

## Education and Student Affairs Committee

Board of Regents, State of Iowa

**Subject:** Proposals for two new degree programs at Iowa State University

**Prepared by:** Anthony G. Girardi

**Date Submitted:** December 1, 2004

### **Recommended Action:**

Recommend that the Board approve Iowa State University's proposals to establish the following two programs:

1. Bachelor of Science and Master of Science in Diet and Exercise;
2. Master of Science in Enterprise Computing.

### **Executive Summary:**

Iowa State University has requested approval of two new degree programs.

The Interinstitutional Committee on Educational Coordination (ICEC) and the Board Office have reviewed the program proposals and recommend these for approval. The program proposals meet the Board of Regents criteria for new programs.

### **Bachelor of Science and Master of Science in Diet and Exercise**

#### **Background:**

Collaboration between two departments

The B.S. and M.S. in Diet and Exercise program would constitute a collaboration between the Department of Food Science and Human Nutrition and the Department of Health and Human Performance.

The program would lead to a B.S. and M.S. awarded simultaneously upon completion of degree requirements.

Graduates of this program would be eligible both for accreditation as health fitness instructors (ACSM) and for entry into dietetic internships leading to credentialing as registered dietitians (ADA).

#### **Analysis:**

Review of New Program Criteria

The following is an analysis of the program proposal with respect to the Board's criteria for new program approval.

Program aligns with college's mission

#### **Centrality.**

The proposal is consistent with the college's mission, in part because it would, as expressed in its scope statement, "combine the perspectives and methods of more than one discipline to better address the questions and problems confronting Iowa, the nation, and the world."

Program supported through reallocation

Costs.

Resources for the proposed program will be obtained through reallocations within the two collaborating departments. Reallocated costs are associated primarily with faculty time for the supervision of graduate theses. Estimated total incremental costs over three years are \$270,000.

Knowledge of diet and exercise expected to be in high demand

Need/Demand.

Society's need and the labor market demand for people with expertise in the field of diet and exercise are widely expected to be fairly robust in the years ahead as a consequence of societal concerns related to health and nutrition. Career opportunities for program graduates include practice in cardiac rehabilitation programs, health clubs, wellness centers, public and private clinics, community health programming, and preventive medicine programs.

The program would integrate instruction from two disciplines

Quality.

The university advises that the program would efficiently merge the resources available in two departments to provide instruction in two distinct yet inter-related discipline areas. The proposed program will be accredited by the American Dietetics Association (ADA).

The program would be distinct from other programs

Duplication.

Both UNI and SUI offer programs in the same broad field of study. The proposed program would differ from these offerings for the following reasons:

1. The proposed program emphasizes applied nutrition and exercise physiology.
2. The proposed program would provide preparation leading to certification as a health fitness instructor and qualify students for entry into dietetic internships, a step in credentialing registered dietitians.

Accredited by American Dietetics Association

Accreditation Standards.

The program will be accredited by the American Dietetics Association (ADA). Accreditation is granted for a 10-year period, and calls for a 5-year review and 10-year site visit.

Consistent with institutional strategic plan

Link to Institutional Strategic Planning.

The proposed program is consistent with the institution's strategic goals because it builds on the collaboration of departments and responds to societal needs.

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## **Master of Science Degree in Enterprise Computing**

### **Background:**

Collaboration among three departments Enterprise computing is an emerging field that addresses the information gap between business and engineering. The proposed M.S. in Enterprise Computing would constitute a collaboration among departments in the College of Business (Department of Logistics, Operations, and Management Information Systems ) and the College of Engineering (Industrial and Manufacturing Systems Engineering; Electrical and Computer Engineering). The program will be administered by the Graduate College.

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### **Analysis:**

Review of New Program Criteria The following is an analysis of the program proposal with respect to the Board's criteria for new program approval.

Program aligns with ISU mission Centrality.  
The proposed program is consistent with the university's mission. The university's mission emphasizes science and technology. A part of the university's mission is to use existing knowledge to address the problems and issues of concern to the state and to the national and global communities. Industry has a major need for graduates with the capabilities this program will develop.

Program supported through reallocation Costs.  
The program will be funded by reallocated resources. The university reports that courses required by this program are already delivered by the participating departments and there is sufficient capacity to accommodate the number of students expected to be enrolled in the new program.

