



*International Food and Agribusiness Management Review  
Volume 15 Special Issue A*

## **A Dynamic and Flexible Undergraduate Curriculum: Preparing Agribusiness Students for a Continually Changing Agricultural Sector**

*Global Networks, Global Perspectives and Global Talent  
Discussions on the Development of Human Capital in Agribusiness<sup>1</sup>*

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### **Abstract**

Individuals entering the Agribusiness industry need to have the flexibility to adapt to a rapidly changing global environment, and so does an Agribusiness curriculum. This essay provides an overview of a major curriculum overhaul that has transformed the Department of Agribusiness at the California Polytechnic State University. A rigid concentration structure has been reformed to a more flexible and dynamic no-concentration structure to develop successful future leaders in an ever-evolving industry. This essay explains the need for a more flexible undergraduate agribusiness curriculum and identifies its potential benefits and drawbacks.

**Keywords:** Agribusiness Undergraduate Curriculum, Dynamic, Flexibility, Structure

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<sup>1</sup> This Special Issue was made possible through the generous support of Alltech and Kincannon & Reed. The essay collection was distributed during a special session on human capital development presented during the IFAMA 2012 Forum in Shanghai, China on June 14, 2012.

## **Introduction**

Today's agricultural sector is a dynamic and rapidly evolving industry. Global competition is requiring agribusinesses to move with much more agility and flexibility than was needed in the past. This is especially true in California where the state produces agricultural commodities worth over \$37.5 billion and exports approximately \$14.7 billion to more than 150 countries in 2010 (CDFA 2010; AIC 2010). Individuals entering this sector need to have the flexibility to adapt to a fast changing global environment. Their knowledge base and skill sets need to be current and they should graduate with the ability to develop future necessary skills.

Universities have developed curriculums to train individuals for the agribusiness industry. In comparison to the agricultural sector, a typical university tends to move much slower in the decision-making process. Many times the curriculum process can take years to make small changes, while large changes can take decades. The more rigid a curriculum is, the less likely it can meet the needs of an industry that is rapidly changing.

This essay is meant to provide an overview of a major curriculum overhaul that has transformed the Agribusiness Department (AGB) at the California Polytechnic State University (Cal Poly) from a rigid concentration structure to a more flexible and dynamic structure allowing students more choice in class selection. The main themes presented are: a) the key issues with AGB's previous curriculum, b) a high level comparison in terms of flexibility of the old and the new curriculums, c) the perceived benefits and drawbacks of the new curriculum, and d) evidence of benefits since the implementation of the new curriculum and the key future assessment metrics.

## **Issues with Previous Curriculum**

Cal Poly AGB has 22 full-time equivalent faculty members, where 14 are tenured or tenure-track faculty, educating approximately 620 students in the major. It offers a minor that serves an estimated 250 students, while providing a heavy service component to the rest of the college.

Prior to changing its curriculum, AGB had a very rigid concentration structure offering concentrations in the areas of Agricultural Marketing, Agricultural Finance, Agribusiness Management, Agricultural Policy, and International Agribusiness Management. A sixth concentration allowed the student to work with an advisor to develop her own concentration. While providing greater flexibility, it was rarely chosen and difficult to implement. In addition to concentration courses, students were required to take 28 quarter credits in agricultural science, 40 credits in the major, 48 credits in general education, and 25 credits in support. Students were allocated only 11 free elective credits.

The faculty identified three key issues with the past curriculum. First, students had very little choice in the classes they took. This caused a "check-off the requirement" mentality rather than an acquisition of useful skills. Second, the department had to provide the course work for all the concentrations consistently across the year regardless of the demand leading to inefficiencies in course offerings. Third, concentrations locked the department into serving particular industries whether they were growing or declining.

In May 2008, the curriculum committee convened to discuss these three key issues. After reviewing how other universities were providing their curriculum, information was given to the faculty and the AGB industry advisory council in Fall 2008. An analysis was then conducted on the demand and efficiency of course offerings from the concentration structure. Feedback from these meetings and the demand analysis were synthesized allowing for three options to be developed for discussion. The first option was to maintain the status quo. Option two was to reduce the number of concentrations to a more manageable level, while doing some minor adjustments to these surviving concentrations. The third option was to completely abandon

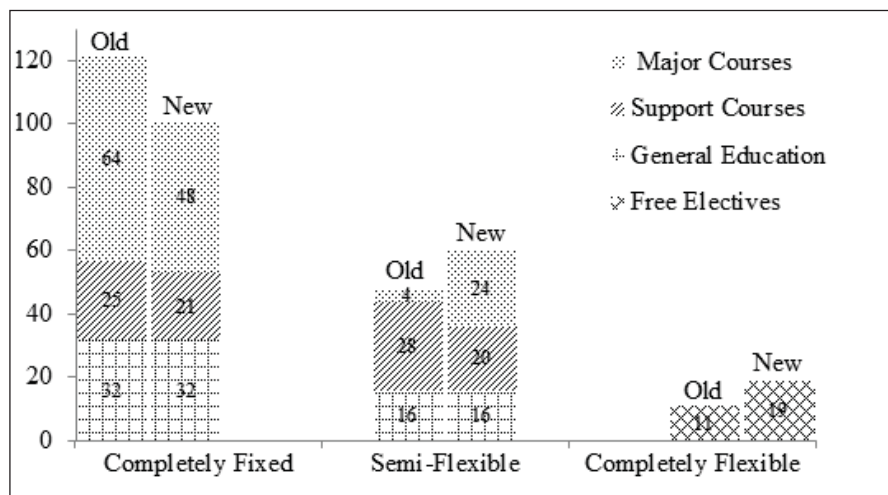
the concentration structure and develop a more flexible and dynamic curriculum. In May 2009, a strong majority voted for the third. The new curriculum went into effect for the 2011 to 2013 catalog cycle.

