Integrating and assessing existing agribusiness coursework into a new undergraduate international agribusiness management concentration

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May 2001

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Keywords: Teaching, Agribusiness, International, Assessment
JEL Codes: A100, A220, Q130, Q170
As the agricultural and world economies change, many undergraduate agribusiness and agricultural economic departments are faced with the pressures of staying relevant. Agribusiness and agricultural economic departments are finding that the traditional agricultural constituency is not providing enough qualified students to maintain their traditional curricula, especially given the changing rural demographics and career paths of rural youth in the United States. At a broad level, we see the impact of these trends in undergraduate departmental name changes from agricultural economics to applied economics. Within many undergraduate programs, the trend is also manifested by the declining enrollment in traditional agricultural production majors or concentrations and an increased desire by students to focus on areas such as globalization and e-commerce. Given the desire to maintain or grow enrollment as well as to maintain relevancy, undergraduate agricultural economics programs are also developing new majors or concentrations.

The management of such change is often handled as a war effort -- substantial effort and thought are expended by the faculty to attain success within levels of acceptable collateral damage to faculty and students. These efforts are often not organized and undertaken with the idea that they will have to be repeated at some time in the future even though future change is inevitable. The purpose of this paper is to use the example of the design and assessment of a new agribusiness concentration to develop a process by which subsequent change can be managed. Most importantly, this paper will emphasize how the change can be managed within the context of coordinating change with the ongoing curriculum and employment needs of a department's students.

In the case of the Agribusiness Department in the California Polytechnic State University (Cal Poly) in San Luis Obispo, a new concentration was developed -- International Agribusiness
Management. While there were four pre-existing concentrations that followed traditional lines (Farm and Ranch Management, Marketing, Agricultural Policy and Agricultural Finance), the new international agribusiness management concentration was created to prepare students for understanding global agricultural production, marketing, trade policies, and other factors influencing U.S. exports of agricultural commodities and products. In developing this concentration, agribusiness leaders were consulted to ensure that such a move was of value to them as potential employers of Cal Poly agribusiness graduates. In addition, the faculty in the department had to ensure that coursework could be developed to provide a coherent knowledge base for the concentration.

Given the nature of developing a new concentration and getting it approved by numerous university committees, the department relied primarily on courses that already existed in the course catalog. These were a combination of courses that were either electives or requirements for the pre-existing concentrations and, therefore, were created to serve slightly different academic purposes. Now that the department is in its first year of offering the new concentration, it finds itself in the process of adjusting the content of a number of courses to fit the needs of the new concentration. These adjustments must also ensure that the sequence of courses coheres enough to continue to fulfill the needs of the pre-existing concentrations. Complicating this process is the fact that faculty enjoy substantial leeway in constituting and presenting their courses.

Given these potential difficulties, the department must develop a means by which to assess the implementation of the new concentration. Specifically, the department must assess each course in the concentration and determine if it meets the goals of the new concentration. This assessment must occur at a number of different levels since the concentration serves
different constituencies inside and outside the university. Assessment addresses the following items:

- Is the course content reinforcing the key international agribusiness concepts introduced in prerequisite courses?
- Is the course content laying a sufficient base for the learning of new international agribusiness concepts that will be presented in the courses for which a course is a prerequisite?
- Is the course content introducing and/or reinforcing the general concepts and skills (marginal analysis, comparative advantage, various quantitative skills, written and oral communication) that all students, regardless of concentration, must master?
- Is the course content relevant to the needs of employers in today's agricultural economy?

While this list is not exhaustive, it does demonstrate the complexity of assessment.

The paper will look at how one particular course, AGB 318: Global Agricultural Marketing and Trade, fits into the needs of the new and existing concentrations as well as into the needs of potential employers. This will be done by designing a set of matrices for the different levels of assessment as well as designing a flow diagram that specifically looks at the placement of the course within the flow of the coursework of different concentrations and the specific skills and concepts covered in the coursework. This will help faculty focus on what needs to be covered as well as highlight the relevance of the course to other courses in the curriculum. Once this is done, the paper will lay out a plan for extending the process to all required courses in all concentrations. If successful, the process can be used to manage the
ongoing change in a department as well as aid faculty, both new hires as well as existing faculty teaching a new prep, in keeping courses relevant and up-to-date.

