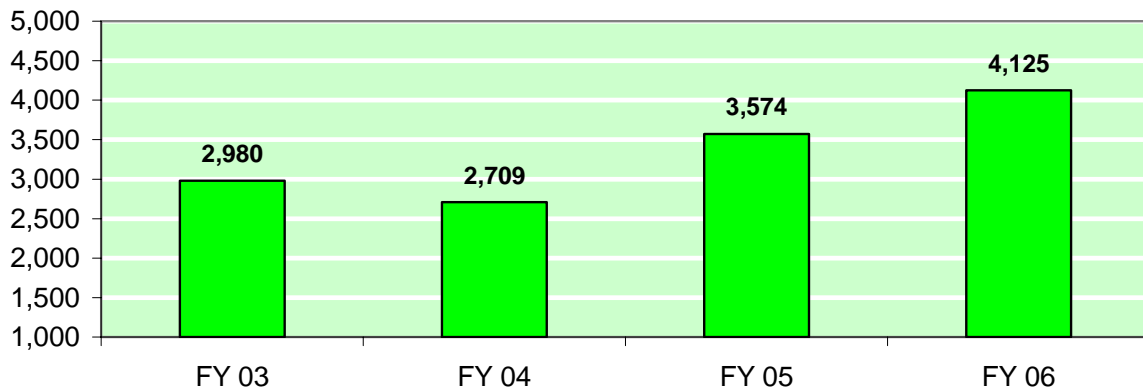
| | FY 03 | FY 04 | FY 05 | FY 06 |
|---|---|---|---|---|
| | 21.6 | 28.2 | 23.6 | 18.8 |

### Cost per Student FTE

| | FY 03 | FY 04 | FY 05 | FY 06 |
|---|---|---|---|---|
| | 2,980 | 2,709 | 3,574 | 4,125 |

**Advanced Technology Division Office**

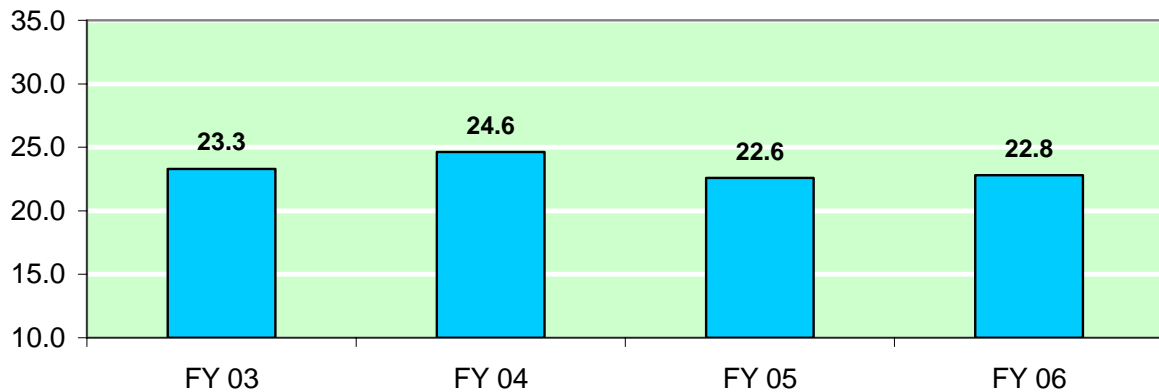| | Fiscal Year 2006 | Expected Model | Actual | Difference | IRAP | Analysis |
|---|---|---|---|---|---|---|
| 1 | **Enrollment** | | | | | |
| 2 | Reimbursable Student FTE | | | | | |
| 3 | Credit Hour Student FTE | | | | | |
| 4 | **Staffing** | | | | | |
| 5 | Administrator | 0.981 | 1.000 | 2% | | |
| 6 | Classified | 3.255 | 3.830 | 18% | | |
| 7 | **Total Office Staff** | **4.236** | **4.830** | **14%** | | |
| 8 | **Budget** | | | | | |
| 9 | Manager | 77,284 | 89,335 | 16% | | Actual = Banner FY06, Period 14 |
| 10 | Classified | 127,209 | 163,223 | 28% | | Actual = Banner FY06, Period 14 |
| 11 | Lab Assistant Dollars | | 1,073 | | | Actual = Banner FY06, Period 14 |
| 12 | OPE | 108,381 | 136,307 | 26% | | Actual = Banner FY06, Period 14 |
| 13 | Materials and Supplies | 7,137 | 30,598 | 329% | | Actual = Banner FY06, Period 14 |
| 14 | Equipment | 4,236 | | | | Actual = Banner FY06, Period 14 |
| 15 | **Indirect Instruction Costs** | **324,247** | **420,536** | **30%** | **121,573** | **Expenses are higher than expected.** |
| 16 | **Operating Ratios** | | | | | |
| 17 | R-SFTE/Total Faculty FTE | | | | | |
| 18 | **CrdHr-SFTE/Total Faculty FTE** | | | | | |
| 19 | Cost / R-SFTE | | | | | |
| 20 | Cost / CrdHr-SFTE | | | | | |
| 21 | | | | | | |
| 22 | **Revenue** | | **Revenue** | **Difference** | **IRAP** | |
| 23 | Tuition | | - | | | |
| 24 | Program Fees (Differential) | | - | | | |
| 25 | Public Support / CrdHr SFTE | | - | | | |
| 26 | Other Instructional Revenue | | | | | |
| 27 | **Total Operating Revenue** | | **-** | | | |
| 28 | Instructional Function Revenue | | | | | |
| 29 | **Direct Instruction Revenue** | | | | | |
| 30 | | | | | | |
| 31 | Indirect Instruction Revenue | | | | | |
| 32 | Other Functions Revenue | | | | | |
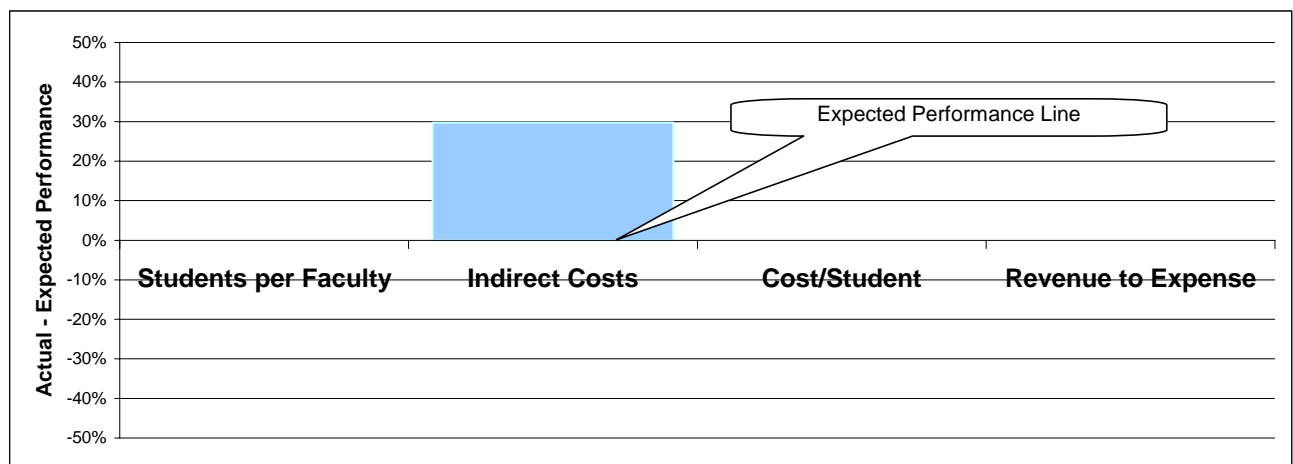


The division's indirect costs were 30% higher than planned.  This was due to the decline in student FTE (-10% in four years) and in increased cost in fixed salaries.  The division reduced its FY07 indirect budget by $150,000.

## Division Summary - (Without Flight Tech)

|    | Operating Data | FY 03 Actual | FY 04 Actual | FY 05 Actual | FY 06 Actual |
|----|----------------|-------------|-------------|-------------|-------------|
| 1  | Full-Time Faculty FTE | 17.750 | 16.483 | 17.341 | 16.750 |
| 2  | Part-Time Faculty FTE | 4.910 | 4.642 | 3.312 | 3.195 |
| 3  | Total Faculty FTE | 22.660 | 21.125 | 20.653 | 19.945 |
| 4  | Student FTE | 527.928 | 520.400 | 466.530 | 454.830 |
| 5  | SFTE / FFTE | 23.298 | 24.634 | 22.589 | 22.804 |
| 6  |  |  |  |  |  |
| 7  | Full-Time Faculty | 926,191 | 904,464 | 991,602 | 1,038,347 |
| 8  | Part-Time Faculty | 169,875 | 166,551 | 122,265 | 156,684 |
| 9  | Lab Assistant | 58,839 | 83,750 | 79,425 | 82,159 |
| 10 | Other Payroll Expenses | 435,201 | 540,171 | 605,361 | 660,763 |
| 11 | Materials and Supplies | 69,052 | 94,652 | 64,193 | 62,572 |
| 12 | Total | 1,659,158 | 1,789,589 | 1,862,846 | 2,000,525 |
| 13 | Cost per Student FTE | 3,143 | 3,439 | 3,993 | 4,398 |

**Student Teacher Ratio**
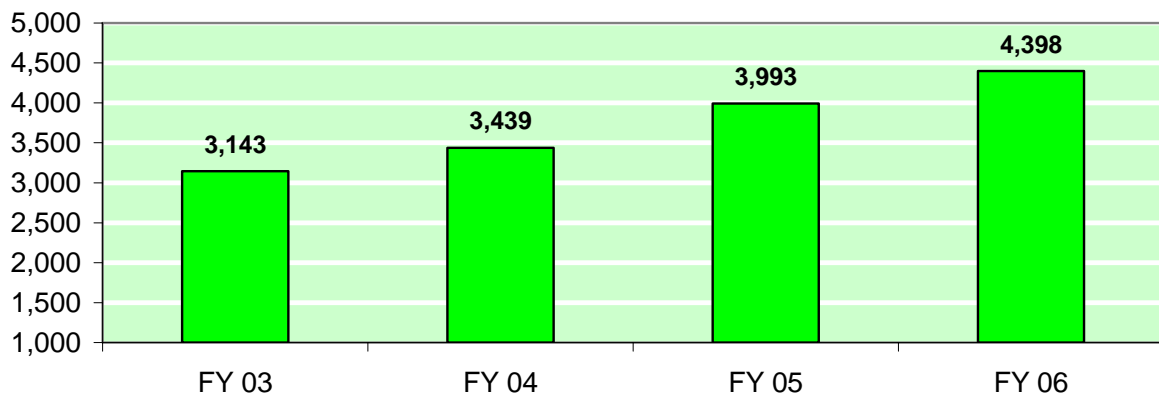
| FY 03 | FY 04 | FY 05 | FY 06 |
|-------|-------|-------|-------|
| 23.3 | 24.6 | 22.6 | 22.8 |

**Cost per Student FTE**

| FY 03 | FY 04 | FY 05 | FY 06 |
|-------|-------|-------|-------|
| 3,143 | 3,439 | 3,993 | 4,398 |

**Advanced Technology Division - (Flight Technology)**

| | Benchmark Drivers | Program Costs | | | Comments |
|---|---|---|---|---|---|
| | | **High** | **Medium** | **Low** | |
| 1 | Student FTE / Faculty FTE | 10 | 16 | 25 | Differentiate student/faculty ratios by program type |
| 2 | Full-Time Faculty Ratio | 90% | 80% | 70% | Full-time ratio is higher in higher cost programs |
| 3 | Part-Time Faculty Ratio | 10% | 20% | 30% | Part-time ratio is lower in higher cost programs |
| 4 | Full-Time Faculty Salary | 61,251 | 61,251 | 61,251 | Average FY06 Full Time Faculty Salary |
| 5 | Part-Time Faculty Salary | 39,813 | 39,813 | 39,813 | 65% of the Average FT Faculty Salary |
| 6 | Instruct Assistant Dollars / FFTE | 5,000 | 4,000 | 2,500 | Instruction Assistant dollars per faculty FTE |
| 7 | Management Positions | 5% | 5% | 5% | 1 manager for 20 faculty FTE |
| 8 | Management Salary | 78,811 | 78,811 | 78,811 | Average FY07 manager projected salary |
| 9 | Classifed Support / FFTE | 20% | 15% | 10% | Classified support per faculty FTE |
| 10 | Classified Salary | 39,078 | 39,078 | 39,078 | Average FY07 classified projected salary |
| 11 | Full-Time Indirect Salary | 53.0% | 53.0% | 53.0% | Lane's other personnel expenses percent for full-time |
| 12 | Part-Time Indirect Salary | 39.6% | 39.6% | 39.6% | Lane's other personnel expenses for part-time |
| 13 | Operating Expenses/FFTE | 4,000 | 3,000 | 2,000 | |
| 14 | Op Expenses/Classified & Mgr | 2,000 | 1,500 | 1,000 | |
| 15 | Equipment / FFTE | 5,000 | 4,000 | 3,000 | |
| 16 | Equipment / Classified & Mgr | 1,000 | 1,000 | 1,000 | |
| 17 | Research and Development | 2% | 2% | 2% | Percent of the instructional budget - learning initiatives |
| 22 | **Benchmark Costs** | **High** | **Medium** | **Low** | **Total** | **Actual** | **Difference** |
| 25 | **Student CrdHr FTE** | 63 | 214 | | 276 | 276 | 0% |
| 26 | Faculty Positions | 6.27 | 13.34 | - | 19.61 | 19.84 | 1% |
| 27 | Full Time Faculty | 5.64 | 10.68 | - | 16.32 | 16.75 | 3% |
| 28 | Part Time Faculty | 0.63 | 2.67 | - | 3.30 | 3.09 | -6% |
| 29 | Management Positions | 0.31 | 0.67 | - | 0.98 | 1.00 | 2% |
| 30 | Classified Support Positions | 1.25 | 2.00 | - | 3.26 | 3.83 | 18% |
| 31 | Full Time Faculty Dollars | 345,529 | 653,885 | - | 999,414 | 1,038,347 | 4% |
| 32 | Part Time Faculty Dollars | 24,955 | 106,256 | - | 131,211 | 156,684 | 19% |
| 33 | Instructional Assistants Dollars | 31,340 | 53,378 | - | 84,718 | 82,159 | -3% |
| 34 | Management Dollars | 24,699 | 52,584 | - | 77,284 | 89,335 | 16% |
| 35 | Classifed Dollars | 48,988 | 78,221 | - | 127,209 | 163,223 | 28% |
| 36 | Faculty Materials and Supplies | 25,072 | 40,033 | - | 65,105 | 39,068 | -40% |
| 37 | Classified & Mgr M&S | 3,134 | 4,003 | - | 7,137 | 30,598 | 329% |
| 38 | Faculty Equipment | 31,340 | 53,378 | - | 84,718 | 3,236 | |
| 39 | Classified & Mgr Equipment | 1,567 | 2,669 | - | 4,236 | - | |
| 40 | Combined OPE | 244,478 | 479,101 | - | 723,578 | 797,070 | |
| 41 | Research and Development | 10,732 | 20,888 | - | 31,621 | - | |
| 42 | **Total Instruction Costs** | **791,835** | **1,544,395** | **-** | **2,336,230** | **2,399,720** | **3%** |
| 43 | Instruction Cost/Student FTE | 12,633 | 7,233 | | 8,459 | 8,689 | 3% |

