

FORM A
Board of Regents, State of Iowa

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

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**

Departments involved: **Architecture; Civil, Construction and Environmental Engineering; Community and Regional Planning; Finance; Management.**

CIP Discipline Specialty Title:

CIP Discipline Specialty Number (six digits):

Level: B **M** D FP

Title of Proposed Program: **Master of Real Estate Development**

Degree Abbreviation (e.g., Minor, B.S., B.A., M.A.): **MRED**

Approximate date to establish degree: Month **August** Year **2018**

Contact person(s): (name, telephone, and e-mail)

Tracy Turner; 294-7196; turner@iastate.edu

Please provide the following information (use additional pages as needed).

1. Describe the proposed new degree program, including the following.

a. A brief description of the program.

The proposed Master of Real Estate Development (MRED) is an interdisciplinary, professional degree developed by the College of Design and College of Business and offered in a blended format of online and in-person courses. The idea for the MRED arose in response to strong interest expressed by ISU stakeholders and alumni. An ISU taskforce on real estate made up of faculty from the COD and the COB worked closely with ISU alumni and senior management at several real estate investment, services and development firms to create the proposed MRED curriculum and delivery method described herein.

The MRED degree provides students with graduate training in real estate market analysis, business finance, fundamentals of the built environment and urban planning with an emphasis on current trends and innovations. The program will engage with industry to facilitate a novel curriculum, guest speakers and capstone project, and encourage a working relationship between ISU MRED faculty and our alumni in the real estate development and investment industries. The target student is a working professional with 5 to 7 years of work experience in a real estate related field.

The program is a course-work only degree. It is structured to include 33 credit hours of cohort-based learning delivered over 21 months in the form of online and in-person courses. The curriculum includes ten core courses and an elective chosen from either the College of Design or the College of Business. Each course in the curriculum is a 3 credit hour course. Of the ten core courses, three are “Core competency” courses, one of which may be waived at the discretion of the Director of Graduate Education if a student has had previous extensive undergraduate or graduate coursework in that field.¹ Eight courses are online distance courses delivered asynchronously, and three courses are in-person and synchronous, as prescribed below.

Ten required courses and one elective (Total of 33 credit hours):

A. Required Courses			
Course	Title	Type	Credits
ACCT 571	Real estate law	online	3 Cr
CRP 526	Real estate development	online	3 Cr
CRP 527	Sustainable community development	online	3 Cr
CRP 528	Financing historic preservation and revitalizing communities	online	3 Cr
FIN 572	Real estate finance*	online	3 Cr
FIN 576	Real estate market analysis	In-person	3 Cr
MGMT 530	Leadership and conflict resolution	In-person	3 Cr
ARCH XXX	Architecture and sustainable design*	online	3 Cr
C E XXX	Construction basics, building systems and project management*	online	3 Cr
CRP/FIN XXX	MRED Capstone Project	In-person	3 Cr
B. Elective courses (select one)			
Course	Title	Type	Credits
CRP 528	Financing historic preservation and revitalizing communities	online	3 Cr
FIN 575	Real estate securitization and portfolio management	online	3 Cr

* Signifies a core competency.

¹ Only one core competency may be waived, thereby ensuring that all students complete a minimum of 30 credit hours to fulfill the degree program.

See Appendix A for the course listing by college and participating faculty. Appendix B provides the proposed course descriptions.

b. A statement of academic objectives.

The following learning outcomes are expected.

- Understand multiple disciplines as they relate to real estate development: design, market research, finance, construction and project management;
- Acquire practical and theoretical knowledge of finance, design and planning principles;
- Demonstrate an understanding of the price dynamics of global, national and local real estate markets;
- Demonstrate knowledge of current industry trends and innovations in energy and resource efficient development practices;
- Develop competencies for leadership, negotiation and successful communication;
- Develop professional networks with cohort peers and through program-facilitated interactions with industry experts;

c. What the need for the program is and how the need for the program was determined.

Real estate investment and development has become more complex and dynamic, involving sophisticated networks and collaborations, as well as complicated negotiations with public officials in the regulatory and planning process. Firms employ teams of professionals to make investment and development decisions - individuals specialized in such areas as law, finance, architecture, engineering and construction - but the role of developer often requires extensive on-the-job training to acquire the broad-based knowledge needed to advance firms' goals and individuals' careers. In our discussions with industry, we find that while many large firms have mechanisms to facilitate this type of learning, it can be costly and time consuming. Moreover, such in-house training is less available at smaller firms. An alternative is an MBA-type program to broaden this skill set; however, these do not tend to offer courses reflecting the increasingly complex field of real estate development in all of its capacities. Indeed, there are very few professional master programs that tackle the multi-disciplinary aspects of this field.

In 2015/2016, the ISU taskforce assessed market demand/need for this program by conducting online surveys of alumni and real estate firms as well as conducting in-person interviews with the senior management of 13 firms. The online surveys of alumni and firms combined with in-person firm interviews revealed overwhelming enthusiasm for an ISU graduate real estate degree opportunity and a multidisciplinary structure that includes coursework in finance, design, community planning and construction science. Alumni and firms also prefer a 21-month hybrid professional program for working professionals. Several

firms have provided substantial and ongoing guidance on design, content and curriculum details, which the taskforce utilized in preparing this proposal. (See Appendix C for details of the survey responses and participating firms).

Alumni and firm interest is consistent with a recent CNN Money ranking of Real Estate Development Manager as 16th on the CNN list of the “Top 100 careers with big growth, great pay and satisfying work.”

<http://money.cnn.com/gallery/pf/2015/01/27/best-jobs-2015/16.html>

- d. The relationship of the proposed new program to the institutional mission and how the program fits into the institution’s, college’s, and department/program’s strategic plan;

The proposed program will contribute to the educational mission and reputation of Iowa State University. The University Strategic Plan established the goal of increasing the number and elevating the overall quality of graduate and professional students and “provide exceptional undergraduate, graduate, professional, and outreach programs that prepare students and citizens for leadership and success.” The COB Strategic Plan includes the goals of providing “students with skills and experiences needed to succeed in a complex, technology-driven, global society.” One of the goals of the COD Strategic Plan is to: “Educate students to become successful designers, planners, artists and scholars who enhance human experience and improve the natural, social and built environment”. The MRED program will further these goals by preparing students with an advanced set of skills that emphasize the role of technology and global forces in markets, and allow them to further their professional opportunities. The MRED would be supported by existing faculty whose research is nationally recognized. Finally, the COB and COD have the quality of faculty and facilities required to sustain an excellent master degree program.