**Background to the International Agribusiness Management concentration**

The International Agribusiness Management concentration was implemented in the Fall of 2000. It is a concentration made up of six (6) 4-unit courses in agribusiness or business and one (1) 4-unit class taken as area study concentration elective (ideally, a language). The coursework in the concentration overlaps most with Agribusiness Marketing concentration and the Agribusiness Policy concentration -- of the 28 units, each concentration shares 2 4-unit classes (Marketing shares AGB 318 and AGB 323; Policy shares AGB 307 and AGB 323).

Because the International Agribusiness Management concentration is brand new, it is difficult to estimate the how many of the nearly 900 Cal Poly agribusiness students intend to complete it. It is expected that those students choosing the new concentration will come out of the Marketing concentration (which generally covers about one-half of agribusiness students) and the Policy concentration (which is very small).

The list of courses in the International Agribusiness Management concentration is as follows:

- AGB 307: World Food Economy;
- AGB 318: Global Agricultural Marketing and Trade;
- AGB 323: Managerial Accounting;
- BUS 302: International & Cross Cultural Management;
• AGB 422: Logistics in Global Agribusiness; and,

• AGB 451: Strategy and Cases in International Agribusiness.

In addition to these courses, the Agribusiness Department requires additional core courses (Agribusiness courses which all Agribusiness students must take) and agricultural support courses (courses which, while not focusing on agribusiness, are considered critical to understanding agriculture). Combined with general education courses, a student must complete 186 units in order to graduate.

The course that is the focus of this paper is AGB 318. In order to understand how other courses impact AGB 318, it is important to characterize the class itself. According to the official course outline for AGB 318, some of the objectives are

"[to develop] awareness of global forces shaping change in U.S. and world agricultural trade; acquire knowledge about the role and importance of U.S. and international institutions and their relationship to international trade; develop [the] ability to conceptualize and analyze the impacts of trade policies, exchange rates and other factors on U.S. agriculture; develop the ability to apply critical thought and analysis to practical international trade problems and issues."

Some of the topics included in the teaching of the class, according to the course outline, are as follows:

• Review of basic economic concepts including supply and demand, production functions, production possibilities curves, profit maximization and consumer utility maximization;
• Trade theory including comparative and competitive advantage and protectionism;
• Trade policy, international trade organizations, international trade agreements and institutions affecting trade in agriculture;
• Macroeconomic policies and agricultural trade;
• International agricultural marketing issues including strategic alliances, joint ventures, direct foreign investment, direct exporting, international agricultural distribution systems, culture and trade, and international promotions and advertising;

1 Another class, BUS 433: International Business Finance, can be substituted if desired. For the purposes of this paper, discussion will be confined to the Agribusiness class.
2 This class and other classes in the Agribusiness curriculum, will be described using the Agribusiness Department's official course outline.
3 AGB 318 Course outline, Agribusiness Department, January 1999.
Agricultural trade mechanics.

Prior to beginning the AGB 318 course, students are either required or expected to have finished the following coursework:

1. AGB 101: Introduction to Agribusiness

   • **Objectives:** "Students will have a knowledge of size, scope, and dynamics of the agribusiness complex. They will be provided with the exposure to a number of tools used to make management decisions. Students will come to see the breadth of the agribusiness and will be better equipped to choose in which sector they will prepare for a career."\(^4\)

   • Includes the following topics:
     ⇒ Role, organization and management of agribusiness in California, the U.S. and the global economy;
     ⇒ Financial management and control of agribusiness;
     ⇒ Marketing in agribusiness, the system, the management and the selling process;
     ⇒ Production planning and operation;
     ⇒ Human resource management.

2. AGB 212: Agricultural Economics

   • **Objectives:** "Knowledge of the agricultural product price formulating factors is acquired. Students must comprehend the theoretical and applied price-making forces. Students must apply the theoretical models to real-world markets. Special emphasis is placed on the analysis skills in which students must separate a complex whole into its parts."\(^5\)

   • Includes the following topics:
     ⇒ Utility analysis and indifference curves;
     ⇒ Demand and elasticities;
     ⇒ Production functions and their analysis;
     ⇒ Profit maximization;
     ⇒ Cost functions;
     ⇒ Firm structure including perfect competition and economies of size and scale;
     ⇒ Marginal cost and the development of the firm's supply function;
     ⇒ Price elasticies;
     ⇒ Development of the market supply;
     ⇒ Two-input, one-output production (isoquants, isocosts, marginal rates of substitution and cost minimization);

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4 AGB 101 Course outline, Agribusiness Department, December 1998.
5 AGB 212 Course outline, Agribusiness Department, December 1998.
⇒ One-input, two-output production (production possibilities frontiers, marginal rates of product substitution, isorevenue lines and revenue maximization);
⇒ Imperfect competition.

