# PROPOSAL SUMMARY AND ROUTING FORM

**Proposal Title:** Medical Informatics Minor

**Initiating Unit or Individual:** Marilyn Skrocki, JD MBA, Barbara L Ciaramitaro Ph.D, Douglas Blakemore Ph.D.

**Contact Person's Name:** Marilyn Skrocki  e-mail: skrockm@ferris.edu  phone: X2280

**Date or Term of Proposal Implementation:**

- [ ] Group I - A – New degree/major or major, redirection of a current offering, or elimination of a degree, major or minor

- [x] Group I - B – New minors or concentrations

- [ ] Group II - A – Minor curriculum clean-up and course changes

- [ ] Group II - B – New Course

- [ ] Group III - Certificates

- [ ] Group IV – Off-Campus Programs

| Group/Individual                  | Signature        | Date    | Vote/Action *
|-----------------------------------|------------------|---------|------------------------
| Program Faculty                   | Marilyn Skrocki  | 3/28/10 | Support
|                                   |                  |         | Support with Concerns   |
|                                   |                  |         | Not Support             |
| Department Faculty                | Marilyn Skrocki  | 3/28/10 | Support
|                                   |                  |         | Support with Concerns   |
|                                   |                  |         | Not Support             |
| Department Head                   |                  | 9/20/10 | Support
|                                   |                  |         | Support with Concerns   |
|                                   |                  |         | Not Support             |
| College Curriculum Committee      |                  | 9/28/10 | Support
|                                   |                  |         | Support with Concerns   |
|                                   |                  |         | Not Support             |
| College Faculty                   | Allen Hanline    | 9/28/10 | Support
|                                   |                  |         | Support with Concerns   |
|                                   |                  |         | Not Support             |
| Dean                              | Allen Hanline    | 9/28/10 | Support
|                                   |                  |         | Support with Concerns   |
|                                   |                  |         | Not Support             |
| University Curriculum Committee   |                  | 10/11/10| Support
|                                   |                  |         | 7-0                     |
|                                   |                  |         | Support with Concerns   |
|                                   |                  |         | Not Support             |
| Senate                            | Andy Hanline     | 11/2/10 | Support
|                                   |                  |         | Support with Concerns   |
|                                   |                  |         | Not Support             |
| Academic Affairs                  | Donald Hanline   | 11/1/10 | Support
|                                   |                  |         | Support with Concerns   |
|                                   |                  |         | Not Support             |

* Support with Concerns or Not Support must include a list of specific concerns. Votes must be shown for faculty groups. Administrators check appropriate action taken.

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**To be completed by Academic Affairs**

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**NOV 2 2010**

**PROVOST**
1. Proposal Summary

Both the College of Business (COB) and the College of Allied Health Sciences (CAHS) agree there is a strong need to prepare students to work with Medical Informatics. Therefore, this proposal is a joint venture between COB and CAHS to provide added opportunity for students to enhance their employment prospects. This joint venture will be located in the College of Allied Health.

CCHS 101 Orientation to Healthcare (3) is essential to understanding the healthcare arena and therefore will be a pre-requisite to acceptance into the minor.

Minor consists of 22 credits with the following courses included;

College of Allied Health Sciences (CAHS)
- MRIS 103 Medical Terminology (4 credits)
- CAHS 300 Healthcare Informatics (3)
- CAHS 498 Medical Informatics Capstone (3)

College of Business (COB)
- STQM 270 Intro to Data Mining (3)
- STQM 342 Data Mining Tools (3)
- ISYS 411 Project Management (3)
- ISIN 302 Business Intelligence in Healthcare (3 credits) New Course developed by COB