| | |
|---|---|
| 2,323,166 | 2,421,061 |
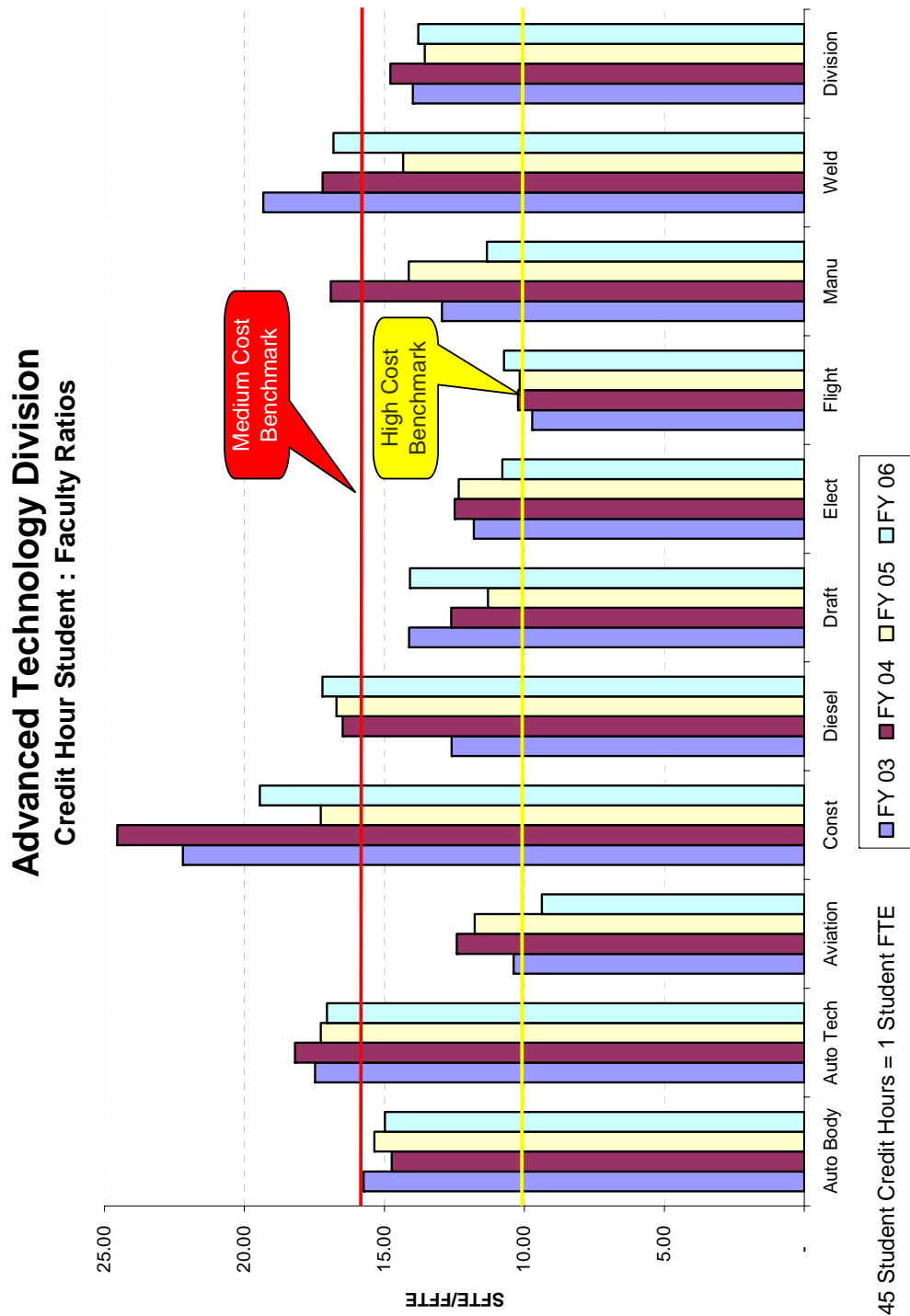
**Advanced Technology Division**
**Credit Hour Student : Faculty Ratios**



45 Student Credit Hours = 1 Student FTE

**Advanced Technology Division**

Percent Variance Ratio: Actual/Expected Performance

FY 2006

DIV: FT, MT, FW, ET*, DR, DT, CT, AV*, AT, AB

■ Students per Faculty   ■ Direct Costs   □ Cost/Student   □ Revenue to Expense

* Aviation and Electronics are high cost programs all others are medium cost programs.

50%  40%  30%  20%  10%  0%  -10%  -20%  -30%  -40%  -50%
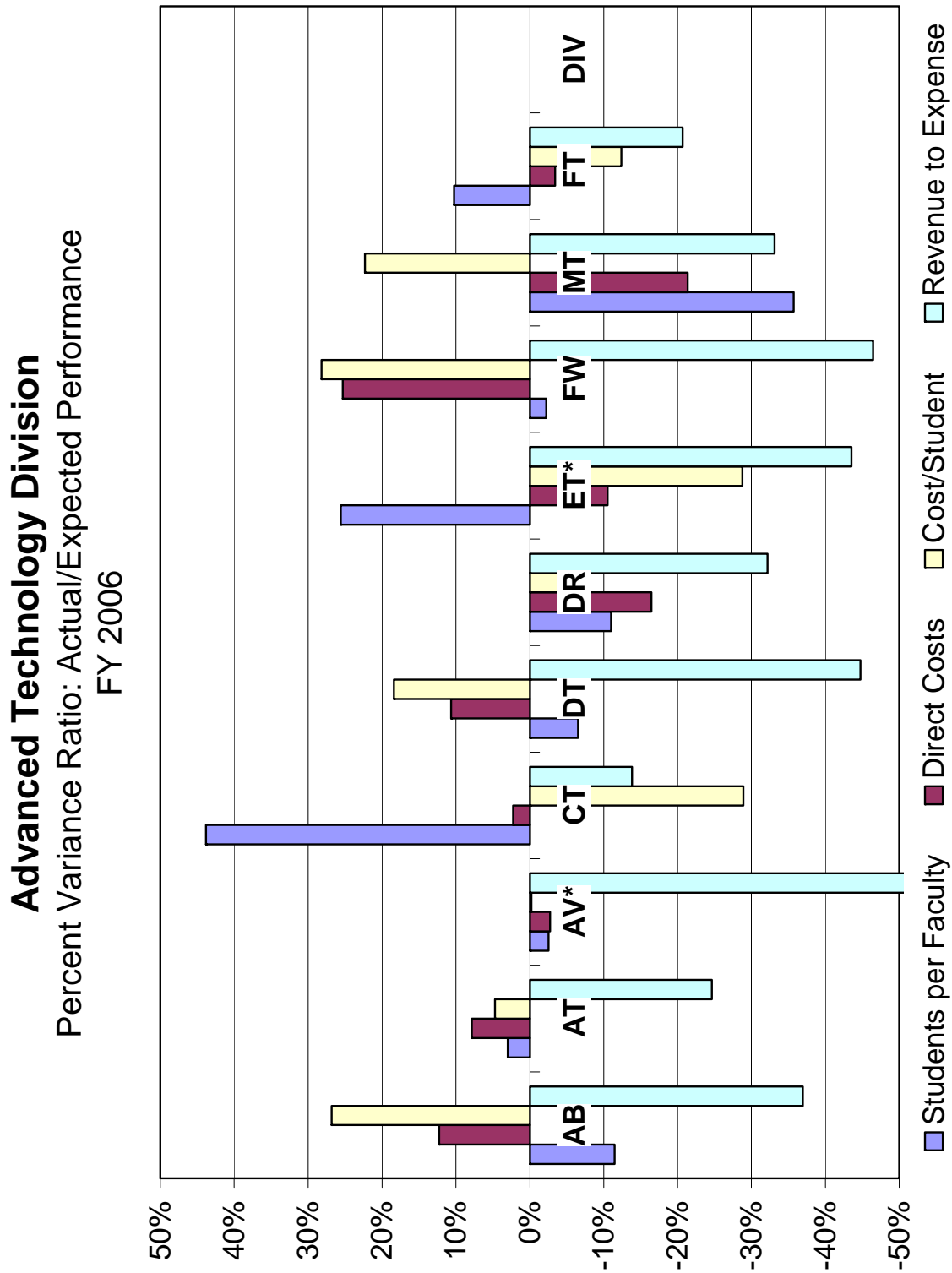
# Advanced Technology Division
## *Unit Plan for FY 2008*

# Section II: Program Analysis

## Analyses

Accomplishments
Assessments
Areas Needing Attention
Strengths
Challenges
Conclusions

## Appendices

Operating Assessment Criteria
Course/Program Assessment

1. **What did your unit accomplish last year in relationship to your 04-05 and 05-06 planning initiatives?  What were other accomplishments not related to the annual planning initiatives?**

## *Division Summary*

| Advanced Technology FY06 Accomplishments | Strategic Directions Goals: 1—8 | Learning Plan Goals: 1—26 | Student Affairs Plan Goals: 1—14 |
|---|---|---|---|
| Electronics: New curriculum in robotics and STAMP technologies. Automotive, Welding and Manufacturing: Expanded RTEC curricula for high school students on and off campus. Four first year Diesel students placed 1st, 2nd, 3rd, and 4th in the state VICA Skills USA competition. | 1 | 1, 3, 4, 7, 10 | 4 |
| Autobody, Automotive, Construction, Diesel, Drafting, Electronics, Manufacturing, and Welding developed and published program assessment criteria in their unit plans.  Program assessment includes employability, technical and core academic skill attainment.  The advisory committees agreed to monitor the program assessment process. | 2 | 25, 26 | |
| The Automotive, Manufacturing and Welding programs partnered with the RTEC to deliver on campus courses for high school students. The Electronics program faculty worked with Hynix corporation to implement an employment interview practicum for graduating students. The RTEC faculty worked with a RV consortium to design a non-credit training program for entry level employment in the RV industry. | 3 | 8, 10 | 6, 11 |
| The Construction program partnered with RTEC to offer a summer academy for women. | 4 | 11 | 11, 14 |
| Drafting: Updated matrix of required professional skills based on industry interviews, advisory committee, and research from national professional organizations.  Mapped skills to existing courses; performed gap analysis.  Revised program curriculum and course outcomes.  Eliminated emphasis areas, resulting in increased enrollment per course. | 1, 2, 3 | 1, 3, 4, 9, 10 | 2, 7, 9, 14 |
| Over $500,000 was allocated to the division programs from capital asset replacement, Carl Perkins, and technology fee funding.  These allocations were based on the FY05 unit planning requests to enhance and maintain the curricula, facilities and equipment. | 5 | 1, 4, 6, 15, 19 | 12 |
| The division saved $60,000 in general funds to help with the FY06 college shortfall.  The division reduced its recurring operating budget by $265,111 to help with the FY07 college shortfall. | 6 | | |

| | FY07 Budget Reductions Advanced Technology Division | Reduced FTE | M&S | Salary | OPE | Total |
|---|---|---|---|---|---|---|
| 1 | PT Faculty | | | 65,000 | 26,130 | 91,130 |
| 2 | Division | | 25,000 | | | 25,000 |
| 3 | PT Classified | | | 11,277 | 4,533 | 15,810 |
| 4 | Contracted Classified | 2.67 | | 98,201 | 34,970 | 133,171 |
| | **Division Recurring Reductions** | **2.67** | **25,000** | **174,478** | **65,633** | **265,111** |

## *Auto Body*

| Capital FY06 | Flex Rack System – Four Towers | 45,500 |
|---|---|---|
| Perkins FY06 | Air Transformers + installation | 5,500 |
| Perkins FY06 | Vacuum system + installation | 20,000 |
| Technology FY07 | Software upgrades | 2,400 |

## *Automotive*

| Capital FY06 | Computer Training Courseware | 6,000 |
|---|---|---|
| Capital FY06 | Performance Analyzer | 14,890 |

| Capital FY06 | Front End Alignment Rack | 19,754 |
|---|---|---|
| Capital FY06 | Interrogator II Analyzer | 20,893 |
| Perkins FY07 | Automotive Computer Lab, Trainers and Learning Management | 117,500 |

### *Aviation Maintenance*

| Perkins FY06 | Riveting Kits | 2,000 |
|---|---|---|
| Perkins FY06 | Magnaflux repair and certification | 5,000 |
| Perkins FY06 | Eddy current flaw detector | 6,000 |
| Perkins FY06 | Ultrasonic flaw detector | 6,900 |
| Perkins FY06 | Avionics lab text equipment | 10,000 |
| Technology FY07 | Computer lab (20 stations) | 20,000 |

### *Diesel*

| Capital FY06 | Hydraulic Analyzer | 6,125 |
|---|---|---|
| Capital FY06 | Fork lift, NFS | 15,488 |
| Capital FY06 | ROPS Tractor | 17,218 |
| Perkins FY06 | Power train lab station | 20,000 |
| Perkins FY06 | Diesel engine repair lab station | 20,000 |
| Perkins FY06 | Fuel system lab station | 20,000 |

The Diesel Program placed 1st, 2nd, 3rd and fourth at the state Skills USA conference and also placed 11th at the national Skills USA conference.

### *Drafting*

| Curriculum FY06 | DRF 167 CAD online course development | 7,382 |
|---|---|---|
| Curriculum FY06 | MRP market research | 2,583 |
| Technology FY07 | AutoCad software license | 10,000 |

**Initiative 1. Market Research**
Our first initiative was partially funded.  We received $2583.  It was entitled "Market Research," although the project itself involved making Drafting classes more like simulated workplaces by implementing a part-numbering and bill-of-material system.

This is what we accomplished with initiative 1:
This project followed up on input from site visits, conversations with employers, and conversations with employed former students.  It involved creation of a part numbering system, simulated MRP data, and bill of material forms, part of the overall departmental effort to make Drafting classes more like simulated workplaces.  This allows students in second-year mechanical drafting courses to create bills of material for each drawing they create, allowing them to build real-world skills and to feel comfortable with the kind of work they will actually perform on the job.

**Initiative 2: Curriculum FY06**
A CAD 1 online class was created.

**Initiative 3: Revise First-Year Program**
Although the original plan was to revise the first-year program, we actually revised the entire two-year degree, moving it from a three-emphasis program (in which small cohorts of students enrolled in discrete emphasis area courses, resulting in small class sizes) to a common core, where all students take the same classes.  The result has been significant increase in class enrollment and greatly-improved student-faculty ratios.  This curriculum redesign was done with no college funding.

**Initiative 4: Curriculum FY06, new course**

New curriculum for ENGR 115, Engineering Graphics, was developed.  This curriculum has been approved and is now offered as part of the Pre-engineering suggested course of study for students transferring to OSU's Engineering programs.

**Initiative 5: Faculty Professional Development**
One faculty member accessed Faculty Professional Development money to attend one software training seminar, attend one trade show, and enroll in one online course from OIT.  These activities will directly benefit students through increased skills and knowledge of the faculty member.

