Structuring Undergraduate Agricultural Economics and Agribusiness Programs

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There are numerous advantages to having an undergraduate degree in Agricultural Economics / Agribusiness

Balanced degrees – economics, agriculture, business, science, liberal arts

Good starting salaries

Upward mobility

Strong employment rates

But ... relatively few people know what an agricultural economist is or what one does.

What are some issues we need to consider in structuring our degree programs?

¹Georgetown University (2011)
For U.S. Undergraduate Agricultural Economics and Agribusiness Programs, Discuss:

- Enrollment Trends
- Desired Attributes of Our Graduates
- What Employers Want
- Current Structure of Our Programs – What We Are Training Our Students to Do

How Do We Most Effectively Structure Our Undergraduate Curricula?
Enrollment Trends
Notable Trends

◦ Change from *Agricultural Economics to Agribusiness* programs over the past 40 years (Heiman et al. 2002; Perry 2010)

◦ Greater emphasis on *written and oral communication skills, economics, and business*; lower emphasis on *technical agriculture* (Larson 1996)

◦ Growth in *natural resources and applied economics*

◦ Enrollment trends:
  ◦ **1980s:** Declining enrollment (Adrian 1990)
  ◦ **1990s:** Increased Agribusiness enrollment more than offsetting decreased Agricultural Economics enrollment (Heiman et al. 2002)
  ◦ **2000s:** Increased enrollment
Fall Enrollment, 106 U.S. State Universities with Agricultural Economics, Business, and Management Programs, FAEIS Database

27% Increase
What Is Generally Considered as We Structure Programs?

**Internal Factors**
- Desired attributes of college graduates
- Observed student strengths and weaknesses
- Institutional factors, perspectives of attitudes of faculty
- Structure of other programs

**External Factors**
- Employer feedback
- Regional employment opportunities
- Alumni perceptions
Desired Attributes of College Graduates
What Are We Training Our Students to Do?

*Be well-informed citizens so they can make better decisions.*
- Broad general education
- Specific skills

*Perform as agricultural business professionals in:*
- Management positions in agricultural business firms
- Commodity, wholesale, and retail marketing
- Finance and banking
- Real estate, rural land appraisal
- Government and the public sector
- Production agriculture
- Agricultural policy and economic analysis
- Graduate school
Employer Feedback
What Do Agribusiness Employers Want?

Ratings Converted to Rankings of 16 Skills, Abilities, and Experiences Sought in New Hires (NFAMEC 2004)

1. Interpersonal communication skills
2. Critical thinking skills
3. Writing skills
4. Computer skills
5. Cultural / gender awareness / sensitivity
6. Quantitative analysis skills
7. Knowledge of general business management
8. Oral presentation skills
9. Knowledge of the food / agribusiness markets
10. Knowledge of accounting and finance
11. Intern / co-op work experience
12. Knowledge of macroeconomics, trade, etc.
13. Broad-based knowledge in liberal arts
14. International experience
15. Foreign language
16. Production agriculture experience
What Do Agribusiness Employers Want?

Conjoint analysis of 137 agricultural business employers showed ranking of importance of attributes of agribusiness graduates (Noel and Qenani 2013):

1. Creativity
2. Communication skills
3. Critical thinking skills
4. Teamwork skills
5. Knowledge of marketing
6. Knowledge of finance
Structure of Programs
Collecting Information about Agricultural Economics and Agribusiness Programs

Websites of U.S. 1862 and 1890 land grant universities

For universities with agricultural economics and/or agribusiness programs, record:

- *Degree name*
- *Areas of concentration*
- *Coursework required*

Not included:

- B.S. in Agriculture with Agribusiness area of concentration
- B.S. in Resource Economics, etc., offered by agricultural economics departments

Limitation: content may be “hidden” in a required course
Names of U.S. Agricultural Economics B.S. Degree Programs, n=17

- Agricultural Economics: 10
- Agricultural and Applied Economics: 2
- Agricultural and Resource Economics: 2
- Agricultural and Consumer Economics: 1
- Food and Resource Economics: 1
Numbers of U.S. Agricultural Business B.S. Degree Programs by Name, n=35

- Agribusiness: 14
- Agricultural Business: 8
- Agribusiness Management: 4
- Agricultural Business Management: 3
- Agribusiness Management and Rural Development: 1
- Agricultural and Food Business Management: 1
- Farm Management: 1
- Food and Agribusiness Marketing and Management: 1
- Food and Agricultural Business: 2
- Food Industry Marketing and Administration: 1
Names of “Hybrid” U.S. Agricultural Business and Agricultural Economics Programs (n=6)