The rationale and proposed curricular format is as follows:
- Courses within curriculum would be offered on-line, those that are not currently offered on-line are being transitioned to an on-line format.
- Medical / health informatics requires students to be familiar with computer software, maintaining electronic health records security, and analyzing electronic data to improve healthcare information and health information networks.
- The federal government is already an advocate for increased use of Health Information Technology (HIT). The American Recovery and Reinvestment Act (ARRA) and the HI-TECH provision of the ARRA include various financial incentives ($20 billion) for medical providers who adopt and use HIT.
- Students who earn this minor will be at a unique advantage in the high-demand fields of health / medical informatics. For those who already have a background in IT, health care, or both, earning the minor would allow them to move into one of these high-paying high-tech positions easier.
- Healthcare information technology is the hottest career option for college graduates, according to a new trend study from the University of California. Emerging jobs include healthcare integration engineer, healthcare systems analyst, and technology support specialists. Such positions within technology support will require workers with this skill set.
- According to the Bureau of Labor Statistics (BLS), some of the fastest growth jobs for 2006-2016 are in computer and computing-related positions. The BLS also predicts that professional and service (healthcare) occupations will increase the fastest, and will account for over 50 percent of the total job growth during the next decade.
- According to the Bureau of Labor Statistics, employment in medical and health informatics is expected to increase by 18 percent through the year 2016. That’s faster than the average for all occupations in the United States. One reason the field of medical informatics is expanding at this high rate is the increasing number of medical tests, treatments and procedures evaluated by
health insurance companies, regulators, courts and consumers. As a result, there's an increased demand for electronic record-keeping and the professionals who can lead and manage this effort.

- According to Career Explorer.net, the top ten careers for 201 include Network Systems and Data Communication Analysts (#1), Medical Records and Health Information Technologists (#4), Computer Application Software Engineers (#5), Database Administrators (#8).
- According to HIMSS (Healthcare Information and Management Systems Society) Average salaries from the 2008 HIMSS Compensation Survey Results is $109,329. Positions included in the average include Senior Management, Department Head, Management, Staff, Associate Staff and other with Senior Management average salary at $160,230 and Associate Staff average salary at $73,905.

The joint venture between the COB and the CAHS colleges does not have a similar program provided. It is the belief of faculty within the COB and CAHS that this minor would be very appealing to those students currently enrolled in the following programs:

- Bachelor of Science in Health Information Management
- Bachelor of Science in Health Care Systems Administration
- Bachelor of Science in Information Security Intelligence
- Bachelor of Science in Computer Information Systems
- Bachelor of Science in Nursing
- Bachelor of Science in Medical Laboratory Technology
- Bachelor of Science in Nuclear Medicine Technology

2. Summary of All Course Action Required*

a. Newly Created Courses to FSU:

Prefix   Number   Title

CAHS     498       Medical Informatics Capstone

ISIN     302       Business Intelligence in Health Care

b. Courses to be Deleted From FSU Catalog:

Prefix   Number   Title

c. Existing Course(s) to be Modified:

Prefix   Number   Title

d. Addition of existing FSU courses to program

Prefix   Number   Title

MRIS     103       Medical Terminology

CAHS     300       Healthcare Informatics
e. Removal of existing FSU courses from program
Prefix  Number  Title

STQM   270   Intro to Data Mining
STQM   342   Data Mining Tools
ISYS  411   Project Management
3. Summary of All Consultations

<table>
<thead>
<tr>
<th>Form Sent (B or C)</th>
<th>Date Sent</th>
<th>Responding Dept.</th>
<th>Date Received &amp; by Whom</th>
</tr>
</thead>
<tbody>
<tr>
<td>From B</td>
<td>9-13-2010</td>
<td>CRHA</td>
<td>Greg Zimmerman</td>
</tr>
<tr>
<td>Form B</td>
<td>8-6-2010</td>
<td>Marketing</td>
<td>Mike Cooper</td>
</tr>
<tr>
<td>Form C</td>
<td>9-7-2010</td>
<td>FLITE</td>
<td>A Konieczny IL Monger</td>
</tr>
</tbody>
</table>

4. Will External Accreditation be Sought? (For new programs or certificates only)

_________ Yes  ________X____ No

If yes, name the organization involved with accreditation for this program.

5. Program Checksheets affected by this proposal. N/A

Outcomes Assessment
A direct measurement will be aligned with the CAHS 498 Medical Informatics Capstone course and an indirect measure will include an annual survey of alumni.