**Initiative 6: Tutors and Classroom Assistants:**
No funding was awarded.  As a result, no progress was made on this initiative.

**Initiative 7: Teaching Aids and Hands-On Learning Tools**
No funding was awarded.  As a result, no progress was made on this initiative.

**Initiative 8: Virtual Field Trips**
No funding was awarded.  As a result, no progress was made on this initiative.

**Other Accomplishments:**
Research was conducted and a less expensive resource was found for purchasing software, thereby saving the college out-of-pocket dollars.

## *Electronics*

| | | |
|---|---|---|
| Capital FY06 | Oscilloscope logic analyzer | 8,585 |
| Perkins FY06 | 20 Altera UP-2 circuit boards and software | 4,000 |
| Perkins FY06 | Incorporate Ethernet technology | 8000 |
| Perkins FY06 | 2 robots for the process control courses | 17,500 |
| Technology Fee | LCD overhead projector | 3,500 |

## *Fabrication/Welding*

| | | |
|---|---|---|
| Capital FY06 | Fork lift | 24,550 |
| Perkins FY06 | Industrial vertical bandsaw | 22,000 |
| Technology Fee | Networked laser printer | 2,000 |
| Technology Fee | Student computer laboratory (30 stations) | 31,000 |

## *Flight Technology*

| | | |
|---|---|---|
| Perkins FY06 | Cessna 152 avionics | 3,700 |
| Perkins FY06 | Digital avionics system | 16,500 |

## *Manufacturing*

| | | |
|---|---|---|
| Capital FY06 | Vertical milling machine | 5,000 |
| Capital FY06 | 3 lathes | 24,000 |
| Capital FY06 | Surface grinder | 15,344 |
| Perkins FY06 | Instructional videos | 3,000 |
| Curriculum FY06 | Interactive CNC/CAM course | 7,382 |
| Technology FY07 | 12 computer stations | 18,000 |
| Technology FY07 | MasterCAM software | 18,000 |

## *Division*

| | | |
|---|---|---|
| Perkins FY06 | RTEC startup materials | 16,500 |

| Enrollment FY06 | RTEC instructional program startup costs | 10,000 |
| Curriculum FY07 | RTEC curriculum Manufacturing, Metals, Mechanics | 22,001 |

2.  **What assessment activities did your unit undertake last year? In this section, please review and revise assessment plans submitted last year and identify the progress made on last year's assessment plan.  Attach the revised assessment plan.**

All of the programs in the division assess the following areas:

**Achieving the Learning Outcomes** - Program learning outcomes identify the skills and knowledge students will have when they complete the program and enter the workforce.  The faculty have implemented a learning outcomes assessment process to analyze the discrepancies between the planned performance indicators and the actual performance of the student program completers.

**Achieving the Operating Outcomes** - Program operating outcomes identify the desired operating performance indicators for program effectiveness and efficiency. The division has established a set of operating benchmarks and trend indicators for this program. These indicators include analyses for enrollments, retention, success, diversity, staffing ratios, and cost ratios.  The faculty have implemented a program operating outcomes assessment process to analyze the discrepancies between the planned program operating performance indicators and the actual operating performance.

**Maintaining the Learning Environment.**  The program should continuously maintain, upgrade and improve its existing human, curriculum, equipment, software, and facility resources. Staff and curriculum need to maintain currency and relevance to the changes in the discipline, technology and the workforce.  The existing equipment inventory has a defined annual life cycle cost to maintain. The status of the program's equipment inventory is reviewed. Obsolete, inoperable, unsafe or ineffective equipment is identified for replacement.

**Enhancing the Learning Environment**.  The program should enhance its learning environment to appropriately respond to new opportunities and challenges.  The program should acquire and incorporate new human, curriculum, equipment, software and facility resources to continuously improve its efficiency and effectiveness.

### Auto Body
Assessment Plans = Appendix 1-3

### Automotive
Assessment Plans = Appendix 4-6

### Aviation Maintenance
Assessment Plans = Appendix 7-9
Implement a new computer based training lab with twelve avionics electronics trainers and two digital trainers. These trainers carry a lifetime warranty, excluding damage from theft or vandalism. The CAI Software is a site license, and will cover as many computer stations as required, including any future expansions of the program.
    = $34,495.00
    Electricity/Electronics Trainers
    Digital Systems Trainer s
    CAI Software Package
    Site License

### Construction
Assessment Plans = Appendix 10-12

### Diesel
Assessment Plans = Appendix 13-15
Faculty assess the need to adapt and or create new instructional opportunities.  This assessment involves investigating the emerging technology needs of local industries.  Additionally, the faculty research national and regional trends through reviewing the literature and talking with other professional colleagues.

### Drafting
Assessment Plans = Appendix 16-18
The Drafting program developed the matrix entitled "Program Learning Outcomes" and mapped outcomes and college core abilities to each course, indicating in which course this was primary learning and in which courses some outcomes were met.  The revised "Program Learning Outcomes" matrix is attached.

### Electronics
Assessment Plans = Appendix 19-21
The program partnered with Hynix to provide students a practice interview.  Hynix human resources staff conducted the interviews.  Feedback was given to the students and the faculty.

### Fabrication/Welding
Assessment Plans = Appendix 22-24
- The program initiated an "exit interview" process for students leaving the program.
- Student portfolios were initiated.  These will contain documentation of work accomplished, grades achieved and photos of products built.
- The program's attendance policy was evaluated and revise based on student input and program Advisory Committee consent.
- The program believes that insofar as a training facility can provide closer approximations to the work environment the student will benefit.  The program continues to undergo assessment using this principle.  Changes to curriculum content have resulted.
- Individual instructors each term review feedback from student course evaluations.

### Flight Technology
Assessment Plans = Appendix 25-28

### Manufacturing
Assessment Plans = Appendix 29 – 31

**3. Based on assessment results or other evidence, what program areas (new or continuing) need attention?**

### Auto Body
The program needs to increase student FTE by at least 2 per faculty.  The ratio of student to faculty increased from the prior year but is still lower than it was in FY03.

### Automotive
The program needs to maintain its efficiency and effectiveness.  The ratio of students to faculty has improved to 33:1 because of its involvement with the RTEC program.

### Aviation Maintenance
The program needs to increase student FTE by at least 1 per faculty.  The ratio of students to faculty has slightly decreased from the prior year but is higher than it was in FY03.

### Construction

The program continues to be efficient.  The ratio of students to faculty has increase from the prior year.  This program needs an additional instructor.  The student demand continues to be very high.  The 0.750 full-time faculty needs some additional support.

## *Diesel*

The program needs to increase student FTE by at least 2 per faculty. The ratio of students to faculty has substantially decreased from the prior year but is higher than it was in FY03.

*Equipment Needs*

Hydraulic System Lab Station                                                                        $20,000

This is an electronically controlled hydraulic system which represents the off-highway industry standards. It will be mounted on a mobile training station and will include full authority diagnostic access.

Fuel System Lab Station                                                                              $20,000

This is part of an engine, mounted on an engine stand, and would simulate a full authority electronic fuel system.

Electronic Diagnostics Lab Station                                                              $20,000

This is a mobile truck chassis with electronic circuit systems that represent multiplexing and full authority diagnostic access.

Brake System Lab Station                                                                            $20,000
This is an airbrake system that will represent current industry highway trucks.  It will include electronic diagnostics, ABS and is mounted on a mobile stand.

Diesel Engine Repair Lab Station                                                                $20,000

This is a 16 liter highway truck engine, mounted on an engine stand, with full authority diagnostic emission control system.

Power Train Lab Station                                                                              $20,000

This is an Allison automatic transmission training module, mounted on a stand, with full authority diagnostic control systems.

Recruiting Materials                                                                                    $15,000

This is a complete transportable set of high school recruitment display and demonstration materials to include: LCD projectors, computer, industry diagnostic software, etc.

Bio- Diesel Lab Station                                                                              $35,000

This is a complete engine dedicated to running experiments on effects of bio-diesel fuels. This station will be mounted and have full diagnostics access.  The station will be used by both the diesel and science faculty and students.

Building Exhaust System                                                                            $30,000

This will upgrade the existing building exhaust system to conform to industry safety standards.

Full Authority Vehicle Electronic Control Diagnostic Lab Station                   $50,000

This station will incorporate all of the vehicle's computers electronic control systems into a master control system.   The net effect is to connect all of the computers and associated diagnostics into one master control.

## *Drafting*
The program needs increase student FTE by at least 3 per faculty.  The ratio of students to faculty has increased from the prior year but is lower than in FY03.

Based on the assessment of the program that was undertaken last year, we have already revised the two-year degree program to better meet industry needs.  It has become evident through the redesign that the integration of learning aids to create a more realistic simulated work environment would enhance student learning and better prepare students for employment.

## *Electronics*

The program needs to maintain its efficiency and effectiveness.  The ratio of students to faculty has increased from the prior year and is significantly higher than in FY03.

### Fabrication/Welding
The program needs to increase student FTE by at least 1 per faculty.  The ratio of students to faculty has increased from the prior year but is significantly lower than in FY03.
- The adequacy of blueprint reading skills of, and emphasis on, this subject for second year welding majors needs evaluation.
- On-going assessment aimed at improved student retention will be a program focus.


### Flight Technology
The program needs to maintain its efficiency and effectiveness.  The ratio of students to faculty has increased from the prior year and from FY03.

### Manufacturing
The program needs to increase student FTE by at least 8 per faculty.  The ratio of students to faculty has significantly decreased from the prior year and is lower than in FY03.  This could be the accumulated effect of differential pricing.

**4.  Overall, what strengths do you believe your unit demonstrated in 2005-2006?**

### Auto Body
The program strengths continue to be resiliency and commitment to the students.

### Automotive
The program strengths continue to be resiliency and commitment to the students.

### Aviation Maintenance
The program strengths continue to be resiliency and commitment to the students.
The faculty have worked hard to move the program to the airport.

### Diesel
The Diesel program instructors meet their basic goals of updating course textbooks, creating new classroom presentations and adding new lab stations. They also meet other program goal of increasing student enrollment, funding for new lab equipment, and training aids. In addition they are continuing to update the curriculum in response to advisory committee recommendations. Evidence was gathered from class evaluations, Advisory committee comments, and the recent success enjoyed by the program in searching for funding. We used the Qualitative assessment based on diesel industry standards to determine how the students perform in the workplace. These standards are determined by our advisory committee and rely heavily on their input.

### Drafting
Based on employment trends, enrollment trends, feedback from Co-op employers, feedback from our Advisory Committee, and student interests, an analysis of both the one-year and the two-year degree programs was initiated.  Faculty compiled an extensive list of current job competencies from these sources and others. Existing course outcomes were then mapped to these competencies.  A gap analysis was performed; degree requirements were modified to better address core competencies.  As a result, the faculty have revised and improved both programs.  Not only has program quality improved, so has enrollment.

### Electronics
The program strengths continue to be resiliency and commitment to the students.

### Fabrication/Welding

- Students wanting to work, following successful experiences in the program, are able to obtain jobs.
- Successful first year welding majors are often able to obtain employment in the second term of training.
- Typically all second year welding majors wanting employment are able to go to work and continue schooling.
- The program provides students with daily assessment of their work skill development.
- The program has a creatively flexible staff that was able to reduce budget expenses through section reductions without reducing the number of points of program access (e.g. mornings, afternoons, evenings and Saturdays).

### Flight Technology
The program strengths continue to be resiliency and commitment to the students.

### Manufacturing
The program strengths continue to be resiliency and commitment to the students.


**5.  Overall, what challenges do you believe your unit faced in 2005-2006?**

### Auto Body


### Automotive


### Aviation Maintenance


### Construction


### Diesel
The biggest challenge faced was the college as a whole was in a major cut back mode and this put us into a maintain the diesel program mode.

### Drafting
Prior to the revision of the two-year degree program, emphasis-area courses were facing low enrollment. Employers were telling us that students were over-specialized and not broadly prepared enough to fill their entry-level drafting positions.


### Electronics


### Fabrication/Welding
- Rethinking how courses were offered so that program availability was not compromised required time and assistance from the division office.
- Issues associated with enrollment attrition and retention of especially first year welding majors continued to be evaluated.
- Chronic under-funding of program equipment needs, (even equipment replacement needs) while maintaining effective learning labs. was a challenge.
- Once again the program saw the need for the availability of a learning specialist capable of evaluating learning deficits and disabilities and who could work with instructional staff to improve the delivery of educational services.
- The program began work to rearrange its curricular offerings.

- The program continued to work on Curriculum FY06 designed to improve quality of the educational experience and student retention.

### Flight Technology

### Manufacturing

### Division

**6. What conclusions do you draw from this analysis about needed improvements or changes in 2007-2008?**

### Auto Body

### Automotive

### Aviation Maintenance

### Construction

### Diesel
The diesel program needs to find stable funding to build a solid foundation that will allow us to continue to maintain a progressive learning environment for the students. Explore a new 1 year non-credit accelerated option for the Diesel program

### Drafting
Advisory Committees continue to play an important role in professional-technical programs to keep them in tune with changes in industry.  Continuous evaluation of program and course content is necessary for students to meet employability outcomes of the program.

### Electronics

### Fabrication/Welding
The program has, and is, attempting to improve student retention.  Several approaches have, and are, being attempted.  Most of these represent modifications to the program structure or sequence of course offerings.  Other strategies involve experimentation with improving the delivery of services or adding services.  The common thread through these approaches is that there is no research to indicate that any of them can be expected to be successful.  The program could benefit from research that has studied causes of attrition and identified effective interventions.

The program believes that by reorganizing its curriculum it can; 1) continue to provide, and improve, on a learning experience leading to entry-level skills for first year students while; 2) increasing the incentive for students to continue their education into the second year of the program.