3. ECON 222: Macroeconomics

- **Catalog description:** "Introduction to economic problems. Macroeconomic analysis and principles. Aggregate output, employment, prices, and economic policies for changing these variables. International trade and finance. Issues of economic growth and development. Comparative economic systems and economies in transition."

4. AGB 301: Food and Fiber Marketing

- **Objectives:** "AGB 301 aims to develop: an understanding of the needs of food consumers (nutrition, safety, sensory, and social needs) in different cultures and societies; the ability to analyze the complex system required to supply food products to the final consumer; knowledge of the economic, political, social, and environmental factors that affect the food system; an understanding of food marketing systems from a global perspective, recognizing the importance of issues such as trade policy, food security, nutrition, and environmental issues; a focus on food marketing from a managerial viewpoint, whereby all members of the food system recognize that they are not only dealing with their immediate customers, but need to understand the management decisions facing their customers' customers, down to the final consumer."

- Includes the following topics:
  ⇒ Internationalization of food products;
  ⇒ Food marketing institutions;
  ⇒ Marketing by type of customer and production;
  ⇒ Marketing management of branded products;
  ⇒ Food safety (microbiological, chemical and physical) and its effect on food marketing;
  ⇒ Biotechnology;
  ⇒ Channels of distribution and biological influences;
  ⇒ Measuring efficiency (technical and price) in the food system;
  ⇒ Coordination and globalization in food processing and manufacture;
  ⇒ Marketing intermediaries;
  ⇒ Commodity grading and standardization;
  ⇒ Commodity pricing;
  ⇒ Commodity price risk and futures markets;
  ⇒ Target markets and market segmentation;

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7 AGB 301 Course outline, Agribusiness Department, August 2000.
⇒ Market research;
⇒ Product positioning;
⇒ Food product management and development;
⇒ Promotion of food products;
⇒ Pricing of food products;
⇒ Planning and implementation of food marketing.

5. AGB 312: Agricultural Policy

- **Objectives:** "Students are expected to develop an understanding of the agricultural setting as related to government policy, knowledge of the objectives of government agricultural policy, an understanding of the different kinds of government programs that impact agriculture, the ability to recognize and evaluate changes in agricultural policy, and the ability to make business and operational adjustments in the farm and farm-related business in order to gain maximum efficiency within the framework of existing government agricultural policy."\(^8\)

- Includes the following topics:
  ⇒ Agricultural policy evaluation process;
  ⇒ Global issues that have impacted agricultural policy including exchange rates, trade and country-to-country linkages;
  ⇒ Macroeconomic policies affecting agriculture including interest rates, inflation, government spending, monetary policy;
  ⇒ Specific topics such as the changing structure of agriculture, FAIR, marketing orders, agricultural trade policy, foreign aid and development, water policy, urban expansion and government regulation of food.

These are the courses that serve as the foundation for AGB 318, the background which the instructor can and should expect the students to have a grasp. In looking at the prerequisite coursework, we can evaluate the nature of the background that can be used in the development of an assessment matrix.

We must also look at the courses for which AGB 318 is a direct or indirect prerequisite in order to assess its role in the curriculum.\(^9\) As the latest Agribusiness curriculum reads, AGB 318

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\(^8\) AGB 312 Course outline, Agribusiness Department, December 1998.

\(^9\) There are a number of courses which occupy a similar space as AGB 318 in terms of curriculum location -- courses required in the concentration which may share similar prerequisites but which students could easily take before, after or concurrently with AGB 318. Such courses include AGB 307 (World Food Economy), AGB 323 (Agribusiness Managerial Accounting), AGB 213 (Agricultural Economic Analysis), BUS 302 (International and Cross Cultural Management).
is a direct prerequisite for AGB 422 (Logistics in Global Agribusiness) and AGB 451 (Strategy and Cases in International Agribusiness). AGB 451 is technically the capstone class for the concentration, the class which is meant to bring together and integrate all the principle ideas and skills presented throughout the International Agribusiness Management concentration. Prior to developing the matrix of assessment, we will look at the objectives and selected topics for each of the classes for which AGB 318 is a prerequisite.