- e. 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.

The proposed degree program would have synergies with existing master’s programs within the COB, such as the MBA, Master of Business Analytics and Master of Finance (MFIN) programs. There could also be synergies with existing master programs within COD such as the Master in Community and Regional Planning (MCRP), Master of Urban Design (MUD) and Master of Design in Sustainable Environments. Students from these programs would benefit from the expanded set of course offerings at the graduate level. Moreover, ISU offering graduate real estate courses through the MRED may help to increase enrollment in the other COB and COD programs by providing graduate elective courses in real estate. In addition, students enrolled in the Construction Engineering and

Management Master Degree Program in the College of Engineering would benefit from the opportunity to enroll in MRED courses.

- f. 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.

None of the public universities in Iowa offer graduate work in the field of real estate. University of Northern Iowa, College of Business, offers a bachelor of arts in real estate and has a Center for Real Estate Education, which facilitates interactions between the real estate services industry such as sales persons and brokers and UNI real estate majors. UNI does not offer any graduate real estate courses. University of Iowa offers one undergraduate real estate course and has an undergraduate real estate club, but does not offer any degrees opportunities in real estate.

A survey of the private universities in Iowa reveals that none of the private institutions offer graduate courses in real estate. The taskforce reviewed the programs offered at four of the relatively larger private institutions (Drake University, Upper Iowa University, Saint Ambrose University and Buena Vista University) and found limited real estate offerings (two of the institutions offer only a single undergraduate course; the rest offer none).

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

ISU has an excellent reputation with industry in the fields of business, architecture, planning and construction. The MRED will draw on and enhance this reputation. ISU alumni and stakeholders have expressed a strong interest in ISU as a place to receive graduate training in the real estate field. In addition, noted earlier, the program builds on and complements the unique strengths of the University. Moreover, there is no master program in real estate at either the University of Iowa or the University of Northern Iowa. As discussed below, the COB and COD have the necessary faculty background and national reputation to provide an excellent program that will enhance the colleges' educational missions and provide for the educational needs of our next leaders in real estate finance, investment, design and development.

- h. Are the university's personnel, facilities, and equipment adequate to establish and maintain a high quality program?

The majority of the courses offered by this program will be online courses. The COB already has experience in offering a blended program, the Master of Business Analytics, and making use of the excellent infrastructure in place at ISU to offer distance education: (1) distance education classrooms equipped with the

necessary high quality recording technology; (2) technicians with the experience to provide excellent lecture delivery; (3) an experienced support staff.

The COB and COD faculty have expertise in the field of real estate; three faculty members have published in top real estate research journals, have active research agendas and participate in a national and international academic community of real estate researchers. Moreover, these faculty are committed to industry engagement and collaboration to facilitate a state of the art and sought after training in real estate development.

- i. How does student demand for the proposed program justify its development?

As noted above, ISU alumni and firm surveys indicated strong interest in ISU real estate course offerings and a blended degree format (See Appendix C). Examining the national competitive landscape reveals numerous MRED-type residency programs, but only a few hybrid (online with a residency component) professional/executive programs: 3 master degree programs and an MBA with a specialization in real estate. (See Appendix D for details of these programs). Given strong interest and few online programs, an ISU MRED could serve a significant market.

2. 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).

Real estate is a large and fundamental part of the US and state economy. Housing's direct contribution to GDP— housing production plus services produced by the housing stock— account for about one-sixth of total US economic output.

http://www.freddiemac.com/news/pdf/americas_home_forecast.pdf

As mentioned previously, real estate development increasingly involves complex networks between developers, designers and financiers of real estate and negotiations with public officials in the regulatory and planning process. Demand for broad-base knowledge in this environment is expected to be strong as the industry evolves in response to changing technology and the flow of capital across borders into and out of US real estate markets. Moreover, there are few online master programs that tackle the multi-disciplinary aspects of finance, design and real estate development.

3. 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.)

As noted above, in question 1(f), there are no other public or private institutions in Iowa offering graduate courses in the field of real estate.

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

a. Undergraduate

Undergraduate	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Majors							
Non-majors							

b. Graduate

Graduate	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Majors	20	40	45	50	50	50	50
Non-majors							

c. What are the anticipated sources of these students?²

MRED faculty and administrators will actively promote the MRED through “Lunch and Learns,” presentations to advisory groups and other means to recruit prospective professionals from nearby firms. As the program grows in reputation, it is expected it will draw students nationally and internationally.

5. 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.

None.

² We estimate an initial cohort of 20 or more students based on three facts. (1) The CoB recently launched Master of Business Analytics estimated an initial cohort of 20, but had an actual cohort of 47 (followed by incoming cohorts of 35 and 32 in years 2 and 3, respectively). We think the large cohorts in Business Analytics are the results of the attractive blended format, interest by firms, demand for the academic content and successful marketing. We have these same advantages as part of our program, which leads us to believe that we will be able to attract a sizeable number of incoming students. (2) Our survey of roughly 550 alumni reveals a strong interest in pursuing coursework at ISU in real estate development (for example, 27% and 38% of CoB and CoD respondents, respectively, indicated they are very or extremely interested). For more MRED demand analysis, kindly see Appendix C. (3) We have had extensive discussions with industry regarding the design of the program, curriculum content and data for student projects. Based on industry feedback, we estimate an initial cohort of 20 to be a conservative number. Kindly review industry support for the MRED, as demonstrated in the industry letters included in Appendix G.

6. Has the proposed program been reviewed and approved by the appropriate campus committees and authorities? List them:

Consideration and approvals to date:

Voting Body	Votes			Date of Vote
	For	Against	Abstain	
Dept. or Program Committee				
Department of Finance	14	0	0	January 17, 2017
Department of Community and Regional Planning	11	0	0	February 17, 2017
College Curriculum Committee				
College of Business	5	0	0	February 8, 2017
College of Design	7	0	0	March 29, 2017
College Approval Vote				
College of Business	60	3	0	March 29, 2017
College of Design	53	3	0	May 1, 2017

7. List date the program proposal was submitted to the Iowa Coordinating Council for Post High School Education (ICCPHSE) and the results of listserv review. (THIS WILL BE FILLED IN BY THE PROVOST OFFICE.)

8. Will the proposed program apply for accreditation? When?

The program will be covered under the COB accreditation.

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

No.

10. Will there be opportunities for student internships?

No.

