# PROGRAM APPROVAL PROCESS

**(Revised January 28, 2015)**

**Highlights of the Program Approval Process:**

* The Regent universities shall submit an annual program planning list to the Board Office in the spring of each year, which includes the name and educational level of proposed programs that have already undergone an initial institutional review, are currently undergoing an in-depth institutional review, and are likely to be submitted for program approval by the Board of Regents within the year. The proposed program must reside on the program planning list for at least six months prior to submitting a program proposal to allow sufficient time for discussion within the three Regent universities.
* The Board Office and the Council of Provosts shall review the annual program planning list at each Council of Provosts meeting.
* During the year, the universities shall complete their in-depth review of the proposed programs and submit their proposals to the Board Office using a program approval format developed by the Board Office (Form A). The form incorporates the key characteristics of a proposed program critical for Board decision-making – immediate and long-term need/demand for the program, cost to implement and operate the program, link to the institution’s and Board’s strategic plans, and potential for unnecessary duplication. Workforce data must include recent projections.
* Letters of support must be included with the program proposal. The staff member requesting the letters of support from the other two universities must send a copy of the request to the provosts at the other universities.
* A review by the Iowa Coordinating Council for Post-High School Education (ICCPHSE) shall also occur prior to being submitted for Board approval. A program with unresolved concerns by the ICCPHSE should be so noted.
* The program proposals shall be reviewed in-depth by the Council of Provosts and the Board Office.
* With the recommendation for approval by the Board Office and the Council of Provosts, the program proposal shall be submitted to the Board of Regents Education and Student Affairs Committee and Board of Regents for discussion and action.
* Substantial expenditures for the proposed program or advertising/marketing of the proposed program shall not occur until after the program is approved by the Board of Regents. This means that the institutions shall not hire any new faculty, secure facilities, develop curriculum, or advertise the program until it has been approved by the Board of Regents.

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# FORM A

**Board of Regents, State of Iowa**

**REQUEST TO IMPLEMENT A NEW BACCALAUREATE, MASTERS, DOCTORAL, OR FIRST PROFESSIONAL DEGREE PROGRAM**

**January 28, 2015**

Editing color coding:

Yellow: Items to be completed by Provost Office

Gray: Items are draft text to use/edit as appropriate. Please remove highlighting of gray areas once edited.

THE PURPOSE OF ACADEMIC PROGRAM PLANNING: Planning a new academic degree program provides an opportunity for a Regent university to demonstrate need and demand as well as the university’s ability to offer a quality program that is not unnecessarily duplicative of other similar programs offered by colleges and universities in Iowa.

Institution: Iowa State University CIP Discipline Specialty Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CIP Discipline Specialty Number (six digits):\_\_\_\_\_\_\_\_\_\_\_\_

*NOTE: If department has recommendation – please feel free to enter – otherwise, provost office will fill these out*

Level: B M X D FP

Title of Proposed Program: Master of Healthcare Analytics and Operations Degree Abbreviation (e.g., B.S., B.A., M.A., Ph.D.): MHAO

Approximate date to establish degree: Month August Year 2021

*NOTE: If department has recommendation – please feel free to enter – otherwise, provost office will fill these out based on anticipated meeting date when Board would approve the program.*

Contact person: (name, telephone, and e-mail) Jackie Rees Ulmer (515) 294-6232 jrulmer@iastate.edu

College that will administer new program: Ivy College of Business

Please provide the following information (use additional pages as needed). Do not use acronyms without defining them.

1. Describe the proposed new degree program, including the following:
   1. A brief description of the program. If this is currently being offered as a track, provide justification for a standalone program.

The need for better understanding of healthcare operations and how to draw inferences from the massive amounts of data generated from healthcare devices, procedures, and policies, was strong, even before the COVID-19 pandemic. Health care analysts, executives, insurance companies, providers, and policy makers are even more interested in creating more efficient and effective health care delivery systems in light of increased pressures on these systems. Our current masters programs do not sufficiently address these needs, which span from health care supply chain issues, to lean operations, to managing and analyzing the massive amounts of data kept in disparate, but increasingly digital repositories. The most closely related program, the Master of Business Analytics, is a general business program. While instructors use examples from Health care, they also use examples from manufacturing, retail, agriculture, and many other industries. Furthermore, that program is meant to give students a deep-dive into various analytics methodologies and doesn’t provide enough health-care focused required courses as have been proposed from our market research.

We propose a 30 credit masters-level program in Healthcare Analytics and Operations, to be delivered primarily online, to working professional in healthcare domains.