6. AGB 422: Logistics in Global Agribusiness

- **Objectives:** "Upon successful completion of this course a student will have demonstrated the ability to analyze agribusiness logistics problems using current concepts and techniques; analyze the costs of alternative methods of interstate/international transportation; and, understand the supply chain system of food and fiber production."  
  
- Includes the following topics:
  - Supply chain management;
  - Global sourcing of inputs;
  - Alternative inventory models;
  - Alternative transportation methods;
  - Freight forwarders, brokers, airport/seaport authorities;
  - Packaging and environmental requirements for perishable food items; and,
  - Vertical integration versus strategic alliances for distribution of goods within the receiving country.

7. AGB 422: Strategies and Cases in International Agribusiness

- **Objectives:** "Upon successful completion of this course a student will have demonstrated the ability to develop the tools and techniques of environmental analysis for use in assessing foreign and global conditions, opportunities, and threats; be able to look at international agribusiness and functionally integrate strategy design and negotiation in the face of rapidly changing international conditions; understand the typical factors of export and import trade, transnational investment, finance, marketing, production, taxation on the organization and management of the international agribusiness firm."

- Include the following topics:

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10 AGB 422 Course outline, Agribusiness Department, January 1999.
11 AGB 451 Course outline, Agribusiness Department, January 1999.
⇒ The basic strategic management model (developing a mission statement, establishing corporate objectives, analyzing the external environment, analyzing the company's strength and weaknesses);
⇒ Identifying a company's strengths and weaknesses both internally and externally (SWOT analysis);
⇒ Strategic analysis; and,
⇒ Implementation of the strategic plan.

A Matrix Approach for Assessment

The key to the matrix approach of assessment is putting in sufficient quality of effort in developing a comprehensive list of concepts and topics. Obviously, the more general the list is, the harder it is to determine how it is being used and, subsequently, the less valuable the exercise is. The expectation is that developing a list of concepts and topics for a course requires communicating with those faculty teaching the prerequisite courses as well as with those faculty teaching the follow-up courses. This is very much different from a more traditional approach in which a course outline (usually required by the university) is drafted by a single person and filed with the appropriate authorities, never to be looked at again until a new course outline must be developed. A matrix approach lends itself to more meaningful course development and regular updates.

For instance, the agricultural policy course (AGB 312) covers such topics as exchange rate policy and agricultural trade policy. These topics could be further narrowed down to include the mechanisms of floating exchange rates, the impact of pooled currencies such as the Euro on U.S. agricultural exports, the impact of the CAP in the European Union, etc. A teacher of AGB 318 could look at that list and determine whether those concepts or topics need to be simply recapped or further developed by integrating it into the mechanics of a company's development of a joint venture with a European firm. By communicating with the AGB 312 professor, it
becomes somewhat easier to estimate the amount of time that might have to be taken to adequately cover the new topic.

Another, different, example would be communicating with a faculty member teaching a follow-up course such as the logistics course (AGB 422). The teacher of AGB 318 might be considering covering the specific requirements of phytosanitary certificates for fresh produce. In communicating with the logistics teacher, it might be determined that such a topic is expected to be covered in-depth and that a broader look at phytosanitary regulations might be of greater value to students in AGB 318. In going through this process, the content of a course goes through a straightforward adjustment process.

Although the set-up costs of coming up with a comprehensive list of concepts and topics are potentially considerable, the process does have a number of payoffs. These payoffs include the following:

- It increases the sharing of information among faculty and keeping content among courses coordinated;
- Once a matrix is developed, it becomes easier for others to teach the course since concepts are clearly delineated in terms of course content and in terms of the connection of the course with other courses;
- It becomes easier to evaluate the success of a course based on the list of concepts, it also becomes easier to determine the relative value of introducing new topics or concepts since they must be evaluated in context with existing topics as well as in the context of what will be covered in follow-up courses; and,
- It becomes easier to determine when too much content is trying to be forced into a course -- it helps avoid overstuffing the sausage, so to speak.
Having justified a matrix approach, the paper will now briefly delineate the three different types of matrices that can help improve the assessment of course content. The first matrix follows the format described above and needs no further explanation. The second matrix uses the same list of concepts and topics developed in the first matrix (and, therefore, does not require any additional effort) and determines how the concepts are reinforced beyond lecture. The possibilities include individual oral and written work, group oral and written work and individual analytical work. The description of the reinforcement is as follows:

- **Individual oral**: The reinforcement of the concept (new or old) through individual oral expression ranging from short oral answers to straightforward questions from the teacher to involved questions requiring in-class processing of information.