<table>
<thead>
<tr>
<th>Program Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agribusiness and Applied Economics</td>
</tr>
<tr>
<td>Agricultural Business and Economics</td>
</tr>
<tr>
<td>Agricultural and Food Business Economics</td>
</tr>
<tr>
<td>Agricultural Economics and Agricultural Business</td>
</tr>
<tr>
<td>Agricultural Economics and Management</td>
</tr>
<tr>
<td>Applied Economics and Management</td>
</tr>
</tbody>
</table>
Numbers of Programs Offering Various Areas of Concentration

- Agribusiness Management / Management
- Farm / Ranch Management
- Agricultural / Food / Commodity Marketing
- Agricultural Finance / Finance
- International Trade / Business / Development
- Agricultural / Applied Economics
- Environmental / Resource Economics / Management
- Agribusiness Management and Marketing
- Policy
- Pre-Law
- Accounting / Agricultural Records
- Pre-Vet
- Quantitative Skills / Analysis / Theory
- Rural Entrepreneurship
## Percentages of Programs Requiring Specific Economic Theory Courses

<table>
<thead>
<tr>
<th>Class</th>
<th>% All Programs, n=58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of Microeconomics</td>
<td>100</td>
</tr>
<tr>
<td>Principles of Macroeconomics</td>
<td>95</td>
</tr>
<tr>
<td>Intermediate Microeconomics</td>
<td>71</td>
</tr>
<tr>
<td>Intermediate Macroeconomics</td>
<td>43</td>
</tr>
<tr>
<td>Any Other Economics Course</td>
<td>24</td>
</tr>
</tbody>
</table>

“Any Other Economics Course” includes Production Economics; Managerial Economics; Farm and Food System Economics; Introduction to Economic Institutions, History, and Principles; and Introduction to Global Economic Institutions and Business Environment.
## Percentages of Programs Requiring Specific Math and Quantitative Courses

<table>
<thead>
<tr>
<th>Class</th>
<th>% All Programs, n=58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus I</td>
<td>91</td>
</tr>
<tr>
<td>Calculus II</td>
<td>12</td>
</tr>
<tr>
<td>Statistics</td>
<td>93</td>
</tr>
<tr>
<td>Quantitative Methods in Ag Economics</td>
<td>45</td>
</tr>
<tr>
<td>Any Quantitative Methods Course</td>
<td>55</td>
</tr>
</tbody>
</table>

4 programs require 2 statistics courses.
12 programs require an econometrics course.
2 programs require an operations research course.
## Percentages of Programs Requiring Specific Policy, Trade, and Law Courses

<table>
<thead>
<tr>
<th>Class</th>
<th>Agricultural Business, n=35</th>
<th>Agricultural Economics, n=17</th>
<th>All Programs, n=58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Trade</td>
<td>9</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Agricultural Policy</td>
<td></td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Any Ag Policy, Trade, or International Econ Course</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Law**</td>
<td>29</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>Agricultural Law*</td>
<td>31</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>Any Business and/or Agricultural Law Course***</td>
<td>60</td>
<td>6</td>
<td>41</td>
</tr>
</tbody>
</table>

***, **, and * indicate significance at the P ≤ 0.01, 0.05, and 0.10 levels, respectively.
Percentages of Programs Requiring Specific Accounting and Finance Courses

<table>
<thead>
<tr>
<th>Class</th>
<th>Agricultural Business, n=35</th>
<th>Agricultural Economics, n=17</th>
<th>All Programs, n=58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting I</td>
<td>93</td>
<td></td>
<td>93</td>
</tr>
<tr>
<td>Accounting II</td>
<td>52</td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>Agribusiness Finance</td>
<td>24</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Agricultural Finance</td>
<td>29</td>
<td></td>
<td>29</td>
</tr>
<tr>
<td>Finance (Business School)*</td>
<td>22</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>Any Finance Course***</td>
<td>85</td>
<td>35</td>
<td>71</td>
</tr>
</tbody>
</table>

*** and * indicate the percentages differ at the P ≤ 0.01 and P ≤ 0.10 levels, respectively.
<table>
<thead>
<tr>
<th>Class</th>
<th>Agricultural Business, n=35</th>
<th>Agricultural Economics, n=17</th>
<th>All Programs, n=58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management (Business School)*</td>
<td>29</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>Agribusiness Management**</td>
<td>63</td>
<td>35</td>
<td>55</td>
</tr>
<tr>
<td>Farm Management**</td>
<td>40</td>
<td>12</td>
<td>31</td>
</tr>
<tr>
<td>Any Management Course***</td>
<td>91</td>
<td>53</td>
<td>81</td>
</tr>
</tbody>
</table>