Enterprise computing skills expected to be in high demand Need/Demand.  
According to the U.S. Department of Labor, Bureau of Labor Statistics (Occupational Outlook Handbook 2004-2005), as firms continue to install sophisticated computer networks, set up Internet and intranet sites, and engage in electronic commerce, rapid growth will occur among specialists such as enterprise computing specialists. Also, according to this source, the broad industry of computer systems design and related services remains one of the 10 fastest growing industries in the nation and employment in this industry is expected to grow 55 percent by the year 2012.

The program would integrate various skills. Quality.  
The work of professionals in enterprise computing demands the effective integration of knowledge and skills from a variety of domains. The proposed program would be an interdepartmental effort among three departments and will support instruction, research, and practice in these areas.

There are no similar programs in Iowa.

Duplication.

There are a number of programs in the broad field of computer information science at both Regent universities and independent institutions in the state. However the program's emphasis on the unique demands of enterprise computing fills a gap in available offerings in the state. There are no other undergraduate degree programs in Enterprise Computing in Iowa. The institution reports that the program will be the first of its kind at a land grant university.

Program is consistent with institutional strategic planning

Link to Institutional Strategic Planning.

This program is consistent with the College of Engineering and College of Business strategic plans and the university's strategic plan to support programs in information technology. A goal of this program is to increase graduate enrollment with a focus on U.S. students. This program will produce professionals that can help Iowa industries with their information technology needs.

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Post-Audit Review

As called for in the Board of Regents' Policy Manual, § 6.07, the University is reminded that a post-audit report will be due on these programs in June, 2009.

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New Program Review Questions

The University's responses to the Board of Regents New Program Review Questions for each program proposal are attached to this memorandum.

Attachment A: Bachelor of Science and Master of Science in Diet and Exercise

Attachment B: Master of Science Degree in Enterprise Computing

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## ATTACHMENT A

### Regents Program Review Questions for New Majors

Name of the degree: BS and MS

Name of the major: Diet and Exercise

#### 1. Need

- a. How will this proposed program further the educational and curriculum needs of the students in this discipline?

The objective of this proposal is to establish an education and training program in diet and exercise science. A BS and MS program in *Diet and Exercise* will be established to offer students advanced study in the theory and application of nutrition and exercise science. This degree program involves admission to the program during the junior year of academic study, followed by concurrent enrollment in the BS and MS program with the BS and MS degrees jointly awarded at the completion of the program. This program is unique and truly an interdisciplinary program in that knowledge, skill, and competency cannot be achieved in either content area [Food Science and Human Nutrition (FSHN) or Health and Human Performance (HHP)] unless the complete program, including both the BS and MS degree, is completed in its entirety. This program will serve as an innovative model for other programs at ISU pursuing a truly interdisciplinary paradigm.

- This program allows students in the dietetics and exercise science programs to:

1. pursue dual interests concurrently, which reinforces the learning and understanding of how the disciplines/topics are inter-related.
2. acquire an advanced degree with expertise in two different, yet complementary, disciplines.
3. potentially complete an advanced degree in a shorter time frame (5 years).
4. potentially complete an advanced degree with fewer financial liabilities due to the shorter time frame.
5. acquire skills and competency in both dietetics and exercise science, which enhances professional marketability.

- b. How does it further the educational and curriculum needs of other units in the college or university?

NA

#### 2. Duplication and Collaboration

- a. What programs in this field of study are available in other colleges and universities in Iowa?

- University of Iowa (UI)- Master in Public Health (MPH) degree with a Nutrition and Exercise Focus
- University of Northern Iowa (UNI) – Master's degree (MA) in Health Promotion/Fitness Management Emphasis

- b. With what representatives of these programs has there been consultation in developing this proposal? Provide a summary of the responses of each institution consulted.

Both the UI and UNI have been consulted in the development of this proposal. Both universities have identified that this program provides an educational opportunity for students that is not currently provided at their institutions. Both the UI and UNI have provided letters of support for this program.

- c. In what ways is this proposed program similar to those mentioned in 2a? In what ways is it different or does it have a different emphasis?