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

COB, COD and the University currently have the necessary facilities and equipment. The existing personnel and infrastructure are summarized above.

12. 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)?

The program is projected to be self-sustaining, more than paying for itself through student tuition. The proposed tuition is \$700 per credit hour.

SOURCES	TOTAL AMOUNT
Student tuition (45 students)	\$472,500 per year

13. Estimate the total costs/total new costs (incremental increases each year in expenditures) that will be necessary for the next seven years as a result of the new program:

MRED New program costs	
Year 0	\$15,000 \$15,000 for recruitment and marketing costs including travel for "lunch and learns" \$18,000 \$9,000 stipend for spring & summer before launch for 1/4 time graduate student assistant to assist DOGE
Year 1	3 COB courses, 1 COD course and 1 CCEE course offered to first cohort in the form of one workshop and 4 online courses \$15,000 \$15,000 for recruitment and marketing costs including travel for "lunch and learns" \$27,000 \$9,000 stipend per term (fall, spring and summer) for 1/4 time graduate student assistant to assist DOGE \$45,000 \$45,000 one-time course development stipend paid to faculty (4 online courses and 1 workshop in year 1) o 4 online courses = \$40,000: development fee = \$9,000; course registration fee = \$1,000 o 1 workshop: development fee = \$5,000 \$75,000 Faculty time salary = \$25,000 per course COB @ 3 courses \$50,000 Faculty time salary = \$25,000 per course COD and CCEE @ 2 courses \$34,375 Faculty time benefits at 27.5% of total salary
Year 2	6.5 COB courses, 4.5 COD courses and 1 CCEE course offered; two cohorts; 3 workshops; 9 online courses \$27,000 \$9,000 stipend per term (fall, spring and summer) for 1/4 time graduate student assistant/program administration each year \$60,000 \$60,000 one-time course development stipend paid to faculty (remaining 5 online courses and 2 workshops in year 2) o 5 online courses = \$50,000: development fee = \$9,000; course registration fee = \$1,000 o 2 workshops = \$10,000: development fee = \$5,000 \$162,500 Faculty time salary = \$25,000 per course COB @ 3 courses \$137,500 Faculty time salary = \$25,000 per course COD and CCEE @ 2 courses \$82,500 Faculty time benefits at 27.5% of total salary \$8,190 2% inflation adjustment on salary costs
Year 3+	Year 2 costs minus course development stipends plus 2% inflation adjustment
Estimate the total costs/total new costs <i>*Note the current calculations do not include the cost of the DOGE</i>	
	Total Cost ^a Total New Costs ^b
year 0	\$33,000 \$33,000
year 1	\$246,375 \$213,375
year 2	\$477,690 \$231,315
year 3	\$426,044 \$0
year 4	\$434,565 \$8,521
year 5	\$443,256 \$8,691
year 6	\$452,121 \$8,865
year 7	\$461,164 \$9,042
^a Expected total annual costs associated with the proposed master program including a 2% annual inflation adjustment starting in year 2.	
^b expected incremental cost increase over the previous year (inflation adjustment).	

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

MRED faculty and administrators will promote the MRED. Professionals at local firms will be recruited through “Lunch and Learn” type events. Recruiting overtures will be made to the national and multi-national firms that aided in the development of the MRED proposal. Electronic means will also be used. For example, COB and COD undergraduate alumni will be contacted to announce to launching of the program and invite their participation.

15. 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.

The program will be evaluated according to a number of metrics. Initially, focus will be on application and admission rates, and ensuring adequate enrollment in the program to enable it to be self-sufficient. As the program progresses, focus will be on retention and graduate rates, and the MRED administrator is expected to be in close contact with supporting firms to ensure that curriculum needs are being met and evolving with industry innovations. In addition, a career metric will be developed to document program success through professionals’ career advancement.

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

As noted above, documentation of alumni and firm interest is provided in Appendices C and D.

Appendix E provides an MRED governance document detailing the administration of the MRED program.

Appendix F provides departmental letters of support from the Department of Architecture, the Department of Civil, Construction and Environmental Engineering, and the Department of Management.

Appendix G provides letters of support from the University of Iowa and University of Northern Iowa.

Appendix H provides statements from industry in support of the MRED proposal.

Appendix I provides a description of one possible way that the required contact and non-contact hours can be achieved in largely a one-week intensive course format to fulfill the requirements of a 3 credit hour course.

Supplemental materials

- a. Prerequisites for prospective students
- b. Language requirements
- c. Admission standards

a. Prerequisites for prospective students

Admission to the Master of Real Estate Development Program is based on merit and is competitive. The applicant must have earned an acceptable bachelor's degree from an accredited institution. An undergraduate degree in business or a design related field is helpful, but not required.

b. Language requirements

Proficiency in English is required. Applicants whose first language is not English should provide results of a Test of English as a Foreign Language (TOEFL).

c. Admission standards. The applicant must meet the minimum requirements in the following areas.

Work experience: To be considered for admission, the applicant must have a minimum of two years of professional work experience; preference will be given to applicants with work experience in a real estate related field.

Academic Transcripts: Applicants need to send their official academic transcripts from all institutions in which they have completed any undergraduate and graduate course work. The applicant must have a minimum GPA of 3.0 in both their undergraduate and graduate coursework. The transcripts must be in an envelope sealed by the degree granting institution.

GMAT/GRE: The applicant is not required to submit a GMAT or GRE score. In the event that the applicant has less than two years work experience, the Program Director will consider admission based on an exceptional GMAT or GRE score, in lieu of work experience.

TOEFL: applicants whose first language is not English should provide results of a Test of English as a Foreign Language (TOEFL). A low TOEFL score will severely reduce chances of acceptance.

Three Letters of Recommendation: Applicants need to send with their application three letters of reference from individuals who can comment on their academic potential and/or work experience.

Statement of Purpose: The applicant needs to prepare a formal statement of purpose for seeking the master degree; the statement should address the applicant's qualifications, work experience, career aspirations, and interests. The statement should not exceed one typed page, single-spaced.

Resume: a detailed resume is required to complete the application.

Personal Interview: a campus or telephone interview is encouraged, but not required.

Appendix A. Summary of proposed MRED course offerings by college and a list of faculty who have expressed an interest in teaching in and/or helping to design curriculum for the MRED program.

A1. Proposed MRED course offerings by college.