***, **, and * indicate the percentages differ at the P ≤ 0.01, 0.05, and 0.10 levels, respectively.

22% of programs required 2 management courses.
17% of programs required 3 management courses.
2 programs required 4 management courses.
### Percentages of Programs Requiring Specific Prices and Marketing Courses

<table>
<thead>
<tr>
<th>Class</th>
<th>Agricultural Business, n=35</th>
<th>Agricultural Economics, n=17</th>
<th>All Programs, n=58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Prices</td>
<td></td>
<td></td>
<td>22%</td>
</tr>
<tr>
<td>Agricultural Marketing</td>
<td></td>
<td></td>
<td>67%</td>
</tr>
<tr>
<td>Agribusiness Marketing</td>
<td></td>
<td></td>
<td>17%</td>
</tr>
<tr>
<td>Marketing (Business School)**</td>
<td>34</td>
<td>6</td>
<td>26%</td>
</tr>
<tr>
<td>Any Marketing Course*</td>
<td>97</td>
<td>71</td>
<td>86%</td>
</tr>
</tbody>
</table>

** and * indicate the percentages differ at the P ≤ 0.05 and 0.10 levels, respectively.

22% of programs required 2 marketing courses.
10% of programs required ≥3 marketing courses.
Percentages of Programs Requiring Other Courses

<table>
<thead>
<tr>
<th>Class</th>
<th>% All Programs, n=58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Development Economics Course</td>
<td>7</td>
</tr>
<tr>
<td>Any Resource or Environmental Economics Course</td>
<td>26</td>
</tr>
<tr>
<td>Any Professional Writing Course</td>
<td>53</td>
</tr>
<tr>
<td>Public Speaking / Communications Course</td>
<td>50</td>
</tr>
<tr>
<td>Technical Agriculture Course(s)</td>
<td>58</td>
</tr>
</tbody>
</table>
Observations on Structuring Undergraduate Programs
Observations – Name Recognition

106 programs at state universities

Top 3 names: Agribusiness, Agricultural Economics, Agricultural Business

65 different names for areas of concentration

58 land grant undergraduate programs have 21 different names

<20% of high school students can name a job other than farming that an agricultural economics graduate might secure\(^1\)

Contrast: Most universities offer economics, sociology, chemistry, and biology degrees.

How do potential students and employers respond to different degree names?

\(^1\)Espey and Boys (2015)
## Observations – Coursework Required

<table>
<thead>
<tr>
<th>Standard Courses for Most (&gt;90%) Agricultural Economics and Agribusiness Programs</th>
<th>Courses More Likely Required in Agribusiness than Agricultural Economics Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of Microeconomics</td>
<td>Law</td>
</tr>
<tr>
<td>Principles of Macroeconomics</td>
<td>Finance</td>
</tr>
<tr>
<td>Accounting I</td>
<td>Marketing</td>
</tr>
<tr>
<td>Calculus I</td>
<td>Management</td>
</tr>
<tr>
<td>Statistics</td>
<td></td>
</tr>
</tbody>
</table>

Most programs have rather extensive “choose from a list” of agricultural economics/business courses.
Observations – “Soft Skills”

Employers emphasize the importance of “soft skills:” communication, team building, etc. Are our programs adequately addressing these needs?

- Specific courses in communications, ethics, etc.
- How do we incorporate these skills into existing agricultural business / economics courses, particularly as class size increases?

Are there opportunities for increased experiential learning?

- Study abroad, internships, service learning, undergraduate research.
- Two programs require internships.
- One program requires experiential / interdisciplinary learning experiences.
Observations – Areas of Concentration

Examining the list of areas of concentration gives ideas for recruitment.

◦ Pre-Law
◦ Pre-Vet

Agricultural Economics curricula have more “select from a list of courses” requirements. Are more flexible curricula without areas of concentration\(^1\) an improvement over more structured programs?

◦ Motivates students to identify interests / career path.
◦ Greater flexibility for selecting coursework that fits the career path.
◦ **But … be careful to ensure competencies in core areas.**

\(^1\)See Hurley and Cai (2012).
Demand for our graduates will continue to grow.

Our graduates have strong skill sets: economics, management, marketing, team building, speaking, writing, technical agriculture.

Most of the dollar spent for food goes to management and marketing, with new products always being introduced. Concentrate on Agribusiness.

Inform the public (potential students, parents, employers) of opportunities.

Agricultural Economics and Agribusiness undergraduate numbers are increasing.

Continue to adjust curricula to changes in the food industry and employer needs.
Thank You!
References