- The MPH offered by the UI has a goal of understanding nutrition and exercise applied to clinical research studies or community health promotion. The curriculum includes a core of public health and epidemiology courses with limited coursework in applied nutrition and exercise physiology. The UI does not offer a nutrition or dietetics degree, thus there are limited course offerings in nutrition. The program is designed for practitioners who want to do translational research involving exercise and diet in the public health setting. The MPH program requires 42 credit hours for the advanced degree. The program does not provide the academic preparation for certification as a Registered Dietitian nor American College of Sports Medicine (ACSM) certification.
- The MA degree offered by the UNI has a goal of education/awareness in health promotion. The curriculum consists of 30-33 credit hours. This program does not offer nutrition or exercise physiology coursework at the graduate level. Since UNI no longer offers a nutrition or dietetics degree there are limited course offerings in nutrition. The program does not provide the academic preparation for certification as a Registered Dietitian nor ACSM certification.
- In contrast, the program proposed (BS and MS) at ISU has a goal of preparing students for applied practice opportunities such as cardiac rehabilitation programs, health clubs, wellness centers, public and private clinics, community health programming, preventive medicine programs or related programs. The curriculum includes substantial coursework in theory and application of nutrition and exercise physiology. The combined BS and MS degree requires 158 credit hours of which 38 are at the graduate level. In addition, the proposed BS and MS program provides academic requirements to become a Registered Dietitian and ACSM certification as a Health Fitness Instructor.

- d. How does the proposed program supplement the current programs available?

Currently, there are no programs within the state that combine the disciplines of dietetics and exercise science in an applied practice manner. The magnitude of chronic disease in society, which is related to diet and exercise, necessitates the preparation of future professionals with expertise in both areas. This proposal is extremely efficient in merging the available resources in FSHN and HHP to create an opportunity for students to study in two distinctly different, yet intricately inter-related areas of discipline. It also efficient from the student side, in that it may be possible to complete both program (concluding in the award of a BS and MS) in 5 years, depending on the thesis project chosen by the student.

- e. Has the possibility of some kind of interinstitutional program or other cooperative effort been explored? What are the results of this study?

The UI and ISU have discussed a collaborative effort to offer a MPH with a Nutrition Focus. With this program the UI would provide the expertise in nutrition epidemiology, while ISU would provide expertise in nutrition science. This proposal is still being explored utilizing the ICN for the delivery of collaborative coursework. This coursework

could also be used in the proposed BS and MS program as an elective if the student desired.

- f. Please list the Iowa institutions in which articulation agreements are being developed for the proposed program.

NA

- g. Please provide the Classification of Instructional Program (CIP) code for the proposed program.

31.0505 and 51.2702

3. Please estimate the enrollment in this program for the next five years as follows:\*

- a. Undergraduate

Majors	<u>5</u>	<u>10</u>	<u>15</u>	<u>15</u>	<u>15</u>
Non-Majors	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

- b. Graduate

Majors	<u>0</u>	<u>5</u>	<u>15</u>	<u>30</u>	<u>30</u>
Non-Majors	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

\*Enrollment estimates are maximum enrollment anticipated.

1. On what basis were these estimates made?

Maximum enrollment in the program will be limited to 15 annually. Students will be classified as undergraduate students after admission to the program for the remainder of their junior year, and if they choose, during the summer session following their junior year. Students will be classified as graduate students in the fall of their senior year (4<sup>th</sup> year) to coincide with the commencement of their graduate coursework. Thus, there will be no more than fifteen undergraduate students annually since they become graduate students the academic year after acceptance into the program. It is anticipated that the graduate students will complete their studies in 2 years, thus the total number of graduate students after the fourth year of the program will average 30 per year.

2. What are the anticipated sources of these students?

- Students currently enrolled in dietetics or exercise science at ISU
- Incoming freshmen
- Transfer students

4. Please provide any available data or information on employment opportunities available to graduates of this program in Iowa and nationally.

Graduates of this program are unique in that they are eligible for: 1. accreditation as Health Fitness Instructor (ACSM) and; 2. a dietetic internship to become a Registered Dietitian (ADA). The Bureau of Labor Statistics projects that employment of dietitians and nutritionists will grow 15.2% between 2000 and 2010 as a result of increased emphasis on disease prevention through dietary habits; employment of fitness workers will grow 21-35% between

during this same time. Employers of RDs were surveyed informally regarding employment opportunities for this major:

- 73% reported they would be very or somewhat interested in hiring someone with this expertise
- 80% reported that the combined expertise would be very or somewhat important to professional practice

Note: Survey did not include employers in exercise/fitness. Respondents n=15.

5. Are there accreditation standards for this program?

1. What is the accreditation organization?

American Dietetics Association (ADA): Students are eligible to apply for a dietetic internship and then sit for the national registration exam to become a Registered Dietitian.