Three In-person workshops:

- Real estate market analysis – COB
- Leadership and conflict resolution – COB
- Capstone course -- COB/COD

Eight Online courses:

COB	COD	CCEE
Real estate finance	Architecture and sustainable design	Construction basics, building systems and project management
Real estate investments	Real estate development	
Real estate Law	Sustainable community development	
Elective course: Real estate securitization and portfolio management	Elective course: Financing historic preservation and revitalizing communities	

A2. Faculty who have assisted with curriculum development and/or expressed an interest in teaching in the MRED program.

Susan Bradbury, Professor, Community and Regional Planning

Ted Grevstad-Nordbrock, Assistant Professor, Community and Regional Planning

Hua Sun, Assistant Professor, Finance

Tracy Turner, Associate Professor, Finance

Yianni Floros, Associate Professor, Finance.

James Summers, Associate Professor & Dean's Faculty Fellow in Management

Ulrike Passe, Associate Professor, Architecture

Kristen Cetin, Assistant Professor, Civil, Construction & Environmental Engineering

Appendix B. Proposed MRED course descriptions.

B1. The following are the catalog-ready course descriptions for eight of the twelve MRED courses.

ACCT 571: Real Estate Law. (3-0) Cr. 3 Prereq: enrollment in the MRED or instructor permission.³ Fundamentals of real estate finance and development from a legal perspective and in a transactional setting. Topics include land acquisition and finance, choice of entity, tax aspects, management, disposition of real property, and recent legal developments. Legal responsibilities of owners, designers, and contractors are also examined by highlighting typical contractual relationships in place throughout the design and construction process.

CRP 526: Real Estate development. (3-0) Cr. 3 Prereq: enrollment in the MRED or instructor permission. Overview of the real estate development process. Topics include the history of real estate development, roles of planning and market forces in real estate development, and financial management of real estate development. Projects involve analysis of market niches, market penetration rates, lease rates, synergism and tenant mix, and the go/no go decision applied to residential, commercial, and mixed-use development.

CRP 527: Sustainable community development. (3-0) Cr. 3 Prereq: enrollment in the MRED or instructor permission. Introduces the central principles of sustainable community design and its implementation in the residential and commercial real estate development sectors. Topics include current practices and regulatory mandates, with a focus on the importance of private participation in the development of sustainable communities.

CRP 528: Financing Historic Preservation Projects and Revitalizing Communities. (3-0) Cr. 3 Prereq: enrollment in the MRED or instructor permission. Investigation of the financial tools and incentives used to promote the rehabilitation and redevelopment of historic buildings and neighborhoods in cities and towns. Study of broader economic and social impacts on communities. Examinations of completed preservation projects around the United States.⁴

FIN 572: Real Estate Finance (3-0) Cr. 3 Prereq: Fin 501, enrollment in the MRED or instructor permission. Introduction to corporate finance principles and their application to real estate. Topics include real estate capital budgeting, financing mechanisms, securitization and capital market performance.⁵

³ The faculty helping to design the proposed program support this specification of the course prereq. Examples of this manner of stating a prereq can be found in the current ISU course catalog.

⁴ This course is different in concept and focus from ARCH 567 and ARCH 568. We have received clearance for offering CRP 528 from Professor Deborah Hauptmann, Chair, Department of Architecture.

⁵ This description is the revised FIN 572 description for the next catalog.

FIN 575: Real Estate Securitization and Portfolio Management. (3-0) Cr. 3 Prereq: enrollment in the MRED or instructor permission. Mechanics, incentives and importance of securitization in firms' efforts to raise capital with applications to residential and commercial real estate. Design and implementation of portfolio management strategies of private-market real estate investments. Additional topics include devising alpha strategies, approaches to diversification, creating investment plans to achieve different risk profiles and performance measurement and analysis.

FIN 576: Real Estate Market Analysis. (3-0) Cr. 3. Prereq: enrollment in the MRED or instructor permission. Introduction to the structure of real estate markets. Topics include determinants of supply and demand in space and capital markets, house price dynamics and causes and consequences of market cycles. Discussion of likely behavior of U.S. real estate markets and comparisons with markets in other countries.

MGMT 530: Leadership and conflict resolution. (3-0) Cr. 3 Prereq: enrollment in the MRED or instructor permission. Introduction to the theory and practice of leadership and negotiation. Emphasis is on the science of influencing and resolving conflict, and securing an agreement between two or more interdependent parties. Behavior of individuals, groups, and organizations in the context of demanding situations.

B2. The following includes three courses will be offered initially as experimental courses.⁶ These courses are committed to by the respective departments, as indicated by departmental letters of intent to participate, included in Appendix F.

ARCH 556X: Architecture and sustainable design. (3-0) Cr. 3 Prereq: enrollment in the MRED or instructor permission. Introduction to architecture and sustainable design principles for graduate students with little to no knowledge of the architectural profession. Emphasis is placed on conceptual, technical and legal frameworks used during the architectural design and implementation process. Topics may include: fundamental design principles, key movements in architectural history, and the architect's role in the project development process. Case study projects and guest lectures will introduce students to such things as: project management procedures, sequencing and integrated project delivery, and rating systems used to develop environmentally and socially sustainable buildings.

C E XXX: Construction Basics, Building Systems and Project Management. (3-0) Cr. 3 Prereq: enrollment in the MRED or instructor permission. Introduction to building construction, systems, materials and methods, codes and compliance. Application of engineering and management control techniques to construction project development. Review of construction project delivery methods, contract types, and project phases. Additional topics may include site and infrastructure planning, environmental sustainability and low impact development.

FIN/CRP XXX: MRED Capstone Project (3-0) Cr. 3 Prereq: enrollment in the MRED.

⁶ For these courses, faculty expressed a desire to have experience with the newly designed course in a newly designed program, before submitting a finalized description for catalog approval.

Refinement of students' problem-solving, communication and negotiation skills. Students work on an actual case. Teams will apply knowledge acquired in the classroom to some aspect of a current development on-the-ground and in-process project.

Appendix C

Assessment of market demand.

- (i) In-person interviews. The taskforce conducted in-person and conference-call interviews of the senior management of several firms to obtain feedback regarding an ISU graduate degree offering in real estate from industry representatives, including regional and national/multinational companies.

Findings: Senior management expressed strong interest in an ISU graduate real estate degree opportunity and provided substantial guidance on design and content.

