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### Introduction

Currently college tuition itself is frozen, but the college needs to keep up with the market, so to match inflation, colleges charge fees. Students know what their tuition itself will cost but with added fees ever growing and changing, students don't know how much they will actually owe. In an attempt to solve this problem, we looked at a way to consolidate college tuition and their fees in a model university compared to YSU's current approach.

Item/Class	Fee	Mechanical Engineering	Chemistry	Mathematics	Geolo
ENGL 1550	35	1	1	1	1
ENGL 1551	50	1	1	1	1
CMST 1545	50	1	1	1	1
FNLG 1550	65	0	1	1	0
FNLG 2600	65	0	1	1	0
AH ART 1540	35	0.0222	0.0444	0.0265	0.0444
AH ART 1541	35	0.0222	0.0444	0.0265	0.0444
AH ART 1542	35	0.0222	0.0444	0.0265	0.0444
AH DNCE 2698	85	0.0222	0.0444	0.0265	0.0444
AH ENGL 2665	35	0.0222	0.0444	0.0265	0.0444
AH REL 2617	35	0.0222	0.0444	0.0265	0.0444
AH THTR 1512	85	0.0222	0.0444	0.0265	0.0444

Figure 1

### Methods

- The goal was to create a model university that would have set prices for incoming students, as well as a set budget for each college and find a better budgeting system than what YSU currently has
- To do this, the team took four random majors in the STEM college and three random majors in the CLASS college
- After using data of enrollment and using it to predict future years of enrollment, the team noticed mechanical engineering was an outlier in the STEM college compared to the CLASS college
- Ideally, we should have looked at a high enrollment major in the CLASS college to compare to
- We made a list of every class with a fee and their fee price (as seen in figure 1 which is just the head of the list), and the other columns are the projected cosines of the odds of the certain student taking that course
- Next, we extrapolated how much all the fees would cost per major per student.

	Mechanical Engineering	Chemistry	Mathematics	Geology	English	History	Anthropology
total fee cost over 4 years	\$4,538.46	\$4,124.95	\$3,025.92	\$3,621.79	\$2,099.47	\$2,199.70	\$2,703.78
total fee cost by semester	\$567.31	\$515.62	\$378.24	\$452.72	\$262.43	\$274.96	\$337.97
tuition (fees included) over 4 years	\$36,887.58	\$36,474.07	\$35,375.04	\$35,970.91	\$34,448.59	\$34,548.82	\$35,052.90
tuition per semester (fees included)	\$4,610.95	\$4,559.26	\$4,421.88	\$4,496.36	\$4,306.07	\$4,318.60	\$4,381.61
budget 2017	\$239,769.26	\$31,914.81	\$48,640.68	\$17,985.46	\$60,285.03	\$34,548.82	\$35,052.90
prediction budget 2018	\$295,100.63	\$27,355.55	\$53,062.56	\$13,489.09	\$73,203.25	\$56,141.83	\$35,052.90
2018 budget + 6% increase	\$312,806.66	\$28,996.89	\$56,246.31	\$14,298.44	\$77,595.45	\$59,510.34	\$37,156.07
2018 budget + 6% inc. per freshman	\$9,775.21	\$9,665.63	\$9,374.39	\$9,532.29	\$9,128.88	\$9,155.44	\$9,289.02
2018 total budget for all students enrolled	\$1,241,451.45	\$115,987.55	\$173,426.14	\$42,895.31	\$219,093.02	\$215,152.78	\$106,823.71

Figure 2

### Model vs. Current YSU

After all the data was taken, the team calculated (as seen in figure 2):

- Total fee cost (four years and per semester)
- Tuition cost (four years and per semester)
- 2017 budget
- 2018 prediction budget and 6% increase budget (which the state allows)
- Total budget of all students enrolled in each program (freshman-senior)

Then, the team compared the average tuition per student per year compared to YSU's current system for future years to come (as seen in figure 3).