### *Flight Technology*

### *Manufacturing*

### *Division*

**Auto Body and Fender Technology**
Program Learning Outcomes, Goals and Performance Indicators

| Program Learning Outcomes/Goals | Performance Indicators |
|---|---|
| 1) Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | 80% of the first year students will qualify for the "select student" status by receiving a recommendation from a full-time contracted faculty member.  90% percent of the second year students will complete their programs as "select students". Criteria to qualify for the "select" status will be determined and published by the faculty prior to the start of the academic year. |
| 2) Demonstrate safe work practices and tool usage while performing operations in a shop environment. | 95% of all students will pass a shop safety written and demonstration test. |
| 3) Effectively use the latest collision repair and refinishing equipment and procedures. | All students will be assessed for mastery of these skills. 80% of all first year students will complete the courses with a C- or better.  90% of the "select" second year students will have obtained industry employment within one year of their completion of the program. |
| 4) Demonstrate technical skills and knowledge to repair and refinish automobile bodies to industry standards. | All students will be assessed for mastery of these skills. 80% of all first year students will complete the courses with a C- or better.  90% of the "select" second year students will have obtained industry employment within one year of their completion of the program. |
| 5) Apply mathematics to solve repair and refinishing problems. | 95% of the program completers will pas a final program computations examination with a 70% or better score. |
| 7) Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials to repair and refinish automobile bodies to industry standards. | All students will conduct research with citations in a written report in both the first and second year of the program. |
| Program Operating Outcomes | Performance Indicators |
| Students will have access to the program. | The program will achieve the following student to faculty ratios:<br>        R-SFTE / FFTE = 26 : 1<br>        CH-SFTE / FFTE = 16 :1<br>This means for every funded faculty position 26 reimbursable student full-time equivalents should be enrolled or 16 credit hour student full-time equivalents.<br><br>The program did achieve the student access goals of the 26.82 to 1 R-SFTE/FFTE ratio, and the 16.09 to 1 CH-SFTE to FFTE ratio. |
| Students who declare their major in this program will increase as a percentage of the total students enrolled. | FY2004 was the base year.  65 of the unduplicated headcount were declared majors. |
| Program graduates will increase as a percentage of the total students enrolled. | FY2000 was the base year.<br>FY2004 AAS graduates = 1 |
| The percentage of enrolled female students in the program will exceed the percentage of females in the division programs. | 12% of students enrolled in the advanced technology division were female.<br>9.2% of the Auto Body and Fender Technology |

| | |
|---|---|
| | students were female. |
| The percentage of enrolled non-Caucasian program students will exceed the percentage of the non-Caucasian students in the college. | 26% of the program students are non-Caucasian. |
| The percentage of program students who complete each term will exceed the college completion rate. | The college completion rate was 83.24%. The program completion rate was 90.66%. |
| The percentage of program term completers who receive a C- or greater will exceed the college "success" rate. | The college "success" rate is 79.08%. The program "success" rate is 82.42%. |

## Program Learning Outcomes Assessment Matrix

| Auto Body and Fender Technology | AB 132 Beginning Auto Paint | AB 134 Paint and Collision | AB 133 Beginning Auto Collision | AB 261 Intermediate Auto Collision | AB 260 Intermediate Auto Paint | AM 280 Cooperative Education* | Art elective | Arts and Letters Requirement | Business Elective | CS 120 Concepts of Computing * | EL 115 Effective Learning | HE 125 Workplace Safety * | Human Relations * | MTH 076 Applied Geometry for Techs | MTH 086 Applied Algebra for Techs | WR 115W Intro to College Writing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Program Courses** | | | | | | | **General Education** | | | | | | | | | |
| Associate Degree Credit Hours (104 Total Credits) | 12 | 18 | 12 | 15 | 15 | | 2 | 3 | 3 | 4 | 3 | 3 | 3 | 4 | 4 | 3 |
| Two-year Certificate Credit Hours (90 Total Credits) | 12 | 18 | 12 | 15 | 15 | | 2 | | | | 3 | 3 | 3 | 4 | | 3 |
| **Program Learning Outcomes** | | | | | | | | | | | | | | | | |
| Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | P | P | P | P | P | P | | S | S | S | P | S | P | | | |
| Demonstrate safe work practices and tool usage while performing operations in a shop environment. | P | P | P | P | P | P | | | | | | P | | | | |
| Effectively use the latest collision repair and refinishing equipment and procedures. | P | P | P | P | P | P | | | | | | S | | | | |
| Demonstrate technical skills and knowledge to repair and refinish automobile bodies to industry standards. | P | P | P | P | P | P | | | | | | | | | | |
| Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials to repair and refinish automobile bodies to industry standards. | P | P | P | P | P | P | | P | | | | | | | | P |
| Apply mathematics to solve repair and refinishing problems. | P | P | P | P | P | P | | | | | | | | P | P | |
| **Core Abilities** | | | | | | | | | | | | | | | | |
| Communicate effectively. | P | P | P | P | P | P | | | | | S | | P | | | P |
| Think critically and solve problems effectively. | P | P | P | P | P | P | | S | S | P | | | | P | P | |
| Increase understanding of the relationship between self and community, including self-awareness and personal responsibility. | P | P | P | P | P | P | | | S | | | | P | | | |
| Explore academic disciplines of liberal arts, social sciences, and physical sciences. | S | S | S | S | S | S | P | P | P | P | P | P | P | P | P | P |
| **Learning College Principles** | | | | | | | | | | | | | | | | |
| Learners are active partners in the learning process. | P | P | P | P | P | P | | | | | | | | | | |
| Learners are self-directed. | P | P | P | P | P | P | | | | | | | | | | |
| Multiple learning options for diverse learners. | S | S | S | S | S | S | | | | | | | | | | |
| Learning is promoted across organizational boundaries. | | | | | | | P | P | P | P | P | P | P | P | P | P |
| Learning is substantive and documented. | P | P | P | P | P | P | S | S | S | S | S | S | S | S | S | S |
| **Assessment Methods** | | | | | | | | | | | | | | | | |
| Technical Skill Performance Observation/Evaluation | | | | | | | | | | | | | | | | |
| Employability Skills Evaluation | P | P | P | P | P | P | | | | | | | | | | |
| Group Project | P | P | P | P | P | P | | | | | | | | | | |
| Journaling | S | S | S | S | S | S | | | | | | | | | | |
| Library Research | S | S | S | S | S | S | | | | | | | | | | |
| Oral Report/Presentation | S | S | S | S | S | S | | | | | | | | | | |
| Peer Assessment | S | S | S | S | S | S | | | | | | | | | | |
| Portfolio | S | S | S | S | S | S | | | | | | | | | | |
| Pre and Post Test | P | P | P | P | P | | | | | | | | | | | |
| Project Evaluation | P | P | P | P | P | | | | | | | | | | | |
| Quizzes | P | P | P | P | P | | | | | | | | | | | |
| Self Assessment | P | P | P | P | P | | | | | | | | | | | |
| Written Report | S | S | S | S | S | | | | | | | | | | | |
| Written Tests/Examinations | P | P | P | P | P | | | | | | | | | | | |

**Automotive Technology**
**Program Learning Outcomes, Goals and Performance Indicators**

| Program Learning Outcomes/Goals | Performance Indicators |
|---|---|
| 1) Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | 80% of the first year students will qualify for the "select student" status by receiving a recommendation from a full-time contracted faculty member. 90% percent of the second year students will complete their programs as "select students". Criteria to qualify for the "select" status will be determined and published by the faculty prior to the start of the academic year. |
| 2) Demonstrate safe work practices and tool usage while performing operations in a shop environment. | 95% of all students will pass a shop safety written and demonstration test. |
| 3) Demonstrate technical skills and knowledge to pass the certification exams in the eight areas of Automotive Service Excellence Standards: Electrical/Electronic Systems, Automatic Transmissions/Transaxle, Manual Drive Trains and Axles, Suspension and Steering, Brakes, Heating and Air Conditioning, Engine Performance, and Engine Repairs. | 95% of students who complete the program will have gained necessary competencies in eight ASE major areas to pass the certification exams. |
| 4) Perform computations for gear ratios, engine displacement, electrical circuits, power output, vehicle alignment angles, conversion between the metric system and standard system, and use of precision measuring tools. | 95% of the program completers will pass a final program computations examination with a 70% or better score. |
| 5) Use appropriate library and information resources to research professional issues and support lifelong learning. | All students will conduct research with citations in a written report in both the first and second year of the program. |
| 6) Diagnose and repair current model vehicles using advanced diagnostic tools and equipment. | All second year students will diagnose and repair, using advanced tools and equipment, a test vehicle with faculty disabled components. All of the disabled components must be identified and properly repaired. |
| **Enrollment Goals** | **Performance Indicators** |
| Students will have access to the program. | The program will achieve the following student to faculty ratios: <br> R-SFTE / FFTE = 26 : 1 <br> CH-SFTE / FFTE = 16 :1 <br> This means for every funded faculty position 26 reimbursable student full-time equivalents should be enrolled or 16 credit hour student full-time equivalents. <br><br> The program exceeded the student access goal by achieving a 32.24 to 1 R-SFTE/FFTE ratio, and a 19.34 to 1 CH-SFTE to FFTE ratio. |
| Students who declare their major in this program will increase as a percentage of the total | FY2004 was the base year. 117 of the unduplicated headcount were declared majors. |

| | |
|---|---|
| students enrolled. | |
| Program graduates will increase as a percentage of the total students enrolled. | No data available |
| The percentage of enrolled female students in the program will exceed the percentage of females in the division programs. | 12% of students enrolled in the advanced technology division were female.<br>12% of the automotive technology students were female. |
| The percentage of enrolled non-Caucasian program students will exceed the percentage of the non-Caucasian students in the college. | 22% of the automotive technology students are non-Caucasian. |
| The percentage of program students who complete each term will exceed the college completion rate. | The college completion rate was 83.24%.<br>The program completion rate was 97.65%. |
| The percentage of program term completers who receive a C- or greater will exceed the college "success" rate. | The college "success" rate was 79.08%.<br>The program "success" rate was 97.6%. |

## Program Learning Outcomes Assessment Matrix

**Automotive Technology**

| | AM 143 Brakes | AM 145 Engine Repair | AM 147 Suspension and Steering | AM 149 Manual Drive Train and Axles | AM 242 Automatic Transmissions/Transaxle | AM 243 Electrical and Electronic Systems | AM 244 Engine Performance | AM 246 Heating and Air Conditioning | AM 280 Cooperative Education* | HE 125 Workplace Safety | HE 252 First Aid | WR 115W Intro to College Writing | WLD 121 Shielded Metal Arc Welding 1 | Sp 100 Basic Communications | SP 105 Listening & Critical Thinking | SP 218 Interpersonal Communications | CS 120 Concepts of Computing | CG 203 Human Relations at Work | MTH 076 Applied Geometry for Technicians | EET 129 Electrical Theory 1 | Physics Elective |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Program Courses** →  ← **General Education** | | | | | | | | | | | | | | | | | | | | | |
| Associate Degree Credit Hours (107 Total Credits) | 8 | 12 | 6 | 6 | 12 | 12 | 12 | 4 | 3 | 3 | | 3 | 4 | | 4 | | 4 | 3 | 4 | 4 | |
| Certificate Credit Hours (96 Total Credits) | 8 | 12 | 6 | 6 | 12 | 12 | 12 | 4 | | | | | | | | | | | | | |
| **Program Learning Outcomes** | | | | | | | | | | | | | | | | | | | | | |
| Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | P | P | P | P | P | P | P | P | P | S | | | P | | P | | S | P | | | S |
| Demonstrate safe work practices and tool usage while performing operations in a shop environment. | P | P | P | P | P | P | P | P | P | P | | | P | | | | | | | | S |
| Demonstrate technical skills and knowledge to pass the certification exams in the eight areas of Automotive Service Excellence Standards: Electrica/Electronic Systems, Automatic Transmissions/Transaxle, Manual Drive Traine and Axles, Suspension and Steering, Brakes, Heating and Air Conditioning, Engine Performance, and Engine Repairs. | P | P | P | P | P | P | P | P | S | | | | | | S | | | | S | | P |
| Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials to service and repair automobiles. | P | P | P | P | P | P | P | P | S | | | S | | | | P | S | | | | |
| Perform computations for gear ratios, engine displacement, electrical circuits, power output, vehicle alignment angles, conversion between the metric system and standard system, and use of precision measuring tools. | P | P | P | P | P | P | P | P | S | | | | | | | | | | P | | P |
| Diagnose and repair current model vehicles using advanced diagnostic tools and equipment. | P | P | P | P | P | P | P | P | S | | | | | | | | S | | | | |
| **Core Abilities** | | | | | | | | | | | | | | | | | | | | | |
| Communicate effectively. | P | P | P | P | P | P | P | P | P | | | | P | S | | P | | | P | S | S |
| Think critically and solve problems effectively. | P | P | P | P | P | P | P | P | S | | | | S | S | | P | | P | P | P | P |
| Increase understanding of the relationship between self and community, including self-awareness and personal responsibility. | S | S | S | S | S | S | S | S | P | | | | | | | P | | | P | | |
| Explore academic disciplines of liberal arts, social sciences, and physical sciences. | | | | | | | | | | | | P | | P | S | P | | P | P | P | P |
| **Learning College Principles** | | | | | | | | | | | | | | | | | | | | | |
| Learners are active partners in the learning process. | P | P | P | P | P | P | P | P | P | | | | | | | | | | | | |
| Learners are self-directed. | P | P | P | P | P | P | P | P | P | | | | | | | | | | | | |
| Multiple learning options for diverse learners. | S | S | S | S | S | S | S | S | P | | | | | | | | | | | | |
| Learning is promoted across organizational boundaries. | S | S | S | S | S | S | S | S | P | | | | | | | | | | | | |
| Learning is substantive and documented. | P | P | P | P | P | P | P | P | | | | | | | | | | | | | |
| **Assessment Methods** | | | | | | | | | | | | | | | | | | | | | |
| Technical Skill Performance Observation/Evaluation | P | P | P | P | P | P | P | P | | | | | | | | | | | | | |
| Employability Skills Evaluation | S | S | S | S | S | S | S | S | P | | | | | | | | | | | | |
| Group Project | | | | | | | | | | | | | | | | | | | | | |
| Journaling | | | | | | | | | | | | | | | | | | | | | |
| Library Research | | | | | | | | | | | | | | | | | | | | | |
| Oral Report/Presentation | | | | | | | | | | | | | | | | | | | | | |
| Peer Assessment | | | | | | | | | | | | | | | | | | | | | |
| Portfolio | | | | | | | | | | | | | | | | | | | | | |
| Pre and Post Test | | | | | | | | | | | | | | | | | | | | | |
| Project Evaluation | | | | | | | | | | | | | | | | | | | | | |
| Quizzes | | | | | | | | | | | | | | | | | | | | | |
| Self Assessment | | | | | | | | | | | | | | | | | | | | | |
| Written Report | | | | | | | | | | | | | | | | | | | | | |
| Written Tests/Examinations | | | | | | | | | | | | | | | | | | | | | |

**P** = this is a primary course for meeting the program learning outcome, core ability, learning college principle, or assessment method.
**S** = this course meets some of the program learning outcome, core ability, learning college principle or assessment method.