* 1. A statement of academic objectives;

Students graduating from the proposed program will be able to analyze both healthcare operations, supply chains, and data in order to develop and present plans of action leading to better outcomes for various stakeholders in the healthcare industry. Healthcare operations, supply chains, and data possess many unique properties, which require specialized knowledge to optimize managerial outcomes.

Specific learning outcomes include:

1. Students will be able to identify and apply theories, models, frameworks, and practices to healthcare operations, in order to address healthcare management challenges.
2. Students will be able to identify, clean, manipulate, analyze, healthcare data, in order to address healthcare management challenges.
3. Students will be able to identify and apply the appropriate analytics tools to healthcare management data in order to draw and convey appropriate conclusions to healthcare management problems.
4. Students will be able to synthesize healthcare data and information from multiple sources into comprehensive solutions to healthcare management problems.
   1. What the need for the program is and how the need for the program was determined;

The initial need for the program was determined through potential student and firm inquiries through our recruiting and admissions staff. Alumni and friends of the Ivy College who were currently working in the health care industry were surveyed. After sufficient evidence for industry interest was collected, the Ivy College engaged a CyBiz Lab team to conduct further market research in the Midwest US, as well as other regions of the US, to better determine demand.

Our research indicates that this is a unique program which addresses the challenges and issues faced by the US Healthcare industry. This program is the only one of its kind and capitalizes on the strengths of the Ivy College of Business and the specific challenges of healthcare, particularly in the US Midwest.

* 1. The relationship of the proposed new program to the institutional mission and how the program fits into the institution’s and college’s strategic plan;

The Ivy College of Business offers high-quality undergraduate, masters, and doctoral level programs, and has a number of nationally recognized research scholars and a strong research reputation in selected fields, including analytics and supply chain management. The addition of this master’s level Healthcare Analytics and Operations program would make a significant contribution to the College’s strategic goals. In fact, one of the items under Goal 1 of the Ivy College of Business’ 2015-2020 strategic plan calls for “the establishment of new graduate degrees and certificate programs based on industry needs.”

* 1. The relationship of the proposed new program to other existing programs at the institution; describe how the proposed program will enhance other programs at the university. Will the proposed program duplicate existing programs at the university?

There are no other programs similar to this one at Iowa State University. The closest such program is the Master of Business Analytics, which is sufficiently different as described in part a above.

* 1. The relationship of the proposed new program to existing programs at other colleges and universities in Iowa, including how the proposed program is different or has a different emphasis than the existing programs.

The Tippie College of Business at the University of Iowa offers a Graduate Certificate in Healthcare Management. There are no overlapping required courses with this certificate. The University of Northern Iowa does not offer any related programs. Drake University has just launched a Master of Science in Health Informatics and Analytics. While this program has several overlapping courses with our program in data management, analytics, and a required capstone, the proposed ISU program requires additional courses in operations and supply chain management, in order to provide a more holistic overview of the business side of healthcare. We did not identify any other colleges or universities in Iowa with similar programs.

* 1. Special features or conditions that make the institution a desirable, unique, or appropriate place to initiate such a degree program.

ISU’s strengths in statistics, data science, and business analytics, plus its world-renown Supply Chain Management department make ISU and the Ivy College of Business the ideal institution for such a unique program.

* 1. Are the university’s personnel, facilities, and equipment adequate to establish and maintain a high quality program?

The Ivy College has over five years of experience in running the master of business analytics program. Two recent hires in the Information Systems and Business Analytics department bring healthcare analytics and healthcare information systems expertise to the program.

Additionally, the $28 Million dollar expansion to the Gerdin Business Building provides more than adequate facilities for on-campus residency courses.

* 1. How does student demand for the proposed program justify its development?

After conducting initial interviews with healthcare executives and a comprehensive CyBiz Lab study, we feel that industry and student demand more than justifies its development. Students in existing programs have been attracted to cases and examples from the healthcare industry. For example, the Ivy College of Business generated student interest in a supply chain course in Summer 2020 by positioning the course to address healthcare and food supply chain concerns surrounding the COVID-19 health crisis.

1. Describe the state and/or national workforce need and/or demand for graduates of the proposed program currently and in the foreseeable future (provide documentation about the current sources of data used to estimate need and demand).

The industry demand for this program has been stressed to us from key executives at Mercy in Des Moines, Spectrum Health, and a CEO at a major hospital system. They have expressed support for program as being “timely for meeting the needs of today and tomorrow.” Leaders in the healthcare industry can use the new program to provide additional education to strengthen their current workforce or hire student from the program with skills and expertise for a changing operating environment.