In addition to meeting ADA competency standards, having completed a bachelor's degree in a health-related field graduates of the program will be eligible to take the written/practical exam for certification as a Health Fitness Instructor offered by the American College of Sports Medicine.

2. What accreditation timetable is anticipated?

This program meets the didactic requirements for dietetics education, thus will be accredited by the American Dietetics Association. Accreditation is granted for a 10-year period including a 5-year review and 10-year site visit. A copy of the *Knowledge, Skills, and Competencies for Entry-Level Dietitian Education Programs* as it appears in the Accreditation Manual of the American Dietetics Association appears on pages 8, 9, and 10.

6. Does the proposed program meet minimal national standards for the program, e.g., Council of Graduate Schools or other such bodies?

This program meets the Council of Graduate Schools standards.

7. Please report any reactions of the Iowa Coordinating Council for Post-High School Education. List date that the program information was submitted to the Council.

Submitted on June 11, 2004; no concerns expressed.

7. How does this program relate to the college's/university's strategic plan?

The three goals of the ISU strategic plan are to enhance learning, promote discovery and innovation, and engage key constituents through synergistic sharing and partnership of knowledge. Common to all three of the goals is to encourage and support interdisciplinary collaboration and to improve student learning by curriculum development and instructional innovation. This proposal seeks to contribute to these goals by establishing a curricular collaboration between FSHN and HHP and to link the undergraduate experience with the graduate program. This will offer students' opportunities to explore the interactions between diet and exercise in helping humans maintain healthful lives.

The College of Family and Consumer Sciences mission is to: 1. value **creativity, collaboration**, nurturance, and professionalism; 2. improve the quality of life for all by **linking science with practice**; and 3. **prepare professionals** to provide leadership in addressing issue of importance to families and consumers by means of education, research, and outreach programs. This proposal has direct linkage to all 3 statements.

#### **Creative**

1. It proposes a new structure/option for the BS/MS opportunities at ISU.
2. It is potentially the only program in the nation, which combines the study of nutrition and exercise into one program and results in an advanced degree.

#### **Collaborative**

It epitomizes collaboration as it merges two undergraduate degree options between two departments and three colleges.

#### **Linking Science with Practice**

Chronic diseases (cardiovascular disease, cancer, type 2 diabetes, overweight) have etiological factors related to both nutrition and physical activity. Thus, it makes sense to provide the opportunity for students to study and apply the intricate interaction between the two subject areas.

#### **Preparing Professionals**

To effectively address the majority of health problems in today's society, future professionals must be develop skills and competencies, which address both nutrition and exercise.

The Department of FSHN has identified the following goals in the 2000-2005 strategic plan:

1. Provide an environment to generate and transmit knowledge in FSHN.
2. Strengthen undergraduate education, programs, and services in FSHN.
3. Strengthen graduate education, professional and research programs in FSHN.
4. Provide FSHN information to the public through education, assist in the transfer of technology to Iowa's food industry and assist economic development of Iowa's food industry through education, outreach and services.
5. Establish leadership in international programs and develop lifelong departmental relationships in research and education.

Under Goal #2, one strategy is to recruit high-ability, well-prepared undergraduate students. The innovative nature of our proposal and the selectivity are likely to attract only the very best students to the program. The initial survey of student interest was extremely positive towards the proposed degree option. Another strategy under Goal #2 is to enhance student learning through improved courses and curricula. The interdisciplinary nature of this proposal demonstrates commitment towards improved curricula, which equips the students with knowledge and skills to address significant societal problems. Goal #3 has a strategy of developing strategically important graduate programs. This proposal is strategically important related to its interdisciplinary nature, novelty, and development of professionals that are in much demand in the marketplace. A specific implementation strategy outlined in the strategic plan is to 'develop interdisciplinary graduate programs to provide training in areas not easily supported by individual departments.' The proposal also addresses one of the core areas of the College of Agriculture's mission statement, excellence in preparing undergraduate and graduate students for careers or further education.

The College of Education strategic plan promises to create programs that achieve national and international distinction, attracting outstanding students. The innovative nature of our proposal and the selectivity are likely to attract only the very best students to the program. Another strategy noted in the COE strategic plan is to

create research opportunities for undergraduates. The present proposal will involve students in both graduate course work and research starting during their senior year and continuing until the combined degree is completed. An additional objective of the COE is to increase collaborative planning in the implementation of research programs. Because students in the proposed curriculum will be expected to engage in research that combines the areas of diet and exercise, we feel this program will foster increased collaboration between the faculty of our two departments to contribute to meeting some of the dietary and activity challenges our population faces.