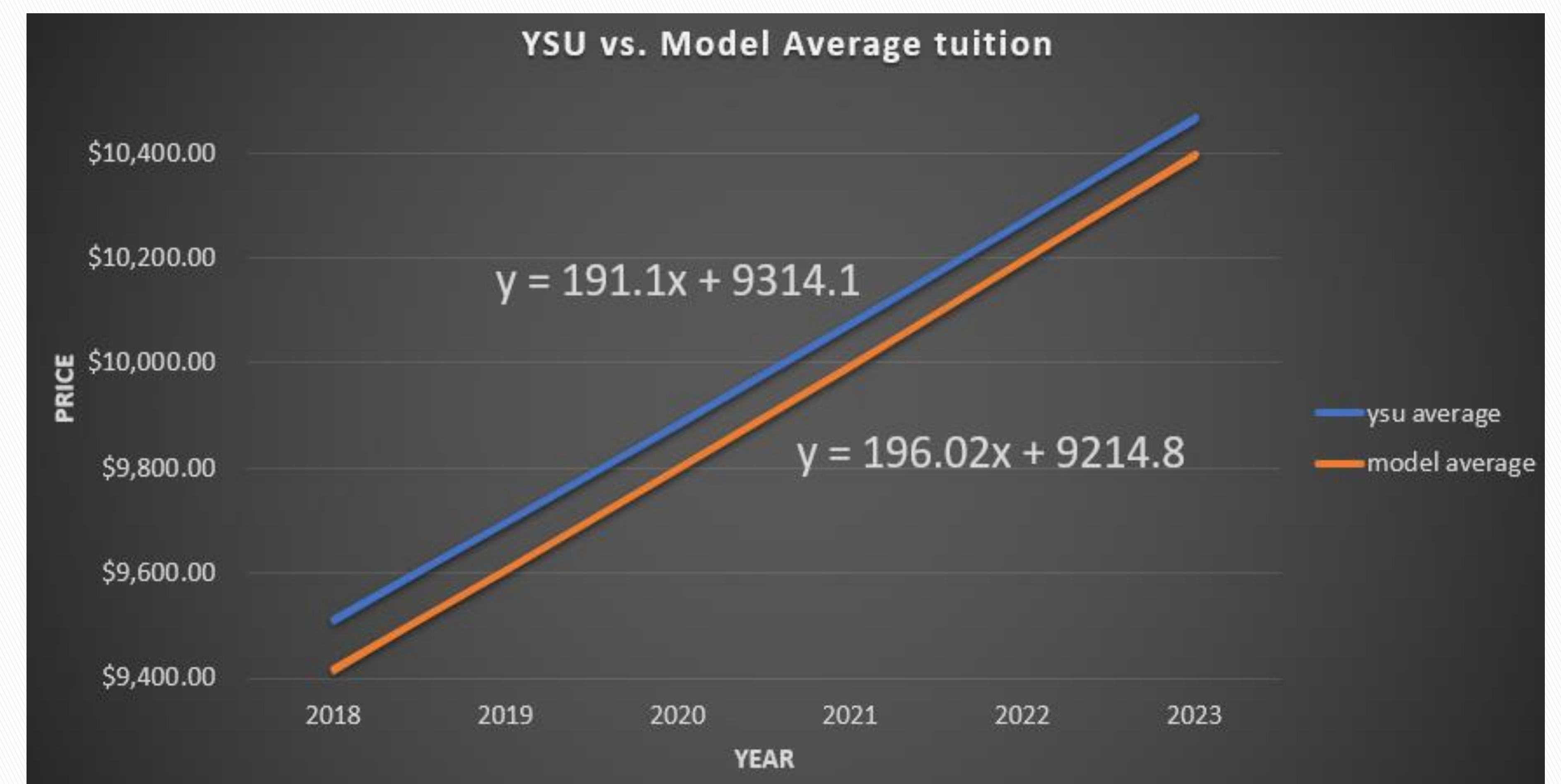


Figure 3

### Results/Future Considerations

Overall we found our Model university is a more efficient than YSU:

- Each college will be able to budget their money rather than not knowing how much they will receive (as seen in figure 4)
  - Students will know a set price for each semester where fees don't fluctuate someone's budget
- There are many things that we could consider in the future with this project, some of these are:
- Minors and double majors
  - Calculating more with the budget which would require more data
  - More accurate representation of electives, which would require more statistical data on classes
  - Redistribution of fees to departments and being able to compare it to YSU
  - A model that actively compares ALL classes so the model is more accurate

	Department Receiving						
Department From	Mech Eng	Chemistry	English	Geology	Math	History	Anthropology
Mech Eng	\$1,415.00	\$135.00	\$85.00	\$0.00	\$100.00	\$1.25	\$0.50
Chemistry	\$0.00	\$1,170.00	\$85.00	\$21.21	\$50.00	\$2.50	\$1.00
English	\$0.00	\$55.86	\$85.00	\$21.21	\$0.00	\$2.50	\$1.00
Geology	\$0.00	\$135.00	\$85.00	\$1,060.00	\$0.00	\$1.25	\$0.50
Math	\$0.00	\$547.17	\$85.00	\$5.44	\$135.00	\$1.33	\$0.50
History	\$0.00	\$37.24	\$85.00	\$14.14	\$0.00	\$210.00	\$0.00
Anthropology	\$0.00	\$144.31	\$85.00	\$7.07	\$0.00	\$2.50	\$495.00
Over Four Years For All Students	\$359,410.00	\$91,581.08	\$37,570.00	\$12,095.34	\$31,595.00	\$10,485.37	\$11,607.00
Per Year For All Students	\$89,852.50	\$22,895.27	\$9,392.50	\$3,023.83	\$7,898.75	\$2,621.34	\$2,901.75
Per Semester For All Students	\$44,926.25	\$11,447.64	\$4,696.25	\$1,511.92	\$3,949.38	\$1,310.67	\$1,450.88
Over Four Years Per Student	\$813.14	\$207.20	\$85.00	\$27.37	\$71.48	\$23.72	\$26.26

Figure 4