## Aviation Maintenance Technician
### Program Learning Outcomes, Goals and Performance Indicators

| Program Learning Outcomes/Goals | Performance Indicators |
|---|---|
| 1) Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | 80% of the first year students will qualify for the "select student" status by receiving a recommendation from a full-time contracted faculty member.  90% percent of the second year students will complete their programs as "select students". Criteria to qualify for the "select" status will be determined and published by the faculty prior to the start of the academic year. |
| 2) Demonstrate safe work practices and equipment usage while performing operations in a workstation environment. | 90% of all students will pass a safety written and demonstration test. |
| 3) Repair and maintain the operating condition of aircraft. | 90% of the students who complete the program will have gained the necessary competencies to obtain entry level employment. |
| 4) Pass the FAA written, oral and practical exams for licensing. | 90% of the students who complete the program will pass the FAA written, oral and practical examinations. |
| 5) Use basic mathematics skills, formulas and right angle trigonometry. | 90% of the program completers will pass a final program computations examination with a 70% or better score. |
| 6) Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials. | All students will conduct research with citations in a written report in both the first and second year of the program. |
| **Student Success Goals** | **Performance Indicators** |
| Students will have access to the program. | The program will achieve the following student to faculty ratios:<br>     R-SFTE / FFTE = 16 : 1<br>     CH-SFTE / FFTE = 10 :1<br>This means for every funded faculty position 16 reimbursable student full-time equivalents should be enrolled or 10 credit hour student full-time equivalents.<br><br>The program exceeded this student access goal by achieving a 20.86 to 1 R-SFTE/FFTE ratio, and a 12.51 to 1 CH-SFTE to FFTE ratio. |
| Students who declare their major in this program will increase as a percentage of the total students enrolled. | FY2004 was the base year.  57 of the unduplicated headcount were declared majors. |
| Program graduates will increase as a percentage of the total students enrolled. | No data available |
| The percentage of enrolled female students in the program will exceed the percentage of females in the division programs. | 12% of students enrolled in the advanced technology division were female.<br>5% of the aviation maintenance technician students |

|  |  |
|---|---|
|  | were female. |
| The percentage of enrolled non-Caucasian program students will exceed the percentage of the non-Caucasian students in the college. | 13% of the aviation maintenance technician students are non-Caucasian. |
| The percentage of program students who complete each term will exceed the college completion rate. | The college completion rate was 83.24%. The program completion rate was 84.5%. |
| The percentage of program term completers who receive a C- or greater will exceed the college "success" rate. | The college "success" rate was 79.08%. The program "success" rate was 84.11%. |
| Students will complete the program within three years. | 90% of the students who complete the two-year manufacturing program will have completed within nine terms. |
| Student completers will be asked to evaluate their overall satisfaction with the program training. | 95% of the students who complete the aviation maintenance technician program will express satisfaction with the level of training provided. |
| Employers will be satisfied with the job performance of the prior year's program completers. | 90% of employers will express job performance satisfaction with the program's student completers. On a five point Likert scale, satisfaction is greater than the midpoint. |

## Program Learning Outcomes Assessment Matrix

| Aviation Maintenance Technician | Program Courses | | | | | | | | | | General Education Courses | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AV 193 General 102 | AV 194 General 104 | AV 192 General 101 | AV 195 Geneal 104 | AV 196 General 105 | AV 281 Powerplant | AV 279 Airframe | AV 283 RTS Powerplant | AV 282 RTS Airframe | AV 280 Cooperative Education | Arts and Letters | HE 125 Workplace Safety | Human Relations | MTH 086 Applied Algebra for Technician | Science/Math/Computer Science | WR 115W Intro to College Writing |
| Associate Degree Credit Hours (109 Total Credits) | 6 | 6 | 6 | 6 | 6 | 24 | 24 | 6 | 6 | | 3 | 3 | 3 | 4 | 3 | 3 |
| Two-year Certificate Credit Hours (103 Total Credits) | 6 | 6 | 6 | 6 | 6 | 24 | 24 | 6 | 6 | | | 3 | 3 | 4 | | 3 |
| **Program Learning Outcomes** | | | | | | | | | | | | | | | | |
| Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | P | P | P | P | P | P | P | P | P | P | | P | P | | | |
| Demonstrate safe work practices and tool usage while performing operations in a shop environment. | P | P | P | P | P | P | P | P | P | P | | P | | | | |
| Repair and maintain the operating condition of aircraft. | P | P | P | P | P | P | P | P | P | P | | S | | | | |
| Pass the FAA written, oral and practical examinations for licensing. | P | P | P | P | P | P | P | P | P | P | | S | | | | |
| Perform computations for gear ratios, engine displacement, electrical circuits, power output, vehicle alignment angles, conversion between the metric system and standard system, and use of precision measuring tools. | P | P | P | P | P | P | P | P | P | | S | | | P | P | |
| Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials for construction and carpentry. | S | S | S | S | S | S | S | S | S | | P | | S | | S | P |
| **Core Abilities** | | | | | | | | | | | | | | | | |
| Communicate effectively. | P | P | P | P | P | P | P | P | P | | S | S | P | S | S | P |
| Think critically and solve problems effectively. | P | P | P | P | P | P | P | P | S | | P | S | S | P | P | S |
| Increase understanding of the relationship between self and community, including self-awareness and personal responsibility. | S | S | S | S | S | S | S | S | P | | P | | P | | | |
| Explore academic disciplines of liberal arts, social sciences, and physical sciences. | | | | | | | | | | | P | P | P | P | P | P |
| **Learning College Principles** | | | | | | | | | | | | | | | | |
| Learners are active partners in the learning process. | P | P | P | P | P | P | P | P | P | | | | | | | |
| Learners are self-directed. | P | P | P | P | P | P | P | P | P | P | | | | | | |
| Multiple learning options for diverse learners. | P | P | P | P | P | P | P | P | P | | | | | | | |
| Learning is promoted across organizational boundaries. | | | | | | | | | | P | P | P | P | P | P | P |
| Learning is substantive and documented. | P | P | P | P | P | P | P | P | P | P | P | S | S | S | S | S |
| **Assessment Methods** | | | | | | | | | | | | | | | | |
| Technical Skill Performance Observation/Evaluation | P | P | P | P | P | P | P | P | P | | | | | | | |
| Employability Skills Evaluation | P | P | P | P | P | P | P | P | P | | | | | | | |
| Group Project | | | | | | | | | | | | | | | | |
| Journaling | | | | | | | | | | | | | | | | |
| Library Research | | | | | | | | | | | | | | | | |
| Oral Report/Presentation | | | | | | | | | | | | | | | | |
| Peer Assessment | | | | | | | | | | | | | | | | |
| Portfolio | | | | | | | | | | | | | | | | |
| Pre and Post Test | | | | | | | | | | | | | | | | |
| Project Evaluation | P | P | P | P | P | P | P | P | P | | | | | | | |
| Quizzes | P | P | P | P | P | P | P | P | P | | | | | | | |
| Self Assessment | | | | | | | | | | | | | | | | |
| Written Report | | | | | | | | | | | | | | | | |
| Written Tests/Examinations | P | P | P | P | P | P | P | P | P | | | | | | | |

**P** = this is a primary course for meeting the program learning outcome, core ability, learning college principle, or assessment method.

**S** = this course meets some of the program learning outcome, core ability, learning college principle or assessment method.

**Construction Technology**
**Program Learning Outcomes, Goals and Performance Indicators**

| Program Learning Outcomes/Goals | Performance Indicators |
|---|---|
| 1) Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | 80% of the first year students will qualify for the "select student" status by receiving a recommendation from a full-time contracted faculty member.  90% percent of the second year students will complete their programs as "select students". Criteria to qualify for the "select" status will be determined and published by the faculty prior to the start of the academic year. |
| 2) Demonstrate safe work practices and tool usage while performing operations in a shop environment. | 90% of all students will pass a safety written and demonstration test. |
| 3) Demonstrate basic carpentry skills for the construction industry including: cut, fit and assemble wood and other materials; knowledge and use of laser leveling and field elevations; and, reading and properly constructing from blueprints. | 90% of the "select" students will gain entry level employment in a construction or related field within 12 months of completing the program. |
| 4) Perform computations for construction including: estimations, conversions, and use of precision measuring tools. | 90% of the program completers will pass a final program computations examination with a 70% or better score. |
| 5) Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials for construction and carpentry. | All students will conduct research with citations in a written report in both the first and second year of the program. |
| Enrollment Goals | Performance Indicators |
| Students will have access to the program. | The program will achieve the following student to faculty ratios:<br>R-SFTE / FFTE = 26 : 1<br>CH-SFTE / FFTE = 16 :1<br>This means for every funded faculty position 26 reimbursable student full-time equivalents should be enrolled or 16 credit hour student full-time equivalents.<br><br>The program exceeded the student access goal by achieving a 49.32  to 1 R-SFTE/FFTE ratio, and a 29.6 to 1 CH-SFTE to FFTE ratio. |
| Students who declare their major in this program will increase as a percentage of the total students enrolled. | FY2004 was the base year.  57 of the unduplicated headcount were declared majors. |
| Program graduates will increase as a percentage of the total students enrolled. | No data available |
| The percentage of enrolled female students in the program will exceed the percentage of | 12% of students enrolled in the advanced technology division were female. |

| | |
|---|---|
| females in the division programs. | 7% of the construction technology students were female. |
| The percentage of enrolled non-Caucasian program students will exceed the percentage of the non-Caucasian students in the college. | 30% of the construction technology students are non-Caucasian. |
| The percentage of program students who complete each term will exceed the college completion rate. | The college completion rate was 83.24%. The program completion rate was 88.92%. |
| The percentage of program term completers who receive a C- or greater will exceed the college "success" rate. | The college "success" rate was 79.08%. The program "success" rate was 88.92%. |

**Program Learning Outcomes Assessment Matrix**

| Construction Technology | CST 110 Blueprint Reading 1 | CST 111 Construction Orientation | CST 116 Construction Estimating | CST 118 Building Construction | CST 119 Building Construction Surveying | CST 122 Construction Codes | CST 211 Blueprint Reading 2 | CST 280C Cooperative Education | CST 283 Introduction to Bricklaying | Arts and Letters | CIS 101 Computer Fundamentals | Directed Electives | Distribution Requirement | DRF 167 CAD 1 | DRF 208 Residential Buildings | DRF 210 Commercial Buildings | HE 125 Workplace Safety | Human Relations | MTH 076 Applied Geometry for Technicians | Science/Math/Computer Science | WR 121 English Composition |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **PROGRAM COURSES** | | | | | | | | | **GENERAL EDUCATION** | | | | | | | | | | | |
| Associate Degree Credit Hours (97 Total Credits) | 3 | 2 | 4 | 15 | 3 | 2 | 3 | 9 | 1 | 3 | 3 | 18 | 3 | 4 | 4 | 4 | 3 | 3 | 4 | 3 | 3 |
| One-year Certificate Credit Hours (53 Total Credits) | 3 | 2 | 4 | 15 | 3 | 2 | 3 | | 1 | | 3 | | | 4 | | | 3 | 3 | 4 | | 3 |
| **Program Learning Outcomes** | | | | | | | | | | | | | | | | | | | | | |
| Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | P | P | P | P | P | P | P | P | P | | | S | | S | S | S | P | P | | | |
| Demonstrate safe work practices and tool usage while performing operations in a shop environment. | P | P | P | P | P | P | P | P | P | | P | | | S | S | S | P | | | | |
| Demonstrate basic carpentry skills for the construction industry including: cut, fit and assemble wood and other materials; knowledge and use of laser leveling and field elevations; and, reading and properly constructing from blueprints. | P | P | P | P | P | P | P | P | P | | S | | | S | S | S | | | | | |
| Perform computations for construction including: estimations, conversions, and use of precision measuring tools. | P | P | P | P | P | P | P | P | P | | S | P | S | S | S | S | S | | P | P | |
| Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials for construction and carpentry. | S | S | S | S | S | S | S | S | S | P | | S | P | S | S | S | | | | S | P |
| **Core Abilities** | | | | | | | | | | | | | | | | | | | | | |
| Communicate effectively. | P | P | P | P | P | P | P | P | P | | | | | | | | | | P | | P |
| Think critically and solve problems effectively. | P | P | P | P | P | P | P | P | S | | | P | P | P | | P | P | P | P | P | S |
| Increase understanding of the relationship between self and community, including self-awareness and personal responsibility. | S | S | S | S | S | S | S | S | P | | S | S | S | S | | | | P | P | | |
| Explore academic disciplines of liberal arts, social sciences, and physical sciences. | | | | | | | | | | | S | S | S | S | P | P | P | P | P | P | P |
| **Learning College Principles** | | | | | | | | | | | | | | | | | | | | | |
| Learners are active partners in the learning process. | P | P | P | P | P | P | P | P | P | | S | P | P | P | P | P | S | | | | |
| Learners are self-directed. | P | P | P | P | P | P | P | P | P | | | P | P | P | P | P | S | | | | |
| Multiple learning options for diverse learners. | P | P | P | P | P | P | P | P | P | | S | S | S | S | S | S | S | S | S | S | S |
| Learning is promoted across organizational boundaries. | | | | | | | | | | P | P | P | P | P | P | P | P | P | P | P | P |
| Learning is substantive and documented. | P | P | P | P | P | P | P | P | P | P | S | P | P | P | P | P | S | S | S | S | S |
| **Assessment Methods** | | | | | | | | | | | | | | | | | | | | | |
| Technical Skill Performance Observation/Evaluation | P | P | P | P | P | P | P | P | P | | | | | P | P | P | | | | | |
| Employability Skills Evaluation | P | P | P | P | P | P | P | P | P | | | | | P | P | P | | | | | |
| Group Project | | | | | | | | | | | | | | | | | | | | | |
| Journaling | | | | | | | | | | | | | | | | | | | | | |
| Library Research | | | | | | | | | | | | | | | | | | | | | |
| Oral Report/Presentation | | | | | | | | | | | | | | | | | | | | | |
| Peer Assessment | | | | | | | | | | | | | | | | | | | | | |
| Portfolio | | | | | | | | | | | | | | | | | | | | | |
| Pre and Post Test | | | | | | | | | | | | | | | | | | | | | |
| Project Evaluation | | | | | | | | | | | | | | | | | | | | | |
| Quizzes | | | | | | | | | | | | | | | | | | | | | |
| Self Assessment | | | | | | | | | | | | | | | | | | | | | |
| Written Report | | | | | | | | | | | | | | | | | | | | | |
| Written Tests/Examinations | | | | | | | | | | | | | | | | | | | | | |

**Diesel Technology**
**Program Assessment**

| Program Learning Outcomes | Performance Indicators |
|---|---|
| 1) Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics.<br>This program will implement the division's employability skills assessment process.  During the middle of the program, a student may initiate an employee performance review.  The student will prepare a self-evaluation based on the employability skills listed above and other criteria as identified by the faculty (portfolio, resume). This self-evaluation will be submitted to the faculty for review.  The faculty will schedule a formal performance review based on the self-evaluation.  During the review, the faculty will assume the role of the student's employment supervisor and provide performance feedback to the student.  Based on the overall assessment of the student's employability skill attainment, the faculty may promote the student to the "entry level employee" status.  A student who is at the 'entry level employment' status may lose that status for failing to maintain employability skill standards as documented by the faculty. If the student is not promoted or loses their promotion, the faculty will document corrective activities that may qualify the student for promotion. | 70% of the students will initiate a performance review after completing 30 credits in the program.  Of these students, 90% will be promoted to and exit with the "entry level employee" status. |
| 2) Demonstrate safe work practices and tool usage while performing operations in a shop environment. | 90% of all students will pass a safety written and demonstration test. |
| 3) Demonstrate technical skills and knowledge to pass the certification exams in nine areas of Automotive Service Excellence Standards: Diesel Engines; Drive Trains; Brakes; Suspension and Steering; Electrical/Electronic Systems; Heating, Ventilation and Air Conditioning; Preventative Maintenance Inspection; Auxiliary Power System; and, Truck Equipment. | 90% of the students who complete the program will have gained the necessary competencies to pass the ASE certification examinations. |
| 4) Demonstrate industry troubleshooting procedures to diagnose and repair heavy duty equipment hydraulic systems. | 90% of the students who complete the program will pass an industry certification examination. |
| 5) Perform computations for gear ratios, engine displacement, electrical circuits, hydraulic circuits, power output, vehicle alignment angles, conversion between metric and standard measures, and use of precision measuring instruments and tools. | 90% of the program completers will pass a final program computations examination with a 70% or better score. |
| 6) Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials for construction and | All students will conduct research with citations in a written report in both the first and second year of the program. |

carpentry.