The Department of HHP promotes health and well-being through discovery, learning, and engagement in the study of physical activity. Specific to the mission in discovery, the department attempts to create and disseminate applied knowledge about physical activity and its relationship to health. Abundant research in both basic sciences and in epidemiological approaches is available to confirm the important link between diet and exercise in preventing and treating many so-called lifestyle diseases such as cardiovascular disease, diabetes, and obesity. The present proposal contributes to expanding the role ISU will play in training the next generation of scientists and practitioners who will help discover, develop, and implement nutritional and physical activity programs and knowledge to improve the lives of people.

## Additional Resource Needs

Either question one or question two requires a “yes” answer. In addition to a “yes” response to one of the first two questions, question three and question four should be answered. If applicable, question five should be answered.

1. Will the program require new resources? Yes \_\_\_ No X  
If “yes,” what is the plan to obtain new resources?
2. Will the program require reallocated resources? Yes X No \_\_\_  
If “yes,” what is the university’s reallocation plan to fund this program?

The Departments of Food Science and Human Nutrition and Health and Human Performance have discussed the reallocation of existing facility and faculty resources. Both departments have sufficient existing facilities to support the proposed program. Faculty participation with the program’s Admission Committee and graduate student supervision will be considered by the department in the Promotion and Tenure process and during the assignment of departmental responsibilities.

3. At what level of enrollment will additional resources be required for the program?

Enrollment in this program has been capped at 15 annually to prevent over-extending the existing facility and faculty resources. The overall number of MS students is not likely to increase because only a specific number of masters’ students are admitted based on how many faculty are willing to take and advise. It is expected that these students will be included in the existing pool of graduate students, which is approximately 45 in the Department of FSHN and 30 in the Department of HHP. In addition, it will not influence the number of MS students to which TAs/RAs are given; students accepted into this program are eligible to compete for the graduate assistantships available to all MS students in their home department.

4. Estimate the total costs (or *incremental increases in expenditures*) that may be necessary as a result of the new program for the next three years.

	First Year	Second Year	Third Year
a. Faculty	\$15,000	\$30,000	\$60,000
b. Graduate Assistants	0	\$45,000	\$90,000
c. General Expense	\$5,000	\$10,000	\$15,000
d. Equipment	0	0	0
e. Library Resources	0	0	0
f. New Space Needs (estimated amt. & cost of new and/or remodeled space)	0	0	0
g. Computer use	0	0	0
h. Other resources	0	0	0
TOTAL(S)	\$20,000	\$85,000	\$165,000

Additional faculty will not be required for administration of this program; however, reallocation of existing faculty resources will be required (note #2 above). Reallocation of faculty time at 5% FTE is related to the supervision of the graduate theses. Year 1 estimates involvement of 5 graduate faculty, Year 2 estimates 10 graduate faculty, and Year 3 estimates 20 graduate faculty. Graduate assistants will not be required for the administration of the program. While graduate assistantships are not expected nor guaranteed for these students, they are eligible to accept a graduate assistantship. These assistantships would likely be funded by reallocation and extramural grant support. Graduate assistant estimate is based on \$15,000 annually for 0 students in year 1, 3 students in year 2, and 6 students in year 3. General expenses are related to program administration. Space, library, and computer resources currently available for students will be utilized for the program.

5. For programs planning to use external grants, what would be the effect of the grant termination?

External grants are not being used to support this program. External grants may be used to provide graduate assistantships for these students; however, the program will not be marketed/promoted as providing graduate assistantships. Graduate assistantships are not expected nor guaranteed for these students; however, they are eligible to accept a graduate assistantship.

## ATTACHMENT B

### Regents Program Review Questions (Majors)

#### Master of Science Degree, Major in Enterprise Computing

1. Need

- a. How will this proposed program further the educational and curriculum needs of the students in this discipline?

This program will provide students with a new field of advanced study in enterprise computing. Students are currently ill prepared for careers in developing enterprise-wide applications under current curricula available to the students. At the same time, industry has a major need for graduates with these capabilities.

- b. How does it further the educational and curriculum needs of other units in the college or university?