- **Individual written**: The reinforcement of the concept (new or old) through individual written expression ranging from short answer quizzes to ungraded in-class writing exercises (short- or medium-length answers) to long-answer open-ended essay questions.

- **Group oral**: The reinforcement of the concept (new or old) through group oral expression ranging from simple small group discussion (no instructor intervention or involvement) to involvement in non-adversarial group presentations to adversarial group presentations (debates).

- **Group written**: The reinforcement of the concept (new or old) through group written expression ranging from group homeworks involving answering straightforward written questions, to group homeworks involving answering open-ended questions, to group papers of at least moderate length.

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12 Drafts of the three matrices can be found in the appendix.
• Individual analytical: This would be an involved, individually written or oral assignment which would require the integration of multiple concepts, developed in such a way as to require potentially original thought on the part of the individual. This matrix plays more of a personal planning tool for the teacher in terms of clearly identifying how the teacher wants students to work with the concepts. Again, this exercise would help to set priorities since not all concepts can be reinforced with written or oral work.

The third and final matrix is significantly different from the first two in that it allows potential employers some exposure or feedback to what is being covered in the classroom. This matrix focuses on the second and third columns of Matrix No. 1 (those concepts which are significantly added to or are newly introduced by AGB 318).\(^{13}\) It is expected that industry advisors, not the department faculty, would evaluate the concepts and their relevance. In allowing industry to have a role, the degree of involvement being determined by the department, faculty get outside comments on their decisions regarding course content. The matrix is straightforward in that industry representatives would look over the course concepts and check off whether the concepts, in their opinions, are of no or low relevance\(^{14}\), somewhat relevant\(^{15}\) or highly relevant.\(^{16}\)

In looking at the three different matrices, there is considerable flexibility in using them. Clearly, the first matrix is the most important in that it has the most immediacy to course development and teaching. The second and third matrices add value to course development but

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\(^{13}\) It is hypothesized that those concepts which are not reviewed in any depth would be better evaluated (re: employer relevance) in the context of other courses where the concept is introduced or reviewed in greater depth.

\(^{14}\) Student's knowledge (cursory or deep) of concept or topic is unlikely to be of any demonstrative value to a potential employer.

\(^{15}\) Student's knowledge (cursory or deep) of concept or topic may be of some demonstrative value to a potential employer in that it could prove to add some marginal added value in the work environment.

\(^{16}\) Student's knowledge (cursory or deep) of concept or topic would be of significant demonstrative value to a potential employer in that it would add significant added value in the work environment or would save the employer significant resources in training or in speed of acquisition of responsibilities.
can easily be added later, depending upon the assessment needs and priorities of the department. Successful development of the first matrix makes it easier to develop the second and third matrices.

While this section has focused on a single course in the International Agribusiness Management concentration, it should be extended to the other courses in the concentration. In doing so, it should become more clear how coherent the concentration is. What may also become apparent is whether or not there are conflicts within a course that serves both the International Agribusiness Management and the Agribusiness Marketing concentrations. Another question that might come up is whether there is sufficient difference between the two concentrations to justify their separation. Clearly, such questions require considerable attention and the first step towards answering them may lie in drawing up the matrices for the courses and concentrations in question.

Extending the Assessment Process Beyond the International Concentration

Extending the assessment process beyond the international concentration is actually very straightforward and easier to do once it has been done for one concentration. The fact that there is course overlap between concentrations, much of the work regarding the listing of concepts and topics may have already been done in the processing of evaluating the international concentration. While it may not be advantageous to undertake an assessment of all concentrations in a short period of time, the process of doing so for one concentration should generate positive externalities for others in terms of focusing teacher attention on the goals and methods for each class as well as increasing the amount of involvement of faculty in courses they do not teach yet are affected by.
Finally, successful implementation of the matrix assessment should make it much easier to evaluate potential new courses and possible new concentrations in the future. By looking at current course and concentration assessments, it may be easier to determine whether there are significant enough gaps in subject matter to justify new courses or concentrations or whether existing courses can be adjusted to address the additional subject matter. It may be determined that older concepts are worth replacing rather than maintaining.
Appendix
Matrix No. 1: Connection across courses

<table>
<thead>
<tr>
<th>Concept or topic</th>
<th>Concept or topic</th>
<th>Concept or topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>briefly reinforced in AGB 318 (1)</td>
<td>significantly built upon in AGB 318 (2)</td>
<td>introduced in AGB 318 (3)</td>
</tr>
</tbody>
</table>

*Indicate connection between courses via an “x”.