- Enthusiasm was expressed for a multidisciplinary degree structure that includes coursework in finance, design, planning and construction science.
- (ii) Online alumni survey. The taskforce conducted an online survey of alumni with the assistance of the CyBIZlab. Goal: determine market demand for an ISU graduate real estate degree and gather information regarding preferred content delivery method and curriculum.
 - Target Group/person:
 - Most recent twenty-five years of COB graduates.
 - Most recent ten years of COD graduates.
 - Findings:
 - Over half the 103 COD respondents majored in architecture and about one third currently work in a real-estate related field.
 - The 461 COB respondents were mostly made up of finance, accounting and management majors and about 20% currently work in a real-estate related field.
 - In response to the question, “Do you have an interest in taking a graduate course in real estate development?”
 - 13% and 27% of COB and COD respondents, respectively, answered “Yes.”
 - 43% and 54% of COB and COD respondents, respectively, answered “Maybe.”
 - 27% and 38% of COB and COD respondents, respectively, indicated they are either extremely or very interested in pursuing coursework in sustainable real estate development.
 - The preferred degree format is overwhelmingly for an online delivery structure.
 - Alumni reported availability of employer financial assistance for professional development courses and graduate studies.
 - 61% and 43% of COB and COD respondents, respectively, indicated that their employers pay a portion of educational expenses.

- 38% and 21% of COB and COD respondents, respectively, reported that their employers pay either more than half or all of the education expenses.
 - Many alumni provided comments that were enthusiastic for an ISU graduate degree opportunity in real estate.
 - Although not directly queried about degree focus, several alumni indicated in written comments that sustainable real estate development would be too narrow of a focus.
- (iii) Online firm survey.
 - Method: conducted online survey of firms with the assistance of the CyBIZlab; Goal: identify the structure and content of a real estate degree that would engage industry in content and hiring from and sending professionals to ISU.
 - Target Group/person: identified 321 firms in real-estate-related businesses with a minimum of ten employees in six major nearby metropolitan areas: Des Moines, Kansas City, the Twin Cities, Chicago, St. Louis, and Omaha.
 - Findings.
 - 8 architectural firms located in Chicago, Des Moines, Kansas City and the Twin Cities provided detailed online survey replies that are consistent with the data collected from in-person firm interviews.
 - The majority of firms preferred a 24-month online professional degree offering with a multidisciplinary coursework approach.

Appendix D.

The competitive landscape includes numerous MRED-type residency programs, but only a few hybrid (online with a residency component) professional programs. These include the following.

- Auburn University Executive Master of Real Estate Development (Colleges of Architecture, Design and Construction, and College of Business).
- Georgetown University Master of Professional Studies in Real Estate (School of Continuing Studies).
- University of Denver Executive Master of Science in Real Estate and the Built Environment (Daniels College of Business).
- Florida State University MBA Online with a real estate specialization (College of Business).

Appendix E. MRED Program Structure.

The structure of the MRED program at Iowa State University is depicted in Figure E1.

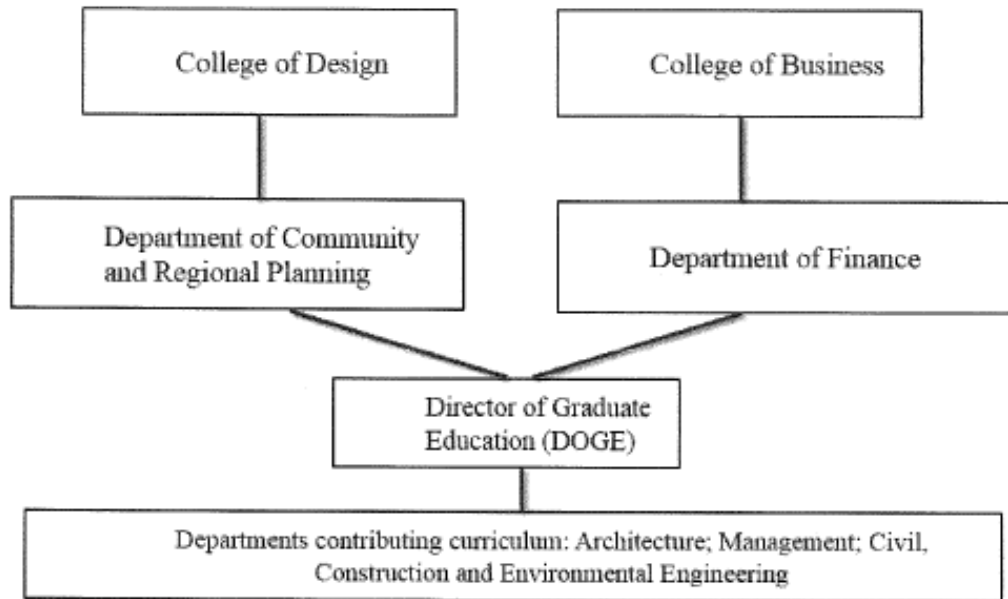


Figure E1. Organization Structure, MRED Program.

Administration

The Master of Real Estate Development (MRED) program will be jointly administered by the College of Design (CoD) and College of Business (CoB).

Curriculum

The core of the curriculum is provided by the home departments: Community and Regional Planning (CoD) and Finance (CoB). The departments of Architecture; Civil, Construction and Environmental Engineering, and Management will also participate in the program by teaching courses, as indicated in their letters of intent (Appendix F).

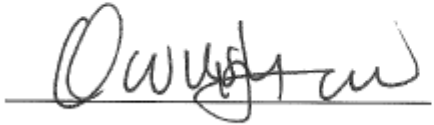
Director of Graduate Education

A Director of Graduate Education (DOGE) will be selected to direct the MRED program. The Community and Regional Planning and Finance department chairs will coordinate in consultation with their colleges' deans to choose the MRED DOGE.

Program Changes

Program teaching faculty are eligible to vote for all issues presented for a faculty vote. Decisions by the program teaching faculty will be determined by the simple majority of votes cast. Fifty percent participation of the faculty is required for a quorum on any vote.

Curriculum changes proposed by the program teaching faculty will need the approval of the faculty of each home department and their respective college curriculum committees.



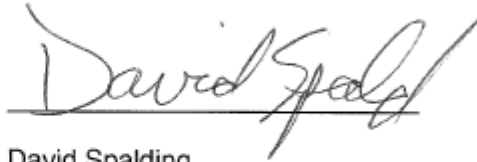
Francis Owusu
Professor and Chair
Department of Community & Regional
Planning



Frederick Dark
Chair, Departments of Accounting &
Finance
Dean's Professorship in Finance



Luis Rico-Gutierrez, Dean
College of Design



David Spalding
Raisbeck Endowed Dean
College of Business

Appendix F. Department letters stating intent to participate.