| Program Operating Outcomes | Performance Indicators |
|---|---|
| Students will have access to the program. | The program will achieve a 26:1 student FTE to faculty FTE ratio. |
| The program will be cost effective. | The program's cost per student FTE will equal or be less than the division's projected benchmarks for a medium cost program. The prior year's actual expenses and earned student FTE will be compared to the division's operating benchmarks. |
| Students who declare their major in this program will increase as a percentage of the total students enrolled. | The percentage of declared majors will increase from year to year until 90% of the enrolled students are declared majors. |
| Program graduates will increase as a percentage of the total students enrolled. | 70% of the students who completed 30 credits will graduate within 3 years. |
| The percentage of enrolled female students will increase. | The percentage of females will increase from year to year until the percentage exceeds the division's average. |
| The percentage of enrolled non-Caucasian program students will increase. | The percentage of non-Caucasian will increase from year to year until the percentage exceeds the division's average. |
| Students will complete the term. | The percentage of program students who complete each term will exceed the college completion rate. |
| Students will be successful in their progress through the program. | The percentage of program term completers who receive a C- or greater will exceed the college "success" rate. |
| Student will complete the program. | 90% of the students who complete 30 program credits will either graduate or enter a job related to the program within two years. |
| Student completers will be asked to evaluate their overall satisfaction with the program training. | 95% of the students who complete the diesel technology program will express satisfaction with the level of training provided. |
| Employers will be satisfied with the job performance of the prior year's program completers. | 90% of employers will express job performance satisfaction with the program's student completers. On a five point scale, satisfaction is greater than the midpoint. |
| Program Initiatives Outcomes | Performance Indicators |
| The program has the capacity and resources to achieve its program learning outcomes. | The faculty and manager will conduct an annual assessment analysis of the program's learning outcomes. The results of this assessment will be published in the program's annual unit plans. |
| The program has the capacity and resources to achieve its program operating outcomes. | The faculty and manager will conduct an annual assessment analysis of the program's operating outcomes. The results of this assessment will be published in the program's annual unit plans. |
| The program should continuously improve its existing human, curriculum, equipment, software, and facility resources. | Initiatives will be identified through the unit planning process.  Line items will be funded and implemented at a sufficient level to maintain the quality of the program. |
| The program should acquire and incorporate new human, curriculum, equipment, software, and facility resources. | Initiatives will be identified through the unit planning process.  Line items will be funded and implemented at a sufficient level to maintain the quality of the program. |

### Program Learning Outcomes Assessment Matrix

| Diesel Technology | DS 155 Heavy Equipment Hydraulics | DS 154 Heavy Duty Braking Systems | DS 158 Chassis & Power Trains | DS 256 Diesel & Auxiliary Fuel Systems | DS 257 Diesel Electrical Systems | DS 259 Diesel Engines and Overhauls | DS 280 Cooperative Education (suggested) | WLD 121 Shielded Metal Arc Welding | WLD 143 Wire Drive Welding 1 | WLD 122 SMAW 2 or MFG 197 Manufacturing | Arts and Letters | CS 120 Concepts of Computing | HE 125 Workplace Safety * | Human Relations | MTH 076 Applied Geometry for Technicians | MTH 086 Applied Algebra for Technicians | WR 115W Introduction to College Writing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Associate Degree Credit Hours (108 Total Credits) | 12 | 12 | 12 | 12 | 12 | 12 | | 4 | 4 | 4 | 3 | 4 | 3 | 3 | 4 | 4 | 3 |
| Two-year Certificate Credit Hours (97 Total Credits) | 12 | 12 | 12 | 12 | 12 | 12 | | 4 | 4 | 4 | 3 | | 3 | | | 4 | 3 |
| **Program Learning Outcomes** | | | | | | | | | | | | | | | | | |
| Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | P | P | P | P | P | P | P | P | P | P | | S | P | S | | | |
| Demonstrate safe work practices and tool usage while performing operations in a shop environment. | P | P | P | P | P | P | P | P | P | P | | | P | | | | |
| Demonstrate technical skills and knowledge to pass the certification exams in nine areas of Automotive Service Excellence Standards: Diesel Engines; Drive Trains; Brakes; Suspension and Steering; Electrical/Electronic Systems; Heating, Ventiltion and Air Conditioning; Preventative Maintenance Inspection; Auxiliary Power System; and, Truck Equipment. | P | P | P | P | P | P | P | P | P | P | | S | S | | S | S | |
| Demonstrate industry troubleshooting procedures to diagnose and repair heavy duty equipment hydraulic systems. | P | P | P | P | P | P | P | P | P | P | | S | S | | S | S | |
| Perform computations for gear ratios, engine displacement, electrical circuits, hydraulic circuits, power output, vehicle alignment angles, conversion between metric and standard measures, and use of precision measuring instruments and tools. | P | P | P | P | P | P | P | P | P | P | | S | | | P | P | |
| Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials for diesel technology. | S | S | S | S | S | S | S | S | S | S | P | S | | S | | | P |
| **Core Abilities** | | | | | | | | | | | | | | | | | |
| Communicate effectively. | P | P | P | P | P | P | P | P | P | P | | | | | | | |
| Think critically and solve problems effectively. | P | P | P | P | P | P | P | P | P | P | | P | P | P | | P | P |
| Increase understanding of the relationship between self and community, including self-awareness and personal responsibility. | S | S | S | S | S | S | S | S | S | S | | | S | P | | | |
| Explore academic disciplines of liberal arts, social sciences, and physical sciences. | | | | | | | | | | | P | P | P | P | P | P | P |
| **Learning College Principles** | | | | | | | | | | | | | | | | | |
| Learners are active partners in the learning process. | P | P | P | P | P | P | P | P | P | | | | | | | | |
| Learners are self-directed. | P | P | P | P | P | P | P | P | P | | | | | | | | |
| Multiple learning options for diverse learners. | P | P | P | P | P | P | P | P | P | | | | | | | | |
| Learning is promoted across organizational boundaries. | | | | | | | | | | | | | | | | | |
| Learning is substantive and documented. | P | P | P | P | P | P | P | P | P | | | | | | | | |
| **Assessment Methods** | | | | | | | | | | | | | | | | | |
| Technical Skill Performance Observation/Evaluation | P | P | P | P | P | P | P | P | P | | | | | | | | |
| Employability Skills Evaluation | P | P | P | P | P | P | P | P | P | | | | | | | | |
| Group Project | P | P | P | P | P | P | | | | | | | | | | | |
| Journaling | S | S | S | S | S | S | | | | | | | | | | | |
| Library Research | S | S | S | S | S | S | | | | | | | | | | | |
| Oral Report/Presentation | P | P | P | P | P | P | | | | | | | | | | | |
| Peer Assessment | S | S | S | S | S | S | | | | | | | | | | | |
| Portfolio | S | S | S | S | S | S | | | | | | | | | | | |

**Drafting**
**Program Learning Outcomes, Goals and Performance Indicators**

| Program Learning Outcomes/Goals | Performance Indicators |
|---|---|
| 1) Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | 80% of the first year students will qualify for the "select student" status by receiving a recommendation from a full-time contracted faculty member.  90% percent of the second year students will complete their programs as "select students". Criteria to qualify for the "select" status will be determined and published by the faculty prior to the start of the academic year. |
| 2) Demonstrate safe work practices and equipment usage while performing operations in a workstation environment. | 90% of all students will pass a safety written and demonstration test. |
| 3)  Demonstrate basic competence in the use of at least one CAD software program: setup a drawing, create and modify text and geometry, use associative dimensioning correctly, create, store and use blocks or symbols, manage object properties including line type and layer, create objects in three dimensions, and print or plot drawings using a correct scale. | 90% of the students who complete the program will have gained the necessary competencies to obtain entry level employment in a drafting related occupation. |
| 4)  Explain basic standard practices in architectural and mechanical drafting. | 90% of the students who complete the program will pass an industry certification examination. |
| Interpret the concepts of a problem-solving task and translate them into mathematical language, and solve using mathematical operations. | 90% of the program completers will pass a final program computations examination with a 70% or better score. |
| Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials for construction and carpentry. | All students will conduct research with citations in a written report in both the first and second year of the program. |
| **Student Success Goals** | **Performance Indicators** |
| Students will have access to the program. | The program will achieve the following student to faculty ratios:<br>            R-SFTE / FFTE = 26 : 1<br>            CH-SFTE / FFTE = 16 :1<br>This means for every funded faculty position 26 reimbursable student full-time equivalents should be enrolled or 16 credit hour student full-time equivalents.<br><br>The program did not meet this student access goal achieving a 24.51 to 1 R-SFTE/FFTE ratio, and a 14.7 to 1 CH-SFTE to FFTE ratio. |
| Students who declare their major in this program will increase as a percentage of the total students enrolled. | FY2004 was the base year.  87 of the unduplicated headcount were declared majors. |
| Program graduates will increase as a | No data available |

| | |
|---|---|
| percentage of the total students enrolled. | |
| The percentage of enrolled female students in the program will exceed the percentage of females in the division programs. | 12% of students enrolled in the advanced technology division were female. 27.6% of the Drafting Technology students were female. |
| The percentage of enrolled non-Caucasian program students will exceed the percentage of the non-Caucasian students in the college. | 19% of the Drafting Technology students are non-Caucasian. |
| The percentage of program students who complete each term will exceed the college completion rate. | The college completion rate was 83.24%. The program completion rate was 85.45%. |
| The percentage of program term completers who receive a C- or greater will exceed the college "success" rate. | The college "success" rate was 79.08%. The program "success" rate was 83.48%. |
| Students will complete the program within three years. | 90% of the students who complete the two-year drafting program will have completed within nine terms. |
| Student completers will be asked to evaluate their overall satisfaction with the program training. | 95% of the students who complete the Drafting Technology program will express satisfaction with the level of training provided. |
| Employers will be satisfied with the job performance of the prior year's program completers. | 90% of employers will express job performance satisfaction with the program's student completers. On a five point Likert scale, satisfaction is greater than the midpoint. |

**Drafting Technology**

Column groups: General Education (MTH 076/086 – CS 120); General Drafting Courses (DRF 141 – ENGR 280D); Architectural Courses (DRF 137 – DRF 211); Mechanical Courses (DRF 121 – DRF 248).

| Drafting Technology | MTH 076 and 086 or higher | CG 203 Human Relations at Work | WR 115W Introduction to College Writing | WR 121 and WR 227 English Composition and Technical Writing | CS 120 or CS 101 Concepts of Computing or Computer Fundamentals | DRF 141 Engineering Information | DRF 142 Graphic Concepts | DRF 167 CAD 1 | DRF 168 CAD 2 | DRF 170 CAD 3D | DRF 205 Drafting: Structures | DRF 206 Co-op Ed: Drafting Seminar | DRF 207 Drafting: Strength of Materials | ENGR 280D Cooperative Education: Drafting | DRF 137 Architectural Drafting - Plans | DRF 208 Residential Buildings | DRF 210 Commercial Buildings | CST 122 Construction Codes | DRF 211 Mechanical Systems and Envir Design | DRF 121 Mechanical Drafting | DRF 203 Electrical Drafting | DRF 232 Mechanical Design | DRF 233 Geometric Tolerancing | DRF 234 Power Trains | DRF 245 Inventor | DRF 246 Descriptive Geometry Sheet Metal Layout | DRF 247 Pipe Drafting | DRF 248 Hydraulics Drafting |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Associate Degree (96 Total Credits) | 8 | 3 |  | 8 | 3-4 | 2 | 2 | 4 | 4 | 4 | 3 | 1 | 3 | 3 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 4 | 4 | 4 | 3 | 2 | 1 | 1 |
| One-Year Certificate (45 Total Credits) | 8 | 3 | 3 |  | 3-4 | 2 | 2 | 4 | 4 | 4 |  | 1 |  |  | 4 |  |  |  |  | 4 |  |  |  |  |  |  |  |  |
| **Program Learning Outcomes** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | S | P | S | P | S | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| Demonstrate basic graphical literacy. | S | S | S | P | S | P | P | P | P | P | P | S | S | S | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| Demonstrate basic competence in the use of at least one CAD software program: setup a drawing, create and modify text and geometry, use associative dimensioning correctly, create, store and use blocks or symbols, manage object properties including linetype and layer, create objects in three dimensions, and print or plot drawings using a correct scale. |  |  |  |  |  | S | S | P | P | P | S | S | S | S | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| Explain basic standard practices in architectural and mechanical drafting. |  |  |  |  |  | P | P | S | S | S | S | S | S | S | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| Use appropriate library and information resources to research professional issues and support lifelong learning. | S | S | P | P | S | P | S | S | S | S | P | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| Interpret the concepts of a problem-solving task and translate them into mathematical language, and solve using mathematical operations. | P | S | S | S | P | S | S | S | S | S | P | S | P | P | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| **Core Abilities** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Communicate effectively. | S | P | P | P | S | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| Think critically and solve problems effectively. | P | P | P | P | P | S | S | S | S | S | P | P | P | P | S | S | S | S | S | S | S | P | S | S | S | S | S | S |
| Increase understanding of the relationship between self and community, including self-awareness and personal responsibility. |  | P | S | S | S |  |  |  |  |  |  |  | P |  | P |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Explore academic disciplines of liberal arts, social sciences, and physical sciences. |  | S |  |  |  |  |  |  |  |  |  | S |  | S |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Learning College Principles** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Learners are active partners in the learning process. | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| Learners are self-directed. | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| Multiple learning options for diverse learners. | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| Learning is promoted across organizational boundaries. | P | P | P | P | P |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Learning is substantive and documented. | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| **Assessment Methods** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Skill Performance Observation/Evaluation | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| Employability Skills Evaluation | S | P | S | P | P | S | S | S | S | S | S | P | S | P | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| Group Project |  | S |  | S |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Journaling |  |  |  | S |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Library Research |  |  | S | S |  | P |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Oral Report/Presentation |  | S |  | S |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | S |  |  |  |  |  |
| Peer Assessment |  |  |  |  |  |  |  |  |  |  |  |  |  | S |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Portfolio |  |  |  | P |  | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| Pre and Post Test | P |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Project Evaluation |  |  |  | P |  | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| Quizzes | S |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Self Assessment |  | S |  |  |  |  |  |  |  |  |  |  |  | P |  |  |  |  |  |  |  |  | S |  |  |  |  |  |
| Written Report |  |  | P | P |  | S |  |  |  |  |  | S |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Written Tests/Examinations | P |  |  |  |  | P | P | P | P | P | P | S | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |

**P** = this is a primary course for meeting the program learning outcome, core ability, learning college principle, or assessment method.

**S** = this course meets some of the program learning outcome, core ability, learning college principle or assessment method.