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Means of Assessment</th>
<th>Criteria For Success</th>
<th>Type of Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will be able to utilize previously learned information in the development of a solution to an identified need in medical informatics.</td>
<td>Project proposal within the CAHS 498 Capstone.</td>
<td>90% of the students will be able to develop a proposal to address identified need within Medical Informatics</td>
<td>Direct</td>
</tr>
<tr>
<td>Students were able to locate a job that allowed them to utilize their skills obtained through the minor in medical informatics.</td>
<td>Alumni Surveys</td>
<td>90% of alumni will report they were able to find a position utilizing their skills obtained in the minor</td>
<td>Indirect</td>
</tr>
</tbody>
</table>
CURRICULUM CONSULTATION FORM

To be completed by each department affected by the proposed change, new degree, new program, new minor, or new course. Potential duplication of coursework is reason for consultation.

1. This completed form must be forwarded with the proposal to the chair/head of the department to be consulted.

2. The department must respond within 20 calendar days of receipt of this form to insure inclusion in the final proposal. The completed form is returned to the initiator and inserted into the proposal.

   Failure to respond is interpreted as support for the proposal.

3. The Proposing Department must address any concerns raised by the department. This response will be in writing and be included in the proposal following the consultation form.

RE: Proposal Title Minor in Medical Informatics

Initiator(s): Marilyn Skrocki JD MBA, Barbara Ciaramitaro Ph.D, Douglas Blakemore Ph.D

Proposal Contact: Marilyn Skrocki X 2280 Date Sent: 8-6-2010

Department: CHRA Campus Address: VFS 414, College of Allied Health

(Please print)

Responding Department: CLINICAL LAB/RESPIRATORY/HEALTH ADMIN (CRHA)

Chair/Head/Coordinator: D ate Returned: 9/15/10

Based upon department faculty review on 9/13/10, we

☑ Support the above proposal.

☐ Support the above proposal with the modifications and concerns listed below.

☐ Do not support the proposal for the reasons listed below.

Comment regarding the impact this proposal has on scheduling, room assignments, faculty load, and prerequisites for your department. Use additional pages, if necessary.

The COB and CAHS would like to develop a minor in Medical Informatics. Please review the attached Form A that describes the program.
CURRICULUM CONSULTATION FORM

To be completed by each department affected by the proposed change, new degree, new program, new minor, or new course. Potential duplication of coursework is reason for consultation.

1. This completed form must be forwarded with the proposal to the chair/head of the department to be consulted.

2. The department must respond within 20 calendar days of receipt of this form to insure inclusion in the final proposal. The completed form is returned to the initiator and inserted into the proposal.

   Failure to respond is interpreted as support for the proposal.

3. The Proposing Department must address any concerns raised by the department. This response will be in writing and be included in the proposal following the consultation form.

RE: Proposal Title  Minor in Medical Informatics

Initiator(s): Marilyn Skrocki JD MBA, Barbara Ciaramitaro Ph.D, Douglas Blakemore Ph.D

Proposal Contact: Marilyn Skrocki X 2280 Date Sent: 8-6-2010

Department: CHRA Campus Address: VFS 414, College of Allied Health
(Please print)

Responding Department: MIC 6

Chair/Head/Coordinator Date Returned: 8/11/10

Based upon department faculty review on 2/14/10 (date), we

☐ Support the above proposal.
☐ Support the above proposal with the modifications and concerns listed below.
☐ Do not support the proposal for the reasons listed below.

Comment regarding the impact this proposal has on scheduling, room assignments, faculty load, and prerequisites for your department. Use additional pages, if necessary.

We would like to include "Introduction to Data Mining" (STQM 270) into the minor. It has a prerequisite course of STQM 260 with a C- or better. Would you accept the following course as a comparable prerequisite which would meet the STQM 270 prerequisite requirement?

Epidemiology - Statistics (CCHS 315)

• College: College of Allied Health
Department: Clinical Lab-Resp Care-Hlth Ad
Credit Hours: 3
This course has a lecture with 3 hours.