A. Prerequisite Courses

1. AGB 101: Introduction to Agribusiness
   * Role, organization and management of agribusiness in California, the U.S. and the global economy
   * Financial management and control of agribusiness
   * Marketing in agribusiness, the system, the management and the selling process
   * Production planning and operation
   * Human resource management

2. AGB 212: Agricultural Economics Marketing
   * Utility analysis and indifference curves
   * Demand and elasticities
   * Production functions and their analysis
   * Profit maximization
   * Cost functions
   * Firm structure including perfect competition and economies of size and scale
   * Marginal cost and the development of the firm's supply function
   * Price elasticities
   * Development of the market supply
   * Two-input, one-output production (isoquants, isocosts, marginal rates of substitution and cost minimization)
   * One-input, two-output production (production possibilities frontiers, marginal rates of product substitution, isorevenue lines and revenue maximization)
   * Imperfect competition
3. **ECON 222: Macroeconomics**
   - Aggregate output and economic policies for changing these variables
   - Aggregate employment and economic policies for changing this variable
   - Aggregate prices and economic policies for changing these variables
   - International trade and finance
   - Issues of economic growth and development
   - Comparative economic systems
   - Economies in transition

4. **AGB 301: Food and Fiber Marketing**
   - Internationalization of food products
   - Financial management and control of agribusiness
   - Food marketing institutions
   - Marketing by type of customer and production
   - Marketing management of branded products;
   - Food safety (microbiological, chemical and physical) and its effect on food marketing;
   - Biotechnology
   - Channels of distribution and biological influences
   - Measuring efficiency (technical and price) in the food system
   - Coordination and globalization in food processing and manufacture
   - Marketing intermediaries
   - Commodity grading and standardization
   - Commodity pricing
   - Commodity price risk and futures markets
   - Target markets and market segmentation
| * Market research                      |   |   |
| * Product positioning                 |   |   |
| * Food product management and development |   |   |
| * Promotion of food products          |   |   |
| * Pricing of food products            |   |   |
| * Planning and implementation of food marketing |   |   |

5. **AGB 312: Agricultural Policy**

* Agricultural policy evaluation process
* Global issues that have impacted agricultural policy including exchange rates, trade and country-to-country linkages
* Macroeconomic policies affecting agriculture including interest rates, inflation, government spending, monetary policy
* Specific topics such as the changing structure of agriculture, FAIR, marketing orders, agricultural trade policy, foreign aid and development, water policy, urban expansion and government regulation of food
B. Follow-up Courses

6. AGB 422: Logistics in Global Agribusiness
   * Supply chain management
   * Global sourcing of inputs
   * Alternative inventory models
   * Alternative transportation methods
   * Freight forwarders, brokers, airport/seaport authorities
   * Packaging and environmental requirements for perishable food items
   * Vertical integration versus strategic alliances for distribution of goods within the receiving country

7. AGB 451: Strategies and Cases in International Agribusiness
   * The basic strategic management model (developing a mission statement, establishing corporate objectives, analyzing the external environment, analyzing the company's strength and weaknesses)
   * Identifying a company's strengths and weaknesses both internally and externally (SWOT analysis)
   * Strategic analysis
   * Implementation of the strategic plan

C. Concurrent Courses

8. AGB 307: World Food Economy
9. AGB 323: Managerial Accounting
10. BUS 302: International & Cross Cultural Management
Footnotes:

(1) Concept requires sufficient familiarity without the need of in-depth review. Concept is a foundation for learning new material. Likely that the concept has been covered in at least two courses which are prerequisites to AGB 318.

(2) Concept is reintroduced in some depth so that a greater degree of complexity may be added. It could be assumed that the concept has been encountered only once before or that the new complexity is such that a fundamental review of the original concept is required in order to ensure that the additional information is adequately absorbed.