Course work offered through this program provides students from other graduate programs with outside electives in new subject areas. It is expected that students from Industrial Engineering, Management Information Systems, Computer Engineering, and Computer Science would be most likely to benefit from the program.

5. Duplication and Collaboration

- a. What programs in this field of study are available in other colleges and universities in Iowa? (Identification of other programs available in this field at other institutions should be made within a broad definitional framework. For example, such identification should not be limited to programs bearing the same title, the same degree designation, having the same curriculum emphasis, or purporting to meet exactly the same needs as the proposed program.)

There are no similar programs at other colleges and universities in Iowa. The most closely related study areas are Management Information Systems, Computer Science, and Computer Engineering at Iowa State University and Computer Science at the University of Iowa.

- b. With what representatives of these programs has there been consultation in developing this proposal? Provide a summary of the responses of each institution consulted. (The complete text of responses should be included.)

The Industrial and Manufacturing Systems Engineering, Management Information Systems, and Computer Engineering at Iowa State University support the establishment of this program.

- c. In what ways is this proposed program similar to those mentioned in 2a? In what ways is it different or does it have a different emphasis? (In describing program similarities and differences, consider such factors as curriculum, prospective student groups to be served, and career or other types of goals to be emphasized.)

This program emphasizes the engineering and systems aspects of large-scale enterprise-wide systems. Information technology is a major element of this program due to its pervasive use in modern enterprises. In addition, the program provides

students with engineering principles, methods, and problem solving techniques for enterprise processes.

- h. How does the proposed program supplement the current programs available? (In some instances, this question should go beyond how the program will supplement others within the state. If the justification for the program involves special regional or national needs, a description of existing programs within the region or the nation and the relation of the proposed program to these should be provided.)

Our program can provide a systems perspective for the related programs as well as showing the relationship of information technology to other enterprise processes.

- i. Has the possibility of some kind of interinstitutional program or other cooperative effort been explored? What are the results of this study? (Consider not only the possibility of a formally established interinstitutional program, but also how special resources at other institutions might be used on a cooperative basis in implementing the proposed program solely at this institution.)

No cooperative effort has been explored.

- j. Please list the Iowa institutions in which articulation agreements are being developed for the proposed program. (NOTE: This applies only to community college degree programs that may transfer students to this program.)

There are no agreements.

- k. Please provide the Classification of Instructional Program (CIP) code for the proposed program. (The code may be obtained from the statistics area of the Office of the Registrar (4-4150) or look at the following web site: [http://www.ncsu.edu/provost/academic\\_affairs/cc/cip\\_proj/cip\\_manu.htm](http://www.ncsu.edu/provost/academic_affairs/cc/cip_proj/cip_manu.htm))

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3. Please estimate the enrollment in this program for the next five years as follows:

- a. Undergraduate
- |            |       |       |       |       |       |
|------------|-------|-------|-------|-------|-------|
| Majors     | _____ | _____ | _____ | _____ | _____ |
| Non-Majors | _____ | _____ | _____ | _____ | _____ |
- b. Graduate
- |            |           |           |           |           |           |
|------------|-----------|-----------|-----------|-----------|-----------|
| Majors     | <u>10</u> | <u>20</u> | <u>30</u> | <u>30</u> | <u>30</u> |
| Non-Majors | <u>3</u>  | <u>3</u>  | <u>5</u>  | <u>5</u>  | <u>5</u>  |

3. On what basis were these estimates made?

Based on current enrollment in our enterprise computing courses we would conservatively expect 10-15 students entering this program initially on an annual basis.

4. What are the anticipated sources of these students?

(For example, persons currently enrolled in other programs within the institution; persons currently attending other institutions, in state or out of state; persons not currently enrolled in institutions of higher education.)

Persons currently enrolled in other programs within the institution; persons currently attending other institutions, in-state or out-of-state; persons not currently enrolled in institutions of higher education.

4. Please provide any available data or information on employment opportunities available to graduates of this program in Iowa and nationally. (Such information is available from U.S. government labor sources as well as many professional associations.)

It is projected that the need for systems analysts (a typical information technology career) will increase 92% by year 2005 (Source: *America's New Deficit: The Shortage of Information Technology Workers*, Department of Commerce).

8. Are there accreditation standards for this program?

3. What is the accreditation organization?

N/A

4. What accreditation timetable is anticipated?

N/A

6. Does the proposed program meet minimal national standards for the program, e.g., Council of Graduate Schools or other such bodies?