According to the [State of Iowa](https://www.iowaworkforcedevelopment.gov/sites/search.iowaworkforcedevelopment.gov/files/documents/2014-2024_OccProjSummary_statewide_102016.pdf), 7 of the top 10 fastest growing fields in Iowa in 2021-2024 are in heathcare, operations, or information systems, which are all key components of the proposed graduate program.

1. List all other public and private institutions of higher education in Iowa currently operating programs similar to the proposed new degree program. (For comparison purposes, use a broad definitional framework, e.g., such identification should not be limited to programs with the same title, the same degree designation, having the same curriculum emphasis, or purporting to meet exactly the same needs as the proposed program.)

See response to 1f above.

If the same or similar program exists at another public or private institution of higher education in Iowa, respond to the following questions:

* 1. Could the other institution reasonably accommodate the need for the new program through expansion? Describe collaboration efforts with other institutions.
  2. With what representatives of these programs has there been consultation in developing the program proposal? Provide a summary of the response of each institution consulted.
  3. Has the possibility of an inter-institutional program or other cooperative effort been explored? What are the results of this study? (Consider not only the possibility of a formally established inter-institutional program, but also how special resources at other institutions might be used on a cooperative basis in implementing the proposed program solely at the requesting institution.)
  4. Do other colleges in Iowa offer programs similar to the proposed program at comparable quality and cost?
  5. Are letters of support included with the program proposal?

Letters of support are included from the Deans of the appropriate colleges at the University of Iowa and the University of Northern Iowa.

1. Estimate the number of majors and non-majors students that are projected to be enrolled in the program during the first seven years of the program.
   1. Undergraduate

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Undergraduate | Yr 1 | Yr 2 | Yr 3 | Yr 4 | Yr 5 | Yr 6 | Yr 7 |
| Majors | N/A |  |  |  |  |  |  |
| Non-Majors | N/A |  |  |  |  |  |  |

* 1. Graduate

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Graduate | Yr 1 | Yr 2 | Yr 3 | Yr 4 | Yr 5 | Yr 6 | Yr 7 |
| Majors | 15 | 35 | 40 | 45 | 50 | 55 | 60 |
| Non-Majors | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

* 1. What are the anticipated sources of these students?

We anticipate that most students will be professionals working in various aspects of healthcare delivery and management. The majority of these students will be from an approximately 250 mile radius of Ames, IA.

1. If there are plans to offer the program away from the campus, briefly describe these plans, including potential sites and possible methods of delivery instruction. Will off-campus delivery require additional **HLC accreditation**?

There are no plans to offer this program away from campus.

1. Has the proposed program been reviewed and approved by the appropriate campus committees and authorities?

The program has been approved by the appropriate College and Faculty Senate Curriculum Committees, the Faculty Senate, the Provost and the President.

1. List date the program proposal was submitted to the Iowa Coordinating Council for Post High School Education (ICCPHSE) and results of listserv review.

Note: will be completed by the Provost Office.

1. Will the proposed program apply for programmatic accreditation? When?

The proposed program will be covered by the existing AACSB accreditation of the Ivy College of Business. The proposed program will be evaluated every five years along with all other degree programs offered by the Ivy College of Business as part of its Continuous Improvement Review.

1. Will articulation agreements be developed for the proposed program? With whom?

No.

1. Will there be opportunities for student internships?

No.

1. Describe the faculty, facilities, and equipment that will be required for the proposed program.

See response to 1h above.

1. From where will the financial resources for the proposed program come (list all that apply, e.g., department reallocation, college reallocation, grants, new to the university)?

Iowa State University utilizes a decentralized financial management model for the development of its annual operating budgets. The Resource Management Model (RMM), is a responsibility-centered and incentive-driven approach to financial planning and management. The model supports departments and colleges in making budgetary decisions that enhance student success (e.g., retention), innovate by meeting market demands from students and employers for degree programs of the future, and discontinue legacy curricula which are either not aligned with industry/employer needs or for which student demand is low. Through the RMM, for graduate and professional students, net tuition revenue is allocated to academic colleges based on a student’s enrollment. Tuition revenue will include both base tuition and applicable differential rates. The proposed degree program will be funded through this existing, proven financial model, and is expected to be fully self-sustaining over time. In addition to the budget model as described, financial resources may also come from internal reallocations made within the college during the program’s startup phase. The level of reallocation will depend, in part, on the numbers of new students attracted to the proposed program, and the number of existing students who choose the proposed program over another program, based on standard and differential tuition rates. The proposed program will not be dependent on grants, contracts, gifts, central university resources, or reallocations between academic colleges.