## Electronics
### Program Learning Outcomes, Goals and Performance Indicators

| Program Learning Outcomes/Goals | Performance Indicators |
|---|---|
| 1) Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | 80% of the first year students will qualify for the "select student" status by receiving a recommendation from a full-time contracted faculty member.  90% percent of the second year students will complete their programs as "select students". Criteria to qualify for the "select" status will be determined and published by the faculty prior to the start of the academic year. |
| 2) Demonstrate safe work practices and tool usage while performing operations in a shop environment. | 95% of all students will pass a shop safety written and demonstration test. |
| 3) Demonstrate the ability to generate and read schematic drawings and apply that knowledge to understand the operation of a physical circuit. | All students will be assessed for mastery of these skills. 80% of all first year students will complete the courses with a C- or better.  90% of the second year students will have obtained industry employment within one year of their completion of the program. |
| 4) Construct, modify, and test an operational multistage digital or analog circuit. | All students will design, construct, test and present a project prior to completing the program |
| 5) Follow the flow of an automated manufacturing process, recognize the transducers used to monitor a process and, using programmable controllers (PLCs), ladder logic and robotics, create, test and troubleshoot an automated process. | All students will design, construct, test and present a project prior to completing the program. |
| 6) Demonstrate the operation of a microprocessor based system, write low level code, assemble and troubleshoot a personal computer. | All students will assemble and troubleshoot a personal computer and demonstrate the knowledge of low level coding prior to completing the program. |
| 7) Interpret the concepts of a problem-solving task to troubleshoot a faulty circuit. | All students will troubleshoot a faulty circuit while explaining the principle electronic concepts. |
| 8) Use appropriate library and information resources to research professional issues and support lifelong learning. | All students will conduct research with citations in a written report in both the first and second year of the program. |
| **Enrollment Goals** | **Performance Indicators** |
| Students will have access to the program. | The program will achieve the following student to faculty ratios:<br>     R-SFTE / FFTE = 22 : 1<br>     CH-SFTE / FFTE = 16 :1<br>This means for every funded faculty position 22 reimbursable student full-time equivalents should be enrolled or 16 credit hour student full-time equivalents.<br><br>The program did not achieve the student access goals of the 18.72 to 1 R-SFTE/FFTE ratio, and the 14.04 to 1 CH-SFTE to FFTE ratio. |
| Students who declare their major in this program will increase as a percentage of the total students enrolled. | FY2004 was the base year.  59 of the unduplicated headcount were declared majors. |

| | |
|---|---|
| Program graduates will increase as a percentage of the total students enrolled. | FY2000 was the base year.<br>AAS graduates = 9 |
| The percentage of enrolled female students in the program will exceed the percentage of females in the division programs. | 12% of students enrolled in the advanced technology division were female.<br>7% of the electronic technology students were female. |
| The percentage of enrolled non-Caucasian program students will exceed the percentage of the non-Caucasian students in the college. | 27% of the electronics  technology students are non-Caucasian. |
| The percentage of program students who complete each term will exceed the college completion rate. | The college completion rate was 83.24%.<br>The program completion rate was 92.52%. |
| The percentage of program term completers who receive a C- or greater will exceed the college "success" rate. | The college "success" rate is 79.08%.<br>The program "success" rate is 91.97%. |

# Electronic Technology

Course columns (credit hours in parentheses). **P** = primary course; **S** = this course meets some of the outcome. Program courses are highlighted; General Education courses are listed on the right.

| Outcome / Ability / Principle / Method | EET 129 Electrical Theory 1 (4) | EET 121 Shop Practices (1) | EET 151 Digital Electronics 1 (4) | EET 130 Electrical Theory 2 (4) | EET 145 Semiconductor Device (4) | EET 152 Digital Electronics 2 (4) | EET 131 Electrical Theory 3 (4) | EET 146 Semiconductor Device (4) | ELT 277 Electronics Troublesho (4) | ELT 282 Hardware Computers (4) | EET 247 Linear Circuits (4) | EET 234 Programmable Control (4) | EET 239 Microprocessor Applic (4) | ENGR 280C Cooperative Educa (3) | EET 201 Industrial Instrument (4) | ELT 281 Radiotelephone and C (4) | EET 232 Robotics (4) | Human Relations * (3) | MTH 095 Intermediate Algebra (5) | MTH 111 College Algebra (5) | WR 121 English Composition (3) | WR 227 Technical Report Writin (3) | CS 120 Concepts of Computing (4) | CS 160 Intro to Programming (4) | Mth 065 Elementary Algebra (4) | HE 125 Work Place Safety | HE 252 First Aid (3) | PE Health Requirement |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Program Learning Outcomes** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | S | S | S | | P | S | S | | | P | |
| Demonstrate safe work practices and tool usage while performing operations in a shop environment. | P | P | P | P | P | P | P | P | | | P | P | P | P | P | P | P | | | | | | | | | | S | |
| Demonstrate the ability to generate and read schematic drawings and apply that knowledge to understand the operation of a physical circuit. | P | P | P | P | P | P | P | P | P | P | P | P | P | S | P | P | P | | | | | | | | | | | |
| Construct, modify, and test an operational multistage digital or analog circuit. | P | P | P | P | P | P | P | P | P | P | P | P | P | | P | P | P | | | | | | | | | | | |
| Follow the flow of an automated manufacturing process, recognize the transducers used to monitor a process and, using programmable controllers (PLCs), ladder logic and robotics, create, test and troubleshoot an automated process. | | | | | | | | | | | | P | P | S | P | | P | | | | | | | | | | | |
| Demonstrate the operation of a microprocessor based system, write low level code, assemble and troubleshoot a personal computer. | | | | | | | | | | P | | | P | | | | P | | | | | | | | | | | |
| Interpret the concepts of a problem-solving task to troubleshoot a faulty circuit. | S | S | S | S | S | S | S | S | P | P | S | S | S | S | S | S | S | | | | | | | | | | | |
| Access library, computing, and communications services and obtain information and data from regional, national, and international networks. | | S | | | | | | | S | | | | | | | | | | | | | | | | | | | |
| **Core Abilities** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Communicate effectively. | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | | | | P | P | | | | | | |
| think critically and solve problems effectively | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | | P | P | s | s | | | | | | |
| Increase understanding of the relationship between self and community, including self-awareness and personal responsibility. | | | | | | | | | | | | | | | | | | P | | | | | | | | | | |
| Explore academic disciplines of liberal arts, social sciences, and physical sciences. | | | | | | | | | | | | | | | | | | | | | | | S | | | | | |
| **Learning College Principles** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Learners are active partners in the learning process. | P | P | P | | | | | | | | | | P | P | P | P | P | | | | | | | | | | | |
| Learners are self-directed. | P | P | P | | | | | | | | | | P | P | P | P | P | | | | | | | | | | | |
| Multiple learning options for diverse learners. | P | P | P | | | | | | | | | | P | | P | | P | | | | | | | | | | | |
| Learning is promoted across organizational boundaries. | | | | | | | | | S | | | | S | | S | | | | | | | | P | | | | | |
| Learning is substantive and documented. | P | P | P | | | | | | | | | | P | P | P | P | P | | | | | | | | | | | |
| **Assessment Methods** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Skill Performance Observation/Evaluation | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | | | | | P | | | | | | |
| Employability Skills Evaluation | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | | | | | | | | | | | |
| Group Project | P | P | P | | | | | | | | | | P | P | P | | P | | | | | | | | | | | |
| Journaling | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Library Research | | | | | | | | | S | | | | S | | S | | | | | | | | | | | | | |
| Oral Report/Presentation | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Peer Assessment | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Portfolio | | | | | | | | | | | | | S | | S | | | | | | | S | | | | | | |
| Pre and Post Test | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | | | | | | | | | | | |
| Project Evaluation | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | | | | | | | | | | | |
| Quizzes | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | | | | | | | | | | | |
| Self Assessment | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Written Report | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Written Tests/Examinations | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | | | | | | | | | | | |

**P** = this is a primary course for meeting the program learning outcome, core ability, learning college principle, or assessment method.
**S** = this course meets some of the program learning outcome, core ability, learning college principle or assessment method.

**Fabrication and Welding Technology**
**Program Learning Outcomes, Goals and Performance Indicators**

| Program Learning Outcomes/Goals | Performance Indicators |
|---|---|
| 1) Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | 80% of the first year students will qualify for the "select student" status by receiving a recommendation from a full-time contracted faculty member. 90% percent of the second year students will complete their programs as "select students". Criteria to qualify for the "select" status will be determined and published by the faculty prior to the start of the academic year. |
| 2) Demonstrate safe work practices and tool usage while performing operations in a shop environment. | 95% of all students will pass a shop safety written and demonstration test. |
| 3) Demonstrate advanced fabrication techniques and welding processes and applications including GTAW, programmable, plasma cutting, structural and pipe fitting, metallurgy, quality control procedures and business operations. | All students will be assessed for mastery of these skills. 80% of all first year students will complete the courses with a C- or better. 90% of the second year students will have obtained industry employment within one year of their completion of the program. |
| 4) Develop manufacturing plans for commercially viable metal products. | All students will design and present to a peer committee a manufacturing plan prior to completing the program. |
| 5) Use appropriate library and information resources to research professional issues and support lifelong learning. | All students will conduct research with citations in a written report in both the first and second year of the program. |
| 6) Use blueprint reading skills, cost estimating, applied science of materials and mathematics necessary to the profession. | All second year students will prepare a blueprint project that includes cost estimating and materials management. |
| **Enrollment Goals** | **Performance Indicators** |
| Students will have access to the program. | The program will achieve the following student to faculty ratios:<br>R-SFTE / FFTE = 22 : 1<br>CH-SFTE / FFTE = 16 :1<br>This means for every funded faculty position 22 reimbursable student full-time equivalents should be enrolled or 16 credit hour student full-time equivalents.<br><br>The program exceeded the student access goal by achieving a 29.89 to 1 R-SFTE/FFTE ratio, and a 17.94 to 1 CH-SFTE to FFTE ratio. |
| Students who declare their major in this program will increase as a percentage of the total students enrolled. | FY2004 was the base year. 84 of the unduplicated headcount were declared majors. |
| Program graduates will increase as a percentage of the total students enrolled. | FY2000 was the base year.<br>AAS graduates = 4<br>Certificates = 1. |
| The percentage of enrolled female students in the program will exceed the percentage of | 12% of students enrolled in the advanced technology division were female. |

| females in the division programs. | 14% of the fabrication/welding technology students were female. |
|---|---|
| The percentage of enrolled non-Caucasian program students will exceed the percentage of the non-Caucasian students in the college. | 13% of the fabrication/welding technology students are non-Caucasian. |
| The percentage of program students who complete each term will exceed the college completion rate. | The college completion rate was 83.24%. The program completion rate was 89.01%. |
| The percentage of program term completers who receive a C- or greater will exceed the college "success" rate. | The college "success" rate is 79.08%. The program "success" rate is 80.94%. |

**Program Learning Outcomes Assessment Matrix**

| Fabrication and Welding | PROGRAM COURSES | | | | | | | SUPPORT COURSES | | | | GENERAL EDUCATION | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WLD 112 Fabrication/Welding 1 | WLD 113 Fabrication/Welding 2 | WLD 114 Fabrication/Welding 3 | WLD 215 Fabrication/Welding 4 | WLD 216 Fabrication/Welding 5 | WLD 217 Fabrication/Welding 6 | | HE 125 Workplace Safety | MFG 197 Manufacturing Technology | Welding Elective | Cooperative Education | MTH 076 Applied Geometry for Techs | CG 203 Human Relations at Work | WR 115 W Intro to College Writing: Workplace | Arts and Letters and/or Social Science | Science/Math/Computer Science |
| Associate Degree Credit Hours (100 Total Credits) | 12 | 12 | 12 | 12 | 12 | 12 | | 3 | 3 | 3 | | 4 | 3 | 3 | 6 | 3 |
| One-Year Certificate Credit Hours (46 Total Credits) | 12 | 12 | 12 | | | | | | | | | 4 | 3 | 3 | | |
| **Program Learning Outcomes** | | | | | | | | | | | | | | | | |
| Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | P | P | P | P | P | P | | S | P | P | P | | P | | | |
| Demonstrate safe work practices and tool usage while performing operations in a shop environment. | P | P | P | P | P | P | | P | P | P | P | | | | | |
| Demonstrate advanced fabrication techniques and welding processes and applications including GTAW, programmable, plasma cutting, structural and pipe fitting, metallurgy, quality control procedures and business operations. | P | P | P | P | P | P | | | S | S | S | | | | | |
| Develop manufacturing plans for commercially viable metal products. | P | P | P | P | P | P | | | S | S | | | | | | |
| Use appropriate library and information resources to research professional issues and support lifelong learning. | S | S | S | S | S | S | | S | S | | | | S | P | P | |
| Use blueprint reading skills, cost estimating, applied science of materials and mathematics necessary to the profession. | P | P | P | P | P | P | | | S | | | S | | | | |
| **Core Abilities** | | | | | | | | | | | | | | | | |
| Communicate effectively. | P | P | P | P | P | P | | P | P | P | P | | S | P | S | |
| Think critically and solve problems effectively. | P | P | P | P | P | P | | | S | S | | P | S | P | P | |
| Increase understanding of the relationship between self and community, including self-awareness and personal responsibility. | S | S | S | S | S | S | | S | S | S | P | | P | | | |
| Explore academic disciplines of liberal arts, social sciences, and physical sciences. | | | | | | | | S | P | | | P | P | P | P | |
| **Learning College Principles** | | | | | | | | | | | | | | | | |
| Learners are active partners in the learning process. | P | P | P | P | P | P | | | | | | | | | | |
| Learners are self-directed. | P | P | P | P | P | P | | | | | | | | | | |
| Multiple learning options for diverse learners. | P | P | P | P | P | P | | | | | | | | | | |
| Learning is promoted across organizational boundaries. | | | | | | | | P | P | | S | S | S | S | S | |
| Learning is substantive and documented. | P | P | P | P | P | P | | | P | P | S | P | S | P | S | |
| **Assessment Methods** | | | | | | | | | | | | | | | | |
| Technical Skill Performance Observation/Evaluation | P | P | P | P | P | P | | | P | P | P | | | | | |
| Employability Skills Evaluation | P | P | P | P | P | P | | | P | P | P | | | | | |
| Group Project | | | | | | | | | | | | | | | | |
| Journaling | | | | | | | | | | | | | | | | |
| Library Research | | | | | | | | | | | | | P | P | P | |
| Oral Report/Presentation | | | | | | | | | | | | | | | | |
| Peer Assessment | | | | | | | | | | | | | | | | |
| Portfolio | | | | | | | | | | | | | | | | |
| Pre and Post Test | | | | | | | | | | | | | | | | |
| Project Evaluation | S | S | S | S | S | S | | | S | S | | | | | | |
| Quizzes | | | | | | | | | | | | | | | | |
| Self Assessment | | | | | | | | | | | P | | | | | |
| Written Report | | | | | | | | | | | | | | | | |
| Written Tests/Examinations | P | P | P | P | P | P | | | P | | | | | | | |

**P** = this is a primary course for meeting the program learning outcome, core ability, learning college principle, or assessment method.

**S** = this course meets some of the program learning outcome, core ability, learning college principle or assessment method.