This program meets the minimum standards of the Council of Graduate Schools.

8. Please report any reactions of the Iowa Coordinating Council for Post-High School Education. List date that the program information was submitted to the Council.

Submitted to ICCPHSE on June 11, 2004; no concerns were raised.

9. How does this program relate to the college's/university's strategic plan?

This program is consistent with the College of Engineering and College of Business strategic plans and the university's strategic plan to support programs in information technology. The goal of this program is to increase graduate enrollment with a focus on U.S. students. This program will produce professionals that can help Iowa industries with their information technology needs.

### Additional Resource Needs

Either question one or question two requires a “yes” answer. In addition to a “yes” response to one of the first two questions, question three and question four should be answered. If applicable, question five should be answered.

1. Will the program require new resources?                      Yes \_\_\_                      No X  
 If “yes,” what is the plan to obtain new resources?
2. Will the program require reallocated resources?            Yes X                      No \_\_\_  
 If “yes,” what is the university’s reallocation plan to fund this program?

By using a standing graduate committee described earlier, the workload of serving on graduate committees will be less than individual committees.

As shown in the table below on course capacity, there is sufficient capacity to accommodate the additional students. Courses required by this program are currently being offered by the participating departments. Given the expected number of students in the program, a major reallocation will not be necessary. The Department of Industrial and Manufacturing Systems Engineering will reallocate some of the administrative duties of their support staff to support the program, thus the estimate of salary and fringe benefits for a Graduate Secretary are shown below. The additional 30-40 students could be accommodated with the current system.

6. At what level of enrollment will additional resources be required for the program?

Additional resources would be required if enrollment exceeds 50 students.

7. Estimate the total costs that may be necessary as a result of the new program for the next three years.

	First Year	Second Year	Third Year
a. Faculty	0	0	0
b. Graduate Assistants	0	0	0
c. General Expense	0	0	0
d. Equipment	0	0	0
e. Library Resources	0	0	0
f. New Space Needs (estimated amt. & cost of new and/or remodeled space)	0	0	0
g. Computer use	0	0	0
h. Other resources (Secretary –sal + FB)	7,700	8,100	8,500
TOTAL(S)	0	0	0

The utilization of course capacity is shown in the following table for the past year.

Course	Average No. of Students	Average Class Limit	% Utilization
IE 581	8.5	25.0	34.0
IE 582	13.0	30.0	43.3
IE 583	18.0	25.0	72.0
IE 588	8.0	25.0	32.0
MIS 533	18.5	40.0	46.3
MIS 535	18.0	30.0	60.0
MIS 534	20.0	30.0	66.7
MIS 538	11.5	35.0	32.9
POM 522	9.0	27.5	32.7
MIS 537	17.0	25.0	68.0
MIS 531	18.5	40.0	46.3
CPR E 530	13.5	677.3	2.0
CPR E 485	24.7	25.2	98.1
CPR E 531	23.6	523.0	4.5

Note that the large capacity courses offer a large number of distance education slots so the utilization is artificially low. It can be seen that there should be sufficient capacity in these courses. For the few courses having higher utilization, they can be offered via distance education or the capacity can be slightly increased to accommodate the students in the new program.

Given the current utilization of offered courses, there is sufficient capacity to support the program without additional resources. In addition to the Computer Engineering courses offered as distance education, we will offer the Industrial Engineering (IE) courses through distance education as well. The financial income from distance education through these offerings will help supplement current resources.

5. For programs planning to use external grants, what would be the effect of the grant termination?

N/A

## **Further Information about the Proposal for Master of Science Degree, Major in Enterprise Computing**

### **regarding the sources of program students**

We expect that the majority of these students will be industry practitioners who may have a background in engineering or information systems, but do not have formal education and training that integrates the two areas from a system perspective. As such, it is expected that the majority will be distance education students. This is based on our extensive experience with our distance education courses and the types of students that enroll in these courses.

### **concerning additional resource needs and the re-allocation of resources**

The required courses for the proposed academic program are already being offered at ISU, so no new faculty resources will be needed. It is estimated that a portion (15%) of a current secretarial position will be needed to help with the administration of the program; the salary and fringe benefit cost estimate is \$7,700 in the first year. No new space or equipment needs are envisioned since established laboratories (with client workstations and server stations and development tools for enterprise-wide systems) already exist.