IOWA STATE UNIVERSITY

Department of Architecture
College of Design
Ames, Iowa 50011-3091
515 294-2557
FAX 515 294-1440
<http://www.design.iastate.edu>

Professor Francis Owusu
Chair, Department of Community and Regional Planning
156 College of Design
Iowa State University

June 29, 2017

Re: Proposal for Master of Real Estate Development (MRED)
Contact person: Tracy Turner, Associate Professor of Finance, turner@iastate.edu

Dear Dr. Owusu,

The Department of Architecture is pleased to accept your invitation to participate in the proposed MRED program.

With the assistance of Ulrike Passe, Associate Professor of Architecture and Ann Sobiech-Munson, an award-winning practicing architect, I have been actively engaged with the MRED taskforce to design specialized coursework, including a course titled "Architecture and Sustainable Design," and additional coursework on construction law to be included in the MRED legal analysis course.

The Department Architecture will provide the course "Architecture and Sustainable Design" as a required course in the MRED. This course will be designed for graduate students with little to no knowledge of the architectural profession and provide an introduction to architecture and sustainable design principles. Emphasis will be placed on the conceptual, technical and legal frameworks used during the architectural design and implementation process.

Sincerely,



Deborah Hauptmann
Professor & Chair
Department of Architecture
Iowa State University

IOWA STATE UNIVERSITY

OF SCIENCE AND TECHNOLOGY

Dr. Rick Dark
Chair, Department of Finance
College of Business
2333 Gerding Business Building
William L. Varner Accounting and Finance Suite
Iowa State University

June 28, 2017

Re: Proposal for Master of Real Estate Development
Contact person: Tracy Turner, Associate Professor of Finance, turner@iastate.edu

Dear Dr. Dark,

The Department of Civil, Construction and Environmental Engineering is pleased to accept your invitation to participate in the new Master of Real Estate Development program, to be offered jointly by the College of Design and College of Business.

The department will provide a required course in the curriculum focusing on construction basics, building systems and project management, with a projected course start date of spring 2019.

Sincerely,



Terry Wipf
Chair, Department of Civil, Construction and Environmental Engineering

From: Herrmann, Pol [MGMT]
Sent: Friday, August 11, 2017 2:34 PM
To: Turner, Tracy M [FIN] <turner@iastate.edu>
Subject: Intent to participate in leadership course for the MRED

Tracy,

The Department of Management intends to participate in the Master of Real Estate Development (MRED) program, initially with a leadership course to be taught by Professor Jim Summers.

Best regards,

Pol

Pol Herrmann, Ph.D.
John and Deborah Ganoë Professor in Business
Chair Departments of Management and Marketing
2350 Gerdin Business Building
Iowa State University
Ames, IA 50011-1350

pol@iastate.edu

<http://www.bus.iastate.edu/pol/>

IOWA STATE UNIVERSITY
COLLEGE OF BUSINESS

Appendix G. Letters of Support from University of Iowa and University of Northern Iowa.



Thomas A. Rietz
Soumyo Sarkar Professor of Finance and
Departmental Executive Officer
The Department of Finance
3244 John Pappajohn Business Building
Iowa City, Iowa 52242-1000
319-335-0858
Fax: 319-335-1958
Thomas-Rietz@uiowa.edu

August 8, 2017

Rick Dark, Chair
Departments of Accounting and Finance
Iowa State University College of Business
2330 Gerdin Business Building
Ames, Iowa 50011

Dear Rick,

I received and reviewed your proposal for a Master of Real Estate Development program to be jointly housed in Finance in ISU's College of Business and Community and Regional Planning in ISU's College of Design. I also forwarded it to Dean Sarah Fisher Gardial, Senior Associate Dean Amy Kristof-Brown and Associate Dean for MBA Programs David Frasier.

We have no concerns about this program nor any objections to it. We wish you luck with your proposal and program.

Let me know if I can be of further assistance. Feel free to contact me at (319) 335-0856 or Thomas-Rietz@uiowa.edu.

Thank you,

Thomas A. Rietz, DEO
Department of Finance
Tippie College of Business

cc: Dean Sarah Fisher Gardial
Senior Associate Dean Amy Kristof-Brown
Associate Dean David W. Frasier

20 October 2017

David P. Spalding, Raisbeck Endowed Dean
Iowa State University College of Business
Robert H. Cox Dean's Suite
2200 Gerdin Business Building
2167 Union Drive
Ames, IA 50011-2027

Dear Dean Spalding,

I have received your request for consideration of a new Master of Real Estate Development program at Iowa State University, a joint program between the colleges of Business and Design. As the institution with the only undergraduate Real Estate program in the state, we have no objections for offering this program and do hope that there are opportunities for collaboration as it is developed and offered.

Sincerely,



Leslie K. Wilson
Dean & Professor of MIS

Appendix H. Letters of support industry representatives.



June 22, 2017

Dean Rico-Gutierrez and Dean Spalding:

This letter is in support of the proposed Master of Real Estate Development program now under consideration by Iowa State University.

By way of introduction, my name is Don Young, founder and principal of D. R. Young Associates, a full service real estate development consulting firm located in the San Francisco Bay Area. Since establishing my practice almost 20 years ago, I have directed the development efforts for commercial, corporate and institutional clients with complicated and unique real estate needs. These clients have included E*Trade Financial, The Gap, Apple, Google, Adobe Systems, Symantec and LinkedIn. Institutional projects have ranged from the redevelopment of the California Academy of Sciences in San Francisco's Golden Gate Park, the Walt Disney Family Museum in the Presidio of San Francisco and the San Francisco Museum of Modern Art. More on D. R. Young Associates can be found at www.dryoungassociates.com.

With degrees in the design professions from both ISU and the University of California at Berkeley, I started my career viewing the built environment through the lens of the designer. What I quickly learned was that design is only one component of a highly diverse process that begins with plans and turns them into reality. The understanding of strategic planning, finance, accounting, investment, risk management, law and regulatory compliance, politics, jurisdictional project approval, design, construction and marketing are all vital components in today's successful execution of development projects. I also learned that the combination of these disciplines varies widely depending on client objectives.