(3) Concept is introduced and lays a foundation for further development in a follow-up course for which AGB 318 is a prerequisite.
Matrix No. 2: Skills and the reinforcement of concepts

<table>
<thead>
<tr>
<th>Individual Oral (1) L / M / H</th>
<th>Individual Written (2) L / M / H</th>
<th>Group Oral (3) L / M / H</th>
<th>Group Written (4) L / M / H</th>
<th>Individual Analytical (5) Indicate via &quot;x&quot;</th>
</tr>
</thead>
</table>

**A. Prerequisite Courses**

1. **AGB 101: Introduction to Agribusiness**
   * Role, organization and management of agribusiness in California, the U.S. and the global economy
   * Financial management and control of agribusiness
   * Marketing in agribusiness, the system, the management and the selling process
   * Production planning and operation
   * Human resource management

2. **AGB 212: Agricultural Economics Marketing**
   * Utility analysis and indifference curves
   * Demand and elasticities
   * Production functions and their analysis
   * Profit maximization
   * Cost functions
   * Firm structure including perfect competition and economies of size and scale
   * Marginal cost and the development of the firm’s supply function
   * Price elasticities
   * Development of the market supply
   * Two-input, one-output production (isoquants, isocosts, marginal rates of substitution and cost minimization)
   * One-input, two-output production (production possibilities frontiers, marginal rates of product substitution, isorevenue lines and revenue maximization)
   * Imperfect competition
3. **ECON 222: Macroeconomics**

- Aggregate output and economic policies for changing these variables
- Aggregate employment and economic policies for changing this variable
- Aggregate prices and economic policies for changing these variables
- International trade and finance
- Issues of economic growth and development
- Comparative economic systems
- Economies in transition

4. **AGB 301: Food and Fiber Marketing**

- Internationalization of food products
- Financial management and control of agribusiness
- Food marketing institutions
- Marketing by type of customer and production
- Marketing management of branded products;
- Food safety (microbiological, chemical and physical) and its effect on food marketing;
- Biotechnology
- Channels of distribution and biological influences
- Measuring efficiency (technical and price) in the food system
- Coordination and globalization in food processing and manufacture
- Marketing intermediaries
- Commodity grading and standardization
- Commodity pricing
- Commodity price risk and futures markets
- Target markets and market segmentation
- Market research
- Product positioning
- Food product management and development
- Promotion of food products
- Pricing of food products
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* Macroeconomic policies affecting agriculture including interest rates, inflation, government spending, monetary policy
* Specific topics such as the changing structure of agriculture, FAIR, marketing orders, agricultural trade policy, foreign aid and development, water policy, urban expansion and government regulation of food

B. Follow-up Courses
6. AGB 422: Logistics in Global Agribusiness
* Supply chain management
* Global sourcing of inputs
* Alternative inventory models
* Alternative transportation methods
* Freight forwarders, brokers, airport/seaport authorities
* Packaging and environmental requirements for perishable food items
* Vertical integration versus strategic alliances for distribution of goods within the receiving country

7. AGB 451: Strategies and Cases in International Agribusiness
* The basic strategic management model (developing a mission statement, establishing corporate objectives, analyzing the external environment, analyzing the company's strength and weaknesses)
* Identifying a company's strengths and weaknesses both internally and externally (SWOT analysis)
* Strategic analysis
* Implementation of the strategic plan
C. Concurrent Courses

8. AGB 307: World Food Economy
9. AGB 323: Managerial Accounting
10. BUS 302: International & Cross Cultural Management

Footnotes:

(1) The reinforcement of the concept (new or old) through individual oral expression ranging from short oral answers to straightforward questions from the teacher to involved questions requiring in-class processing of information.

(2) The reinforcement of the concept (new or old) through individual written expression ranging from short answer quizzes to ungraded in-class writing exercises (short- or medium-length answers) to long-answer open-ended essay questions.

(3) The reinforcement of the concept (new or old) through group oral expression ranging from simple small group discussion (no instructor intervention or involvement) to involvement in non-adversarial group presentations to adversarial group presentations (debates).

(4) The reinforcement of the concept (new or old) through group written expression ranging from group homeworks involving answering straightforward written questions, to group homeworks involving answering open-ended questions, to group papers of at least moderate length.