Study of diseases and their distribution among people. Topics include methods of data collection, analysis, presentation and sources of vital statistics. Statistics used in the health sciences are introduced along with application in conducting epidemiological studies. Epidemiology topics include uses and applications, frequency measures, public health surveillance and journal article interpretation. Statistical topics include measures of central tendency, distribution, statistical inference, and tests of statistical significance. Typically Offered Fall, Spring and Summer.
FLITE SERVICES CONSULTATION FORM

To be completed by the liaison librarian and approved by the Dean of FLITE. All returned forms should be included in the proposal. FLITE must respond within 20 calendar days of receipt of this form to insure that the form is included in the final proposal.

FAILURE TO RESPOND IS CONSIDERED AS SUPPORT OF THE CHANGE.

RE: Proposal Title: Medical Informatics Minor

Projected number of students per year affected by proposed change: 40

Initiator(s): Marilyn Skrocki JD MBA, Barbara L. Ciaramitaro Ph.D, Douglas Blakemore Ph.D

Proposal Contact: Marilyn Skrocki Date Sent: 9/2/2010

Department: CAHS Campus Address: VFS 414
(Please print)

Liaison Librarian Signature: [Signature] Date: 9-7-2010
Dean of FLITE Signature: [Signature] Date Returned: 9-7-10

Based upon our review on 9-7-2010 (date), FLITE concludes that:

☑ Library resources to support the proposed curriculum change are currently available.

☐ Additional Library resources are needed but can be obtained from current funds.

☐ Support, but significant additional Library funds/resources are required in the amount of $__________.

☐ Does not support the proposal for reasons listed below.

Comment regarding the impact this proposal will have on library resources, collection development, programs, etc. Use additional pages if necessary.

Health informatics has been a growing area for collection development and combined resources supporting CAHS + COB should be adequate to support this minor.
**Successful completion of CCHS 101 (C or better) is required to be accepted into minor**

<table>
<thead>
<tr>
<th>Course Title prerequisites shown in ( )</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRIS 103 Medical Terminology</td>
<td>4</td>
</tr>
<tr>
<td>CAHS 300 Healthcare Informatics (junior status)</td>
<td>3</td>
</tr>
<tr>
<td>CAHS 498 Medical Informatics Capstone (CCHS 101)</td>
<td>3</td>
</tr>
<tr>
<td>STQM 270 Intro to Data Mining (STQM 260 or CCHS 315)</td>
<td>3</td>
</tr>
<tr>
<td>STQM 342 Data Mining Tools (STQM 270 or permission by instructor)</td>
<td>3</td>
</tr>
<tr>
<td>ISYS 411 Project Management (senior status)</td>
<td>3</td>
</tr>
<tr>
<td>ISIN 302 Business Intelligence in Healthcare</td>
<td>3</td>
</tr>
</tbody>
</table>
NEW COURSE INFORMATION FORM

Course Identification:

Prefix: CAHS  Number: 498  Title: Medical Informatics Capstone

Course Description:
The capstone project is the final course in the medical informatics minor. During the course, the student will utilize data mining tools, business intelligence, and healthcare knowledge to identify a project, prepare a business plan for implementation.

Course Outcomes and Assessment Plan:
The course will prepare students to:
1. Utilize previously learned information in the development of a solution to an identified need
2. Conduct investigations to determine need
3. Make a professional presentation

Student learning in the course will be assessed as follows:

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Method</th>
<th>Criteria for success</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student will be able to conduct investigations to determine need</td>
<td>Needs assessment</td>
<td>90% of the students will be able to determine a need within their specialty area</td>
</tr>
<tr>
<td></td>
<td>Library Research</td>
<td></td>
</tr>
<tr>
<td>Student will be able to utilize previously learned information in the</td>
<td>Project proposal</td>
<td>90% of the students will be able to develop a proposal to address identified need</td>
</tr>
<tr>
<td>development of a solution to an identified need</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student will be able to make a professional presentation</td>
<td>Presentation</td>
<td>90% of the students will be able to make a professional presentation pertaining to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>their project proposal</td>
</tr>
</tbody>
</table>

Course Outline including Time Allocation:
Needs assessment techniques (surveys, interviews, observations); performance of needs assessment -15 hours
Proposal Development – 20 hours
Presentation (development, strategies and implementation)- 10 hours
I. ACTION TO BE TAKEN: CREATE A NEW COURSE

Notes
1. Complete each item in Section I and Section II.
2. If this course is to be used as a prerequisite for other university courses, Form Fs that reflect the prerequisite change must be submitted for those courses as well.