The discovery of all of this lead me away from the single silo known as "design" to the multi-disciplinary leadership required to execute a particular vision – whatever that vision may be. It was this evolution that made me realize that there was a specialized need - not in designing or building buildings - but rather, *in getting buildings built.*

I was fortunate to be exposed to many unique opportunities that allowed me entry into this field. But in the process, I noticed that there was not one place where someone interested in real estate development could go to absorb the ever-widening breadth of knowledge needed to prepare one's self for this profession. For me, it was – and continues to be – an after-college, “learn as you go” education.

Of course, there are undergraduate and graduate level programs that offer courses and degrees in various aspects of real estate development. In business schools, these tend to be focused on finance and investment while in colleges of design, the concentration is on architecture, engineering or construction. Understandably, the resulting degrees tend to be approached more from the insular world of each field and less on the synthesis of how these come together to deliver a project in what is becoming an increasingly complicated world. Put simply, a vital skill set is being ignored and one that if available at the time, would have put my own career on a very different trajectory.

The work that Professor Tracy Turner and her team have done in developing the Master of Real Estate Development degree addresses this very important need. They have had the foresight in guiding the joint development of this program through both the College of Design and College of Business, ensuring collaboration at the highest levels of instruction. In doing so, they have created a course outline, sequence and degree requirements that will result in a well-rounded education that will produce highly qualified job candidates and employees. Finally, in designing the curriculum for working professionals, they ensure that participants will get the most out of this education, allowing them to adapt it immediately to real-world challenges.

I have had the pleasure of providing input to Professor Turner and her team as this program has unfolded and am confident that it will be regarded as extremely valuable to the field of real estate development. On their behalf, thank you for your careful consideration of their request for your approval.

Sincerely,



Donald R. Young
D. R. Young Associates
A California Corporation

From: Scott, Mary [mailto:Scott.Mary@principal.com]
Sent: Thursday, August 10, 2017 3:05 PM
To: Turner, Tracy M [FIN] <turner@iastate.edu>
Cc: Stubbs, Kevin <Stubbs.Kevin@principal.com>
Subject: ISU Master

Tracy:

The MRED program outline reflects an interesting array of diverse courses that are sure to provide students a broader knowledge base and lead to exciting employment options! The case studies and group analysis and varied courses are of interest to me, and I have been in the industry for almost 30 years. I wish the MRED program had been available earlier in my career as the wide array of courses would have been helpful in “the working world”. The real estate industry continues to seek those with a broader view of current issues, who can understand the effects of decision making and who possess the ability to analyze complex issues to determine realistic, affordable and responsible solutions. While employers like Principal Real Estate investors can teach some of this as part of ongoing training, graduates who are familiar with these concepts will be more valuable than typical college graduates with a higher likelihood of success as capital client managers, real estate professionals, analysts, developers and lenders.

Mary E. Scott | Director CRE
Principal Real Estate Investors
scott.mary@principal.com
o +1.515.246.7537 | m +1.515.868.8476
www.principalcrelending.com



Thursday, August 03, 2017

To whom it may concern,

I am strongly endorsing the creation of the Masters of Real Estate Development at Iowa State University. My name is Brandt C. Foster and I am an alum of the College of Business. Currently, I am the Head of Underwriting for Northwestern Mutual Real Estate Investments, the \$43 billion Real Estate investment arm of the Life Insurance Company. We are one of the largest and most active Real Estate lenders and developers in the United States. In my role, I also lead our recruiting efforts, seeking candidates from the Top 10 Real Estate MBA programs across the country.

Institutional investors, both domestic and foreign, have been increasing allocations to United States Real Estate over the past 5 years. The trend will continue as relative values and return prospects for the asset class provide a better alternative than traditional investments choices. For example, Northwestern Mutual has increased our Real Estate equity allocation by 1%, which on \$200+ billion matriculates to a massive annual increase in developments across the country. As a result, Real Estate development expertise is highly sought after and there are many job opportunities ranging from local developers to large institutions.

From a hiring perspective, I am seeking well-rounded candidates with a blend of industry and academic experience. A program with a solid cross-section of finance, design, and construction learning would be very appealing to recruit from. Most Real Estate MBAs are heavily focused on finance, which is essential, however they have limited exposure to the design and construction elements. There is a unique opportunity to blend a variety of expertise, filling a skill gap in the industry and creating highly-skilled candidates for employment.

Through my experiences in the Real Estate industry, I continue to be amazed at the influential players I've come across with ties to Iowa State University. This long list of individuals includes; financiers, developers, architects, and construction engineers. The creation of this program would be an excellent avenue toward creating a common bond between the key Real Estate industry players with ties to Iowa State. An industry professional advisory board would provide a guide post for the academic leaders of the program and create direct lines to eventual job opportunities for the students of this program.

I strongly support the creation of this program and I am willing to commit time, resources at my disposal, and eventual recruiting efforts towards helping this program prosper.

Respectfully,

Brandt C. Foster | Director
Northwestern Mutual Real Estate
720 East Wisconsin Avenue, Milwaukee, WI 53202
P: 414.665.1817 | C: 414.305.5038





www.HunzikerRealty.com

August 14, 2017

Mr. David Spalding
Raisbeck Endowed Dean of the College of Business
2167 Union Drive
Robert H Cox Dean's Suite
2200 Gerdin Business Building
Ames, IA 50011-2027

Dear Dean Spalding,

It is my pleasure to recommend the addition of the Master of Real Estate Development (MRED) graduate degree at Iowa State University.

I have reviewed the curriculum and the broad based multidisciplinary strategy of the program. I find the value to real estate development and financial industries as extremely beneficial.

The MRED takes the understanding of development to the next level, providing individuals multiple career opportunities.

Respectfully,

A handwritten signature in blue ink, appearing to read "Dean E. Hunziker", is written over a faint, larger version of the same signature.

Dean E. Hunziker
Hunziker & Associates, Realtors | Broker/Owner
515-291-4450

AMES

105 South 16th Street
Ames, Iowa 50010-8009
(515) 233-4450

ANKENY

1255 N. Ankeny Blvd., Suite 101
Ankeny, IA 50023
(515) 963-8618

BOONE

700 Story Street
Boone, Iowa 50036
(515) 432-8699

August 16, 2017

Ms. Tracy Turner
Assoc. Professor of Finance
Iowa State University
Ames, IA 50011

RE: Master of Real Estate Development (MRED)

Dear Professor Turner:

This letter serves as support for the implementation of the above noted Master degree program at Iowa State University.

