


Effective and Efficient: Analytics for Successful Academic Program Development


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TEXAS STATE UNIVERSITY
The rising STAR of Texas

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MEMBER OF THE TEXAS STATE UNIVERSITY SYSTEM



Context

- ✦ Large public institution (38,000+ students)
- ✦ Teaching heritage and research vision
- ✦ Primacy of academic affairs
- ✦ Faculty-driven governance and curriculum model
- ✦ Strategic planning and resource allocation
- ✦ State funding mechanism and standards
- ✦ Transparency

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I. Agenda and Outcomes

- ✦ Describe the major elements of job market assessment and how it informs new program development
- ✦ Understand key factors for establishing the budget requirements of new academic programs
- ✦ Evaluate an institution's approach to job market assessment and budget development for new academic programs
- ✦ Appreciate the value of team-based and analytics-based process for justifying new academic programs to stakeholders

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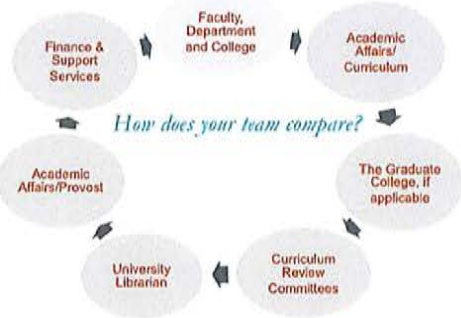


II. New Academic Programs – Proposal

- ✦ Job Market Need + Existing Programs
- ✦ Enrollment Projections + Admissions Standards
- ✦ Curriculum + Degree Plan
- ✦ Marketable Skills + Higher Ed Board Mandates
- ✦ Readiness + Personnel Needs and Quality
- ✦ Facilities and Equipment
- ✦ Costs
- ✦ Funding
- ✦ Assessment




New Program Team and Iterative Process






III. Job Market Need

- ✦ Using official databases, demonstrate that the workforce needs additional graduates from the proposed degree program. *Think: Unmet Demand*
- ✦ Examine similar programs that already exist in Texas at public institutions, along with the number of graduates. *Think: Existing Supply*
- ✦ Calculate the gap between jobs available and graduates of existing programs in Texas.
- ✦ The gap needs to be sufficiently large so that existing programs cannot meet it by accepting and graduating a few more students per year.






Jobs Available for Program Graduates


- Determine CIP code of proposed program
- Use CIP to SOC crosswalk to identify occupations associated with the CIP code
- Review occupations to determine the level of education typically required (bachelor's, master's, etc)
- Review state, regional and national workforce projections for occupations identified
- Assess job openings against program graduates in the state to identify a gap between supply and demand



Data Sources


- Standard Occupational Classifications (USBLS)
- Classification of Instructional Programs (NCES)
- State labor market (Texas Workforce Commission)
- Similar programs and graduates (Texas Higher Education Coordinating Board)
- Regional labor market (Austin Chamber of Commerce)
- Industry reports
- Commissioned reports



Try it yourself


Exercise:
Assess the Need for a New Academic Program



Exemplar: PhD, Materials Science, Engineering, and Commercialization

- ✦ Prepares scientists and engineers to perform interdisciplinary research on scale-dependent materials and equips them as effective leaders and entrepreneurs in technological innovation.
- ✦ Demand in Texas for materials scientists will increase 18 percent and demand for materials engineers will rise 21 percent, far outpacing national projections.
- ✦ Texas Instruments: *The proposed program will address the challenge we face with the growing shortage of appropriately educated and trained scientists... will also help to ensure that these scientists are sensitive to the interdisciplinary nature of the field of nanotechnology, and are equipped ... to the requirements of the successful delivery and commercialization of our technology.*


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IV. Curriculum Decisions and Outcomes

- ✦ Job market assessment
- ✦ Economic and labor forecasts
- ✦ Professional associations and industry groups
- ✦ Commissioned reports and surveys
- ✦ Marketable skills
- ✦ Accreditation and licensure


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V. Resources and Budget Needs


- ✦ Budget is a five-year summary of costs and funding for the following:
 - ✓ Faculty, Graduate Assistants, and Staff
 - ✓ Equipment and Facilities
 - ✓ Operating Costs and Library
 - ✓ State Formula Funding
 - ✓ Designated and Graduate Tuition
 - ✓ Grants and Other Sources
- ✦ Proposal budgets are jointly developed with chairs, deans, AVPAA, Associate Provost, and budget staff
- ✦ Provost and President approve final budgets

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VI. Curriculum & Enrollment Drive Costs

- 1) Determine new program curriculum sequence
- 2) Determine student enrollments
- 3) Map instructors to course sections
- 4) Map other academic programs in the same unit
- 5) Determine minimum number of new and replacement personnel to implement new program
- 6) Determine salaries and when to hire new and replacement personnel
- 7) Determine costs and when new facilities, equipment, and other resources are needed



Exemplar: PhD, Computer Science Curriculum Map

Fall 2021	Fall 2020	Spring 2021	Summer 2021
Year 4 25 students	CS 7300 (all Y4 students) Dr. Ngu Anticipated Enrollment = 9	CS 7314 (Y4 IM students) Dr. Zare Anticipated Enrollment = 5	Bootcamp I (all Y4 students) Dr. Beall & Dr. Chittenden
	CS 7313 (all Y4 students) Dr. Lu Anticipated Enrollment = 9	CS 7321 (Y4 IM students) Dr. Komegoriiev Anticipated Enrollment = 5	As needed: CS 7199, CS 7299, CS 7399, CS 7599, CS 7699, CS 7999
	CS 7324 (Y3 IM students) Dr. Tamir Anticipated Enrollment = 3	CS 7332 (Y4 SS students) Dr. Burtcher Anticipated Enrollment = 4	
	CS 7331 (all Y4 students) Dr. Qassem Anticipated Enrollment = 9	CS 7351 (all Y4 students) New Assistant Professor 2 Anticipated Enrollment = 9	
	CS 7343 (Y3 SS students) Dr. Chen Anticipated Enrollment = 3	CS 7999 (all Y2 students) Anticipated Enrollment = 6	
	CS 7999 (all Y2 students) Anticipated Enrollment = 6	MSEC 7302 (all Y3 students) Dr. Chittenden Anticipated Enrollment = 6	



Try it yourself

Exercise:
Map the Curriculum and Determine Faculty Needs