(5) This would be an involved, individually written or oral assignment which would require the integration of multiple concepts, developed in such a way as to require potentially original thought on the part of the individual.
### Matrix No. 3: Relevance of concepts/topics to potential employers

<table>
<thead>
<tr>
<th>No/Low relevance to potential employers (1)</th>
<th>Some relevance to potential employers (2)</th>
<th>High relevance to potential employers (3)</th>
</tr>
</thead>
</table>

#### A. Prerequisite Courses

1. **AGB 101: Introduction to Agribusiness**
   - Role, organization and management of agribusiness in California, the U.S. and the global economy
   - Financial management and control of agribusiness
   - Marketing in agribusiness, the system, the management and the selling process
   - Production planning and operation
   - Human resource management

2. **AGB 212: Agricultural Economics Marketing**
   - Utility analysis and indifference curves
   - Demand and elasticities
   - Production functions and their analysis
   - Profit maximization
   - Cost functions
   - Firm structure including perfect competition and economies of size and scale
   - Marginal cost and the development of the firm's supply function
   - Price elasticities
   - Development of the market supply
   - Two-input, one-output production (isoquants, isocosts, marginal rates of substitution and cost minimization)
   - One-input, two-output production (production possibilities frontiers, marginal rates of product substitution, isorevenue lines and revenue maximization)
   - Imperfect competition
### 3. ECON 222: Macroeconomics

- Aggregate output and economic policies for changing these variables
- Aggregate employment and economic policies for changing this variable
- Aggregate prices and economic policies for changing these variables
- International trade and finance
- Issues of economic growth and development
- Comparative economic systems
- Economies in transition

### 4. AGB 301: Food and Fiber Marketing

- Internationalization of food products
- Financial management and control of agribusiness
- Food marketing institutions
- Marketing by type of customer and production
- Marketing management of branded products;
- Food safety (microbiological, chemical and physical) and its effect on food marketing;
- Biotechnology
- Channels of distribution and biological influences
- Measuring efficiency (technical and price) in the food system
- Coordination and globalization in food processing and manufacture
- Marketing intermediaries
- Commodity grading and standardization
- Commodity pricing
- Commodity price risk and futures markets
- Target markets and market segmentation
- Market research
- Product positioning
- Food product management and development
- Promotion of food products
- Pricing of food products
- Planning and implementation of food marketing
5. **AGB 312: Agricultural Policy**
   - Agricultural policy evaluation process
   - Global issues that have impacted agricultural policy including exchange rates, trade and country-to-country linkages
   - Macroeconomic policies affecting agriculture including interest rates, inflation, government spending, monetary policy
   - Specific topics such as the changing structure of agriculture, FAIR, marketing orders, agricultural trade policy, foreign aid and development, water policy, urban expansion and government regulation of food

### B. Follow-up Courses

**6. AGB 422: Logistics in Global Agribusiness**
   - Supply chain management
   - Global sourcing of inputs
   - Alternative inventory models
   - Alternative transportation methods
   - Freight forwarders, brokers, airport/seaport authorities
   - Packaging and environmental requirements for perishable food items
   - Vertical integration versus strategic alliances for distribution of goods within the receiving country

**7. AGB 451: Strategies and Cases in International Agribusiness**
   - The basic strategic management model (developing a mission statement, establishing corporate objectives, analyzing the external environment, analyzing the company's strength and weaknesses)
   - Identifying a company's strengths and weaknesses both internally and externally (SWOT analysis)
   - Strategic analysis
   - Implementation of the strategic plan

### C. Concurrent Courses

8. AGB 307: World Food Economy
9. AGB 323: Managerial Accounting
10. BUS 302: International & Cross Cultural Management
Note:
This matrix focuses on the second and third columns of Matrix No. 1 (those concepts which are significantly added to or are newly introduced by AGB 318). It is hypothesized that those concepts which are not reviewed in any depth would be better evaluated (re: employer relevance) in the context of other courses where the concept is introduced or reviewed in greater depth. It is expected that industry advisors, not the department faculty, would evaluate the concepts and their relevance.

Footnotes:

(1) Student's knowledge (cursory or deep) of concept or topic is unlikely to be of any demonstrative value to a potential employer.

(2) Student's knowledge (cursory or deep) of concept or topic may be of some demonstrative value to a potential employer in that it could prove to add some marginal added value in the work environment.

(3) Student's knowledge (cursory or deep) of concept or topic would be of significant demonstrative value to a potential employer in that it would add significant added value in the work environment or would save the employer significant resources in training or in speed of acquisition of responsibilities.