Over the past many months, we have appreciated the opportunity to work with the Iowa State team that is developing this program. As you know, Hubbell Realty Company has been working in the Iowa and South Dakota real estate markets for over 161 years. Our company focuses on all areas of real estate including development, construction, brokerage and property management.

From my experience working with real estate development in Iowa for over 40 years, all stakeholders must collaborate broadly across disciplines, neighborhoods and departments to create and improve technologies, explore practices for their implementation, and to develop the aligned policies that will enhance the integrity of the real estate environment. I am excited about the opportunities your proposed program provides for a more knowledgeable workforce, which we see needed in the field of real estate development.

We strongly urge support for the implementation of this proposed program. Please contact me with any questions.

Best regards,

HUBBELL REALTY COMPANY



Rick Tollakson
CEO



8201 NW 97th Terrace
Kansas City, MO 64153
(816)746-9100 ofc/ or (816)520-3948 cell
Fax 816-746-0031

7 August 2017

Tracy Turner, Ph.D.
Department of Finance
Iowa State University

RE: Masters of Real Estate Development

Dear Tracy:

I am writing in support of your initiative for the Masters of Real Estate Development program. My BA Arch at Iowa State gave me a great base of understanding of Architecture and Construction Engineering, but it wasn't until I attended the University of Illinois that they allowed us to combine the M. Arch and MBA degrees to come close to any "development" emphasis. Even with these advanced degrees I did not know half of what was needed to truly go at risk in the market to be a true Real Estate Developer.

With the program/curriculum you are proposing you have filled many of the gaps we have discussed over the last few years in what I feel I was missing from my education. The cost of the mistakes I have made are exponential compared to the cost of these classes and finally having someone put the whole process and deliverables together in one package. While there are many types of Real Estate Development paths in the marketplace, I believe they all have in common the need for a deep understanding of the process and alternatives to elude to the highest quality and effectiveness of the built environment. Initial sustainability is as important as the re-purposing efforts we extend after functional obsolescence.

Finally, packaged as an "executive" MRED program with flexible on-line courses and high-impact in-person workshops should be an effective tool for making this program highly desirable. I wish you the best of luck in the program and will dedicate whatever I can to help you make it successful.

Sincerely,
FOUTCH BROTHERS, LLC

A handwritten signature in blue ink, appearing to read 'Steve Foutch', is written over the company name.

Steve Foutch, CEO

From: Jim Osterling [mailto:jimo@bridgeadvisorsllc.com]
Sent: Wednesday, August 09, 2017 9:02 PM
To: Spalding, David P [BUS] <spalding@iastate.edu>; Turner, Tracy M [FIN] <turner@iastate.edu>
Subject:

Dean Spalding:

I understand from Professor Tracy Turner that the plans for ISU to offer a real estate development degree have progressed considerably since you and I last met in Los Angeles.

You may recall that I am an ISU alum, a real estate developer based in Southern California and an adjunct professor at the Sol Price School of Public Policy at the University of Southern California (USC). I teach in the undergraduate equivalent of the Masters in Real Estate Development (MRED) degree program. In that capacity, I have taught evening courses in Real Estate Development, Real Estate Finance and Real Estate Market Analytics.

I strongly endorse your objective to add an MRED degree program to your curriculum. In particular, the decision to include coursework in architecture, construction, civil engineering, planning and finance in the curriculum will result in graduates that will be effective in many of the disciplines that are involved in a successful real estate project. Real estate developers must have knowledge in all of these disciplines to make effective decisions that lead to successful developments. Your graduates will be highly sought after in our industry.

I only wish this multi-disciplinary degree had been available when I was attending business school. I had to learn the non-business school disciplines OTJ.

If I can further assist you in any way as the degree program gets underway, please let me know.

Sincerely,

Jim

Jim Osterling
B.S. - Iowa State University - Industrial Administration 1979
MBA – Kellogg Graduate School of Management, Northwestern University - 1986

Jim Osterling
Bridge Financial Advisors
(626) 797-8678 (Office)
(626) 818-0850 (Cell)
jimo@bridgeadvisorsllc.com
www.bridgeadvisorsllc.com

From: Laura Meyer [mailto:Laura.Meyer@kumandgo.com]
Sent: Monday, August 14, 2017 4:08 PM
To: Turner, Tracy M [FIN] <turner@iastate.edu>
Subject: RE: ISU graduate degree opportunity in real estate

On behalf of Niki DePhillips:

To whom it may concern,

My name is Niki DePhillips and I serve as the Senior Vice President of Store Development for Kum & Go, L.C. I write today to wholeheartedly lend my support for the proposal to include a MRED as a part of Iowa State University's degree offering and curriculum.

Throughout my career as a real estate executive, I have learned the ins and outs of commercial real estate primarily through on-the-job experience. The opportunity to broaden my knowledge of the real estate industry through a formalized, comprehensive curriculum would have been of great value to me, and would have amplified my career trajectory.

The world of real estate is complex-- there are myriad specializations involving the development and management of real property investments. A well-rounded professional in real estate should have a skill set based in both "real world" experiences and a solid academic foundation. Professionals bringing both a base of experiential learning and an advanced degree in real estate would be very attractive to our company as potential candidates.

For these reasons, I endorse Iowa MRED Program. Please reach out if you have any questions.

Niki DePhillips

Appendix I.

Table I1. Possible structure of a one week, intensive 40 hour course to achieve 3 credit hours.

		Contact hours per activity	Total contact hours	Estimated total non-contact hours
1. Pre-course materials	Six 1 hour video lectures with corresponding readings and discussion to be completed prior to course meeting	6	12*	36*
2. pre-course orientation (day prior)	course orientation, meet faculty and receive packet of readings	2	2	3
3. In-person course structure	daily schedule	7 per day	7 x 5 = 35	11**
	8:00am-10am lecture	2		
	10-10:15 morning break			
	10:15-12:15 lecture	2		
	12:15-1:15 lunch break			
	1:15-2:15 pm <i>study hour</i>	1		
	2:15-3:45 pm lecture	1.5		
	3:45-4:00 pm afternoon break			
	4:00-5:30 pm lecture	1.5		
	Mon, Tues, Wed <i>study time</i> 7:30 — 9:30 pm	2		
	Thursday night dinner & speaker 6-8 pm	2	2	
	Take home final exam			30
Total			51	80

* Includes 6 hours of video lecture, 6 hours of estimated online contact and discussion facilitated by the instructor, and 6 hours of student reading per 1 hour of video lecture.

** includes a 1:15 pm daily study hour and 6 hours of Mon-Wed evening study.