# Advanced Technology Division
## Unit Planning Budget

### Flight Technology Program Assessment
**Program Learning Outcomes, Goals and Performance Indicators**

| Program Learning Outcomes/Goals | Performance Indicators |
|---|---|
| 1) Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | 90% of the first year students will qualify for the "select student" status by receiving a recommendation from a full-time contracted faculty member.  95% percent of the second year students will complete their programs as "select students". Criteria to qualify for the "select" status will be determined and published by the faculty prior to the start of the academic year. |
| 2) Demonstrate safe work practices and equipment usage while performing operations in a flight environment. | 95% of all students will pass a safety written and demonstration test. |
| 3) The graduate will be certificated by the FAA as commercial pilot and prepared for entry-level position as a pilot and flight instructor in the air transportation industry. | 95% of the students who complete the program will have gained the necessary competencies to obtain entry level employment. |
| 4) Demonstrate knowledge and skills to qualify as a pilot crew member for corporate flight departments and manage a flight department for a corporate operator. | 95% of the students who complete the program will pass a FAA or departmental corporate crew operator's examination. |
| 5) Accurately use mathematics and systems of measurement by demonstrating proficiency in:<br>• unit conversions<br>• computational analysis defining operational performance.<br>• performance tables, charts and graphs.<br>• interpolation to derive implied values.<br>• use of aviation specific manual and electronic calculators to determine time, rate and trends. | 95% of the program completers will pass a final program computations examination with an 80% or better score. |
| 6) Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials. | All students will conduct research with citations in a written report in both the first and second year of the program. |

| Student Success Goals | Performance Indicators |
|---|---|
| Students will have access to the program. | The program will achieve the following student to faculty ratios:<br>     R-SFTE / FFTE = 10 : 1<br>     CH-SFTE / FFTE = 8 :1<br>This means for every funded faculty position 10 reimbursable student full-time equivalents should be enrolled or 8 credit hour student full-time equivalents.<br><br>The program did not meet this student access goal by achieving a 9.74 to 1 R-SFTE/FFTE ratio, and a 7.93 to 1 CH-SFTE to FFTE ratio. |

# Advanced Technology Division
## Unit Planning Budget

|  |  |
|---|---|
| Students who declare their major in this program will increase as a percentage of the total students enrolled. | 145 students were declared as flight technology majors. |
| Program graduates will increase as a percentage of the total students enrolled. |  |
| The percentage of enrolled female students in the program will exceed the percentage of females in the division programs. | 11.7% of the program students were female. 12% of the students in the advanced technology division were female. |
| The percentage of enrolled non-Caucasian program students will exceed the percentage of the non-Caucasian students in the college. | 13% of the program students were non-Caucasian. |
| The percentage of program students who complete each term will exceed the college completion rate. |  |
| The percentage of program term completers who receive a C- or greater will exceed the college "success" rate. |  |
| Students will complete the program within three years. | 90% of the students who complete the two-year program will have completed within nine terms. |
| Student completers will be asked to evaluate their overall satisfaction with the program training. | 95% of the students who complete the flight technology program will express satisfaction with the level of training provided. |
| Employers will be satisfied with the job performance of the prior year's program completers. | 90% of employers will express job performance satisfaction with the program's student completers. |

*Enrollment summary:*
Recruits and new student starts (head count) numbers are showing modest gains. FTE numbers are tending to decline. Our marketing effort appears to be reasonably effective considering we are operating with a zero marketing budget, so virtually all marketing is accomplished by sweat labor and unpaid time. Virtually all marketing is supported out of unit operational funds and resources donated by key staff; significant cost increases are severely limiting our student's ability to maintain a constant rate and robust training regimen. Students often exhaust their funds well before the end of a term. This has a highly negative impact on our operational efficiency: students must spread their training over a longer period of time, resource utilization trends "down-ward" during a term, reducing airplane fleet utilization efficiency, negatively impacts the flight instructors' revenue hours and we have to spread our maintenance personnel and office staff support costs over reduced revenue hours on the airplanes; post 911 operating environment at the national level has limited the number of international students we might otherwise attract and our high rate (fee) structure significantly limits our ability to be competitive in the larger market place. Purely in terms of costs to the students, our program is not cost competitive. Our marketing edge is the perception of quality due to our college association including financial aid, the degree program and progressively more important, our developing association with the two major Oregon universities. As a part of a four-year degree program, the articulated program is cost and education value competitive with "big name" aviation universities in the US.

*Program summary:*
Those elements of the initiative plan that can be accomplished with minimum dollars and Carl Perkins funds have been largely accomplished. Big ticket items, such as additional airplanes, replacement of airplanes and up-grades on the simulator have not been accomplished. Funds to purchase tooling for the shop to improve our ability to do engine overhauls have not been included in the annual unit budget.

*Needs assessment*
We do a needs assessment relative to the type and level of training we need to provide on a continuous basis, primarily by consulting with members in the airline and corporate aviation industry, interviews with our alumni that are now employed in the industry. We also interview our staff instructors after they have gone through a pre-employment

interview with an airline company. The objective is to identify areas we need to stress, or add content. We do not do needs assessments for individual learners apart from minimum scores on placement tests.

*Satisfaction assessment*
We do not use a formal assessment instrument. We do maintain a record of student participation, maintain a log of students cancellations and record the reasons for cancellations. This data may be used to trigger consultation with the student if the absence/cancellation instances become excessive secondary level assessments are derived from class evaluation records.

*Assessing learning outcomes:*
Due to the overall structure of this program and the influence of the FAA standards as well as a very high level awareness of safety, students are subject to a very large number of assessment/testing experiences in several modes, including written testing, oral testing and practical testing.

*Environmental assessment:*
Administration building: office spaces are cold during the winter, and colder in the summer. The outside temperature sensor is on the south side of the building – sun shines on the sensor and turns on the air conditioner, even in the winter: "the color blue is in." [The problem is a stupid computer.]  The simulator bay does not have anywhere near enough air conditioning capacity to handle the heat load during the summer.

Dispatch facilities:  Facilities are adequate; there is a need for additional computer capacity to support computer dispatching, flight records keeping capacity and an ability to doing aircraft and instructor scheduling on-line.
Shop facilities:  Overall, the shop is quite adequate, however, there are some remodeling needs required to accommodate changes in the manner we do business. The building has a lot of space that is not usable above the shop floor. A mezzanine for general storage would release shop floor space and provide for floor area to build office space and a semi-cleanroom. Some additional tooling is important to support doing engine overhauls on training fleet airplanes on site.

*Assessing cost-effectiveness:*
We periodically do rate surveys in the industry, typically by calling other programs in the nation. We also use industry resources to determine salary schedules and trends for employment.

Costs – our rate structure is near rates charged by private operators in the industry. This is a bit troubling as our students pay tuition and other fees incidental to being associated with the college which are not commonly charged by private providers. As compared to value of the training, for those students that prevail and establish a career as a pilot in the airline industry, the training we provide is absolutely essential for establishing an airline career. Pilots can expect to eventually realize greater income than professional practitioners such as physicians or lawyers (averaged income in Oregon). Generally this is true after about 10 years in the respective industries.

*Dropout assessment:*
Dropout data is not recorded as a normal part of our managed data collection.
Informal evaluation; typically, students dropout due to financial limitations, or for personal/family reasons.

*Post-completion follow-up Assessment:*
No formal post completion data is collected. Generally, our graduates are very enthusiastic about their elected career and the training experience at Lane.  They often return to visit and share about their experiences – anecdotal data.

*Qualitative Assessments:*
At this time there are no plans to increase the amount of testing (assessing). We do periodic reviews of all our course materials and related testing. All our students are required to take FAA developed and evaluated tests and our program must be flexible enough to meet the constant change in the FAA system.

*Quantitative Assessment:*
All quantitative assessments are determined by compliance with FAA minimums.

*Pre-testing/post-testing:*

# Advanced Technology Division
## Unit Planning Budget

We do not employ a system of pre-testing. We do extensive integrated testing and post testing. Testing modalities include, in-house written test instruments, FAA provided written test instruments conducted by proctors outside the program, oral exams and practical exams.

*Portfolio Assessments:*
None. Portfolio-like records are available in the form of transcripts, personal pilot logbook records, FAA certificates and earned degrees.

# Advanced Technology Division
## Unit Planning Budget

### Manufacturing Technology
**Program Learning Outcomes, Goals and Performance Indicators**

| Program Learning Outcomes/Goals | Performance Indicators |
|---|---|
| 1) Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | 80% of the first year students will qualify for the "select student" status by receiving a recommendation from a full-time contracted faculty member.  90% percent of the second year students will complete their programs as "select students". Criteria to qualify for the "select" status will be determined and published by the faculty prior to the start of the academic year. |
| 2) Demonstrate safe work practices and equipment usage while performing operations in a workstation environment. | 90% of all students will pass a safety written and demonstration test. |
| 3)  Demonstrate the use of standard machine tools employed by the modern machine shop. | 90% of the students who complete the program will have gained the necessary competencies to obtain entry level employment in a manufacturing related occupation. |
| 4) Operate 3 Axis CNC milling machines and 2 Axis CNC lathes using G-code controllers. | 90% of the students who complete the program will pass an industry standards examination. |
| 5) Use basic mathematics skills, formulas and right angle trigonometry. | 90% of the program completers will pass a final program computations examination with a 70% or better score. |
| 6) Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials. | All students will conduct research with citations in a written report in both the first and second year of the program. |
| **Student Success Goals** | **Performance Indicators** |
| Students will have access to the program. | The program will achieve the following student to faculty ratios:<br>         R-SFTE / FFTE = 26 : 1<br>         CH-SFTE / FFTE = 16 :1<br>This means for every funded faculty position 26 reimbursable student full-time equivalents should be enrolled or 16 credit hour student full-time equivalents.<br><br>The program exceeded this student access goal by achieving a 30.87 to 1 R-SFTE/FFTE ratio, and a 18.52 to 1 CH-SFTE to FFTE ratio. |
| Students who declare their major in this program will increase as a percentage of the total students enrolled. | FY2004 was the base year.  44 of the unduplicated headcount were declared majors. |
| Program graduates will increase as a percentage of the total students enrolled. | No data available |
| The percentage of enrolled female students in the program will exceed the percentage of females in the division programs. | 12% of students enrolled in the advanced technology division were female.<br>7% of the manufacturing technology students were female. |

# Advanced Technology Division
## Unit Planning Budget

| | |
|---|---|
| The percentage of enrolled non-Caucasian program students will exceed the percentage of the non-Caucasian students in the college. | 23% of the manufacturing technology students are non-Caucasian. |
| The percentage of program students who complete each term will exceed the college completion rate. | The college completion rate was 83.24%. The program completion rate was 95.74%. |
| The percentage of program term completers who receive a C- or greater will exceed the college "success" rate. | The college "success" rate was 79.08%. The program "success" rate was 95.7%. |
| Students will complete the program within three years. | 90% of the students who complete the two-year manufacturing program will have completed within nine terms. |
| Student completers will be asked to evaluate their overall satisfaction with the program training. | 95% of the students who complete the manufacturing technology program will express satisfaction with the level of training provided. |
| Employers will be satisfied with the job performance of the prior year's program completers. | 90% of employers will express job performance satisfaction with the program's student completers. On a five point Likert scale, satisfaction is greater than the midpoint. |

# Advanced Technology Division
## Unit Planning Budget

### Program Learning Outcomes Assessment Matrix

**Manufacturing Technology**

| | Program | | | Support Courses | | | | | General Education | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MFG 197 Manufacturing Technology | MFG 201 CNC Mill | MFG 202 CNC Lathe | HE 125 Workplace Safety or Alternative | WLD 151 Fundamentals of Metallurgy | WLD 121 Shielded Metal Arc Welding 1 | DRF 167 CAD 1 | ENRG 280 Cooperative Education* | Arts and Letters * | CS 120 Concepts of Computing * | CS 160 Orientation to Programming | MTH 076 Applied Geometry for Technicians | MTH 086 Applied Algebra for Technicians | WR 115W Intro to College Writing | Human Relations Requirement |
| Associate Degree Credit Hours (107 Total Credits) | 66 | 6 | | 3 | 3 | 4 | 4 | | 3 | 4 | | 4 | 4 | 3 | 3 |
| Two-year Certificate Credit Hours (85 Total Credits) | 66 | 6 | | 3 | | | | | | | | 4 | | 3 | 3 |
| **Program Learning Outcomes** | | | | | | | | | | | | | | | |
| Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics. | P | P | | P | S | S | S | P | S | S | | S | S | S | S |
| Demonstrate safe work practices and tool usage while performing operations in a shop environment. | P | P | | P | S | P | S | P | | | | | | | |
| Demonstrate the use of standard machine tools employed by the modern machine shop. | P | P | | P | P | S | S | S | | | | | | | |
| Operate 3 Axis CNC milling machines and 2 Axis CNC lathes using G-code controllers. | P | P | | S | | | S | | | | | | | | |
| Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials. | P | P | | | S | S | | | P | | | | | P | |
| Use basic mathematics skills, formulas and right angle trigonometry. | P | P | | | | | | P | | | | P | P | | |
| **Core Abilities** | | | | | | | | | | | | | | | |
| Communicate effectively. | P | P | | S | S | S | S | S | S | S | | | | P | P |
| Think critically and solve problems effectively. | P | P | | | P | P | P | | S | S | | P | P | P | P |
| Increase understanding of the relationship between self and community, including self-awareness and personal responsibility. | S | S | | S | | | | P | | | | | | | P |
| Explore academic disciplines of liberal arts, social sciences, and physical sciences. | | | | S | S | S | S | | P | P | | P | P | P | P |
| **Learning College Principles** | | | | | | | | | | | | | | | |
| Learners are active partners in the learning process. | P | P | | | | | | | | | | | | | |
| Learners are self-directed. | P | P | | | P | P | P | | | | | | | | |
| Multiple learning options for diverse learners. | P | P | | | | | | | | | | | | | |
| Learning is promoted across organizational boundaries. | S | S | | P | P | P | P | P | P | P | | P | P | P | P |
| Learning is substantive and documented. | P | P | | | | | | | | | | | | | |
| **Assessment Methods** | | | | | | | | | | | | | | | |
| Technical Skill Performance Observation/Evaluation | P | P | | | | | | | | | | | | | |
| Employability Skills Evaluation | P | P | | | | | | | | | | | | | |
| Group Project | S | S | | | | | | | | | | | | | |
| Journaling | S | S | | | | | | | | | | | | | |
| Library Research | S | S | | | | | | | | | | | | | |
| Oral Report/Presentation | S | S | | | | | | | | | | | | | |
| Peer Assessment | S | S | | | | | | | | | | | | | |
| Portfolio | S | S | | | | | | | | | | | | | |
| Pre and Post Test | P | P | | | | | | | | | | | | | |
| Project Evaluation | P | P | | | | | | | | | | | | | |
| Quizzes | S | S | | | | | | | | | | | | | |
| Self Assessment | P | P | | | | | | | | | | | | | |
| Written Report | S | S | | | | | | | | | | | | | |
| Written Tests/Examinations | S | S | | | | | | | | | | | | | |

**P** = this is a primary course for meeting the program learning outcome, core ability, learning college principle, or assessment method.

**S** = this course meets some of the program learning outcome, core ability, learning college principle or assessment method.