There were two main catalysts that facilitated the curriculum reform. First, the AGB industry advisory council was requesting a more specific skill set from the students that the concentration model was not providing. Second, the faculty underwent a philosophical change in that the curriculum should be more dynamic and flexible to mirror the global agricultural business environment.

### An Overview of the Old Curriculum and New Curriculum

The curriculum in AGB can be broken-up into four main areas – major courses, support courses, general education courses, and electives. These four areas can be classified based on the level of flexibility the students have. The first level is the completely fixed category, where students are required to take a certain course and have no alternatives. The second level is the semi-flexible category. Courses in this category allow students the ability to select a subset of courses from a broad range of prescribed courses in agricultural science, business, or agricultural business. The completely flexible category makes up the third classification, where students can choose any course the university offers. Figure 1 shows the difference between AGB’s previous curriculum and the new curriculum categorized by the students’ ability to choose courses. As demonstrated in Figure 1, the new curriculum has much more flexibility over the old structure. Twenty credits from the completely fixed category have been shifted to the semi-flexible and completely flexible categories. Specifically, the completely flexible category gained 8 units, while the semi-flexible gained 12.

To provide more flexibility, it was decided that the core course offerings needed to be updated. The core was strengthened by adding another course in accounting and a course in computer data analysis to the existing courses in communication and leadership, accounting, microeconomics, finance, marketing, policy, human resource management and cultural diversity, research methodology, and senior project/thesis. The skill sets built in the core have been shown highly desired by the stakeholders nowadays (Boland and Akridge 2006; Downey 2004).



**Figure 1.** Comparison of the old and new Agribusiness curriculum.

## Perceived Benefits and Potential Drawbacks

Relative to the old concentration-based curriculum, AGB's new structure has multiple benefits including:

- It can motivate students to establish their sense of responsibility and identify future career and interest direction.
- It provides more flexibility in selecting courses that would better prepare students for their future careers.
- Faculty members are liberated to design new courses that reflect the changing nature of the industry
- Departmental resources are more efficiently allocated.
- Concentrations in the old curriculum can still be achieved under the new curriculum.
- Collaboration with industry partners can occur in designing recommendations for students who are seeking employment in a particular industry.

Universities are not producing graduates with the skill sets companies actually need. While flexibility has advantages, there are potential drawbacks. Students' increased choices may cause them to be overwhelmed with the options. Another drawback is that some students might not have a clear vision about their career path and prefer a more rigid structure. It is believed that both of these can be handled with proper student advising and emphasis maps (i.e., documents outlining a series of recommended courses for various interest areas). A third potential drawback is the lack of a stamped concentration "label" in AGB's graduates to present to the industry. While this puts a greater burden on companies that are hiring to decipher whether an AGB graduate is a good fit for them, it allows the student to niche herself based on her course selection and more importantly her reasoning for taking particular courses.

## Current Feedback and Future Assessment

- About 30% of the seniors who have the option of graduating under the new or old curriculum have opted to switch to the new curriculum. Students have show strong interest in the new flexible curriculum.
- In the past year, six new courses have been developed by multiple faculty members as free electives. By contrast, only three new courses were developed and offered in the prior 10 years.
- The AGB department is working with the California agricultural finance industry in developing new courses, internship programs, extension workshops, and applied research projects. In the past 6 months, this program alone has developed three new courses, one upcoming State-wide conference on risk management and two on-going research projects based on the industry needs.
- The low-demand courses are no longer offered without affecting students' graduation. The average number of annual classroom teaching workload for a full time tenured and tenure-track faculty reduced from 7-8 courses last year to 6 courses this year. It is expected this number will keep decreasing to 5.5 courses next year, according to the department chair.

The longer-run benefits and costs shall be assessed based on the following key instruments: an annual survey to the industry, an annual survey to our recent graduates, and students' graduation rate will be monitored and analyzed.

## Conclusion

Although a concentration-based curriculum structure worked well in the past for the department, its rigidity did not allow for the flexibility needed to develop successful future leaders in a rapidly evolving industry. The department has undergone a dramatic curriculum reform recently by removing the concentrations. The AGB department is aimed at cultivating students' responsibility and critical thinking capability, providing more freedom for the students in course selection and for faculty in new course development, allocating de-

partmental resources in a more efficient manner, and working more closely with the industry. All these can be achieved without losing the educational essence and quality. The potential drawbacks related to the new curriculum structure can be properly handled through more academic and career advising. Furthermore, the potential drawback of students not being able to show a concentration label to the industry when they graduate can be offset by the invaluable information derived from the students' personal thoughts put into the course selection process. Although the new curriculum has been implemented for only six months, it has already received positive feedback from the students, faculty, industry and administration. A continued assessment plan has been developed to evaluate its longer-term effect.

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