1. Estimate the total costs/total new costs (incremental increases in expenditures) that will be necessary for the next seven years as a result of the new program. Be as specific as possible.

Estimated new costs for this program include the cost of hiring one new term faculty member (a professor of practice) that will be shared across a future bachelor’s degree program in healthcare management. Otherwise, the departments of Information Systems and Business Analytics (ISBA) and Supply Chain Management (SCM) have the necessary faculty in-place to begin offering the program. Through the budget model described above, tuition revenue associated with student credit hour production will support the cost of teaching classes for this program and any marginal costs for equipment or marketing. This program will not require investments in fixed expenses such as facility renovations, information technology software, or licenses.

1. Describe the marketing plan developed to communicate the new program and recruit students.

The Ivy College of Business Graduate Programs Office has a Director of Recruiting and New Student Engagement and a Recruiter for Working Professional Programs. The Ivy College of Business also has a Graduate Programs Marketing Coordinator. The Ivy College of Business will incorporate this new programs into the overall marketing strategy for graduate working professional student recruitment. The program will be included in print materials, websites, and other marketing strategies to attract students from within the state, from across the country and globally. The program will also be included in the appropriate college and departmental recruiting materials, websites, and outreach programs.

1. Describe the program evaluation plan to determine if the program is meeting the intended objectives, if the expected student enrollment has occurred, funding for the program, and any other components that affect the effective operation of the program.

This program will be incorporated into the university’s normal academic review process. That review process assesses whether the program is achieving it mission, providing high quality academic experiences, and fulfilling the enrollment and success metrics identified for the program. In addition to the academic program review, as a part of the college budgeting process the program will be monitored annually for achievement of enrollment goals.

1. Include any additional information that justifies the development of this program.

**Appendix A**

**Master of Healthcare Analytics and Operations Curriculum**

The proposed Master of Healthcare Analytics and Operations program would be similar to the current Master of Business Analytics program. Both would require 30 credits and be a hybrid program, with the majority of the coursework completed online. This proposed program will require one, in-person, summer intensive course, and a capstone course in the final semester of the program. Both programs are targeted towards working professionals, looking to further and deepen their knowledge into healthcare analytics and operations. The appropriate forms for the Faculty Senate and Iowa Board of Regents will be filled out once the curriculum is further developed.

**Draft Curriculum/Plan of Study**

*Summer 1 – In Person, Iowa State University Central Campus*

MIS 547 Teams, Projects, and Analytics Leadership 3 credits

*Fall 1 – Online*

SCM XXX The Healthcare Supply Chain[[1]](#footnote-2) 3 credits

STAT 526 Applied Statistical Modeling 3 credits

*Spring 1 – Online*

MIS XXX Healthcare Analytics[[2]](#footnote-3) 3 credits

MIS 533 Data Management for Decision Makers 3 credits

*Summer 2 –Online*

SCM XXY Lean Operations in Healthcare[[3]](#footnote-4) 3 credits

*Fall 2 – Online*

MIS XXY [[4]](#footnote-5) Healthcare Data Privacy, Security & Compliance 3 credits

Elective 3 credits

*Spring 2 Online*

Elective 3 credits

MIS XXZ Healthcare Analytics Capstone Course 3 credits

**Total**

**30 credits**

*Sample Electives Offered Online*

FIN/MIS 541 Analytics in Finance 3 credits

MIS 536 Business Analytics Foundations 3 credits

MIS 546 Advanced Business Analytics 3 credits

IE 538 Knowledge Discovery and Data Mining 3 credits

STAT 528 Data Analytics and Visualization 3 credits

STAT 451 Applied Time Series (Forecasting) 3 credits

MIS 548 Applications of Machine Learning in Business 3 credits

MIS 544 Social Media Business Applications 3 credits

SCM 560 Strategic Logistics Management 3 credits

SCM 563 Purchasing and Supply Management 3 credits

SCM 524 Strategic Process Analysis and Improvement 3 credits

SCM 550 ERP Systems in Supply Chain Management 3 credits

MGMT 525 Human Resource Management Analytics 3 credits

1. New course [↑](#footnote-ref-2)
2. New course [↑](#footnote-ref-3)
3. New course [↑](#footnote-ref-4)
4. New course [↑](#footnote-ref-5)