Methodology

**Revenues**

1. Course level data produced by OIRE that captures students and revenues is used as the basis for revenue calculations. To train the data for predictions, three years of data is used – FY18, FY19, and FY20.
2. Majors that are no longer offered have been removed from the three years. These are less than 1% of all courses in all the years.
3. For the remaining data, the revenues were summed at the Term-Course level to get each course’s individual revenues.
4. The courses were then matched with courses in the faculty data to create a dataset that is unique at Faculty-Term-Course level. For the courses taught by multiple faculty members, the revenue was split equally between the faculty departments.
5. Using this dataset, faculty department level revenues were calculated for the entire year.
6. Then removing the spring courses, the ratios of SCCH for all fall courses in each year were calculated for each department separately. This is to capture the contribution of each course to a department’s revenue, **assuming a consistent year-on-year relationship between a department’s Fall revenue and its Spring revenue.**
7. Using the above data, a machine learning algorithm, Random Forest, was used to predict revenues at course level for each department in FY21. Since Spring enrollments are not yet available, the methodology establishes a relationship between courses taught by a department in the Fall term and its overall yearly revenue.
8. Using the above relationship, Random Forest, predicts the yearly revenue for each department based on the number of courses and the enrollment in the Fall of 2021.
9. FY20 summer revenues are used as proxy for FY21 summer revenues

**Notes:**

1. In allocating courses to departments, not all courses were matched to faculty members. This is because Faculty data is not ready yet. For these courses, their course department is used as faculty department assuming that most of the courses will be taught by faculty of the same department.

**Expenses**

1. The base file for the expense analysis is the budgetary expense file from Adaptive.
2. The allocation of expenses are made based on expense description. All department focused expenses are treated as direct costs. Most of the other expenses are treated as indirect costs or auxiliary costs. Some expenses are also categorized as Non-Law expenses.
3. The distribution of expenses is based on student ratios, either across the colleges or across the university, based on the type of expense.
4. It is assumed that summer instructional expenses are baked into the college level expenses.

**Calculations:**

1. Gross Margins = Net Revenues – Direct Costs
2. Profits/Losses = Net Revenues – Direct Costs – Indirect Costs – Auxiliary Costs + Auxiliary Revenues + Revenues from courses without an instructor.