Term Effective (6 digit code only): 201101  Examples: 200801(Spring), 200805(Summer), 200808(Fall)
Note: The first four digits indicate year, the next two digits indicate month in which term begins.

II. PROPOSED FOR NEW COURSE: Complete all sections a through r. See manual for clarification.

a. Course Prefix
   CAHS

b. Number
   498

c. Enter Contact Hours per week in boxes.
   LECTure
   LAB
   INDependent Study – Check (x) ☐
   Practicum:  ☐
   Seminar:  x 3

d. Course Title: Medical Informatics Capstone (Limit to 30 characters/spaces.)

e. College Code: AH  f. Department Code: CRHA

Credit Hours: Check (x) type and enter maximum and minimum hours in boxes.

g. Type:  ☐ Variable  x Fixed h. Minimum Credit Hours 3  i. Maximum Credit Hours 3.

j. May Be Repeated for Added Credit: Check (x) ☐ Yes  x No

k. Levels: Check (x) x Undergraduate □ Graduate □ Professional

l. Grade Method: Check (x) x Normal Grading  □ Credit/No Credit only (Pass/Fail)

m. Does proposed new course replace an equivalent course? Check (x) ☐ Yes  x No

n. Equivalent course: Prefix    Number  See instructions on Replacement courses.

CATALOG DESCRIPTION – Limit to 75 words – PLEASE BE CONCISE.
The capstone project is the final course in the medical informatics minor. During the course, the student will utilize data mining tools, business intelligence, and healthcare knowledge to identify a project, prepare a business plan for implementation

p. Term(s) Offered:  Fall, Spring, Summer  (See instructions for listing.)  q. Max. Section Enrollment: 30

r. Prerequisites/Co-requisites/Restrictions: (If none, leave blank.) Limited to 100 spaces. Departmental permission.

UCC Chair Signature/Date:  +  Academic Affairs Approval Signature/Date:  +  

To be completed by Academic Affairs Office: - Standard & Measures Coding and General Education Code
[ ] Basic Skill (BS) [ ] General Education (GE) [ ] Occupational Education (OC) [ ] G.E. Codes

Office of the Registrar use ONLY

Date Rec'd:    Date Completed:    Entered: SCACRSE SCADTEL SCARRES SCAPREQ
NEW COURSE INFORMATION FORM

Course Identification:

Prefix: ISIN  Number 302  Title Business Intelligence in Health Care

Course Description:

The course will provide best practices on the use of Business Intelligence methodology, processes and technologies in the health care domain. We will examine the history of business intelligence and its technology and process components. We will discuss and utilize Business Intelligence analysis tools such as data mining and performance management. This course will focus on how business intelligence can assist health care organization in achieving improved quality of care and demonstrate evidence based medicine.

Course Outcomes and Assessment Plan:

- **Outcome**: Understand the history and purpose of Business Intelligence
  - **Assessment**: Individual assignments, assessments and discussion questions
- **Outcome**: Examine the Business Intelligence components: architecture, databases, data warehouses, performance management, and reporting & querying.
  - **Assessment**: Individual assignments, group work, assessments and discussion questions
- **Outcome**: Assess the use of data mining and analytics in Health Care environments
  - **Assessment**: Individual assignments, group work, assessments and discussion questions
- **Outcome**: Evaluate the use of Business Intelligence in each of the 7 stages of EMR (Electronic Medical Records) adoption.
  - **Assessment**: Individual assignments, group work, assessments and discussion questions
- **Outcome**: Assess how Business Intelligence processes and technologies can assist in achieving higher levels of “quality of care” in health care organizations
  - **Assessment**: Individual assignments, group work, assessments and discussion questions
- **Outcome**: Assess how Business Intelligence processes and technologies can assist in achieving demonstrating “evidence based medicine” in health care organizations
  - **Assessment**: Individual assignments, group work, assessments and discussion questions
- **Outcome**: Explore the major issues in implementing Business Intelligence in health care organizations
  - **Assessment**: Individual assignments, group work, assessments and discussion questions
- **Outcome**: Explore the use of Business Intelligence technology tools in health care.
  - **Assessment**: Hands on exercises in Business Analytics, Data Visualization and Data Mining technologies.
Course Outline including Time Allocation:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of Business Intelligence</td>
<td>10% (5.0 hours)</td>
</tr>
<tr>
<td>Business Intelligence Components</td>
<td>15% (6.5 hours)</td>
</tr>
<tr>
<td>Business Intelligence tools (e.g. data mining)</td>
<td>10% (5.0 hours)</td>
</tr>
<tr>
<td>Using Business Intelligence in 7 stages of EMR adoption</td>
<td>10% (5.0 hours)</td>
</tr>
<tr>
<td>Using Business Intelligence to improve quality of care</td>
<td>15% (7.5 hours)</td>
</tr>
<tr>
<td>Using Business Intelligence to demonstrate evidence based medicine</td>
<td>15% (7.5 hours)</td>
</tr>
<tr>
<td>Implementation Issues</td>
<td>10% (5.0 hours)</td>
</tr>
<tr>
<td>Exploration of Business Intelligence tools</td>
<td>15% (6.5 hours)</td>
</tr>
<tr>
<td>Total</td>
<td>100% (48 hours)</td>
</tr>
</tbody>
</table>
CREATE NEW COURSE
Course Data Entry Form

FORM F
Create New Course
Rev. 07/23/07

I. ACTION TO BE TAKEN: CREATE A NEW COURSE
Notes
1. Complete each item in Section I and Section II.
2. If this course is to be used as a prerequisite for other university courses, Form Fs
   that reflect the prerequisite change must be submitted for those courses as well.

Term Effective (6 digit code only): 201101 Examples: 200801(Spring),
200805(Summer), 200808(Fall)
Note: The first four digits indicate year, the next two digits indicate month in
which term begins.

II. PROPOSED FOR NEW COURSE: Complete all sections a through r, See manual
for clarification.

  a. Course Prefix [ISIN]
  Check (x) □
  b. Number 302
  c. Enter Contact Hours per week in boxes.
     Lecture 3 LAB □ INDependent Study –
     Practicum: □ Seminar: □
  d. Course Title: Business Intelligence in Health Care (Limit to 30
     characters/spaces.)
  e. College Code: BU f. Department Code: AFIS
  Credit Hours: Check (x) type and enter maximum and minimum hours in boxes.
  g. Type: □ Variable □ Fixed h. Minimum Credit Hours 3 i. Maximum Credit
     Hours 3
  j. May Be Repeated for Added Credit: Check (x) □ Yes □ No
  k. Levels: Check (x) □ Undergraduate □ Graduate □ Professional
  l. Grade Method: Check (x) □ Normal Grading □ Credit/No Credit only
     (Pass/Fail)
  m. Does proposed new course replace an equivalent course? Check (x) □ Yes
     □ No
  n. Equivalent course: Prefix □ Number □ See instructions on
     Replacement courses.
  o. CATALOG DESCRIPTION – Limit to 75 words – PLEASE BE CONCISE.
The course will provide best practices on the use of Business Intelligence methodology, processes and technologies in the health care domain. We will examine the history of business intelligence and its technology and process components. We will discuss and utilize Business Intelligence analysis tools such as data mining and performance management. This course will focus on how business intelligence can assist health care organization in achieving improved quality of care and demonstrate evidence based medicine.

p. Term(s) Offered: Spring/Fall (See instructions for listing.) q. Max. Section Enrollment: 25

r. Prerequisites/Co-requisites/Restrictions: (If none, leave blank.) Limited to 100 spaces. None.