



**Graduate Board**  
**Thursday, September 30, 2021**

**By Zoom:**

[Join Zoom Meeting](#)

ID: 87009682052

Passcode: 354730

[\(US\) +1 301-715-8592](#)

Passcode: 354730

**3:00-4:30 pm**

**AGENDA**

1. Welcomes/introductions
  - New members
  - Alternative Graduate Board meeting time?
2. Review/approval of the May 13, 2021 Graduate Board minutes
3. Review/approval of the September 14, 2021 Curriculum Committee report
4. Announcements/updates
  - New Smartsheet curriculum proposal form with electronic routing
  - New Smartsheet assistantship appointment form with electronic routing
  - New course registration form
  - Graduate enrollment update
5. Continued work on developing graduate Program Learning Outcomes (PLOs)
6. New graduate curriculum proposals:
  - 4+1 proposal for Master of Arts in Teaching in Secondary Education
  - New graduate concentrations in the MBA
    - Public and Nonprofit Management
    - Outdoor Industry Management
    - Geospatial Technology
7. Pursuing best practices in graduate mentoring
  - Framework
  - Thoughts on committee membership
8. Items arising



**Graduate Board  
Thursday, May 13, 2021**

**By Zoom:**

[Join Zoom Meeting](#)

ID: 95316865918

Password: 524358

**3:00-4:30 pm**

AGENDA

Meeting called to order: 3:05PM

Attendance: J. Artesani, J. Ballinger, C. Beitzl, J. Bonnet, D. Bousfield, T. Bowden, S. Butler, A. Cruz-Uribe, S. Delcourt, D. Dryer, S. Ell, S. Fraver, J. Gill, W. Gramlich, N. Hall, S. Jain, Z. Jin, S. Klein, K. Kreutz, M. LaRocque, J. McClymer, E. McKillen, I. Mette, H. Onsrud, E. Pandiscio, P. Poirier, L. Rickard, D. Rooks-Ellis, S. Smith, C. Sponarski, K. Vekasi, V. Weaver, T. Yoo.

Guests: Taylor Houdlette, Mohamad Musavi, Kimberly Huguenard, Yifeng Zhu, Crystal Burgess, Sharmila Mukhopadhyay, J. Seale.

- Approval of the March 25, 2021 and April 22, 2021 Graduate Board minutes  
Carly Sponarski – motion to approve, 2<sup>nd</sup> Dylan Dryer  
Unanimous approval
- Approval of the May 4, 2021 Graduate Curriculum Committee report

New Courses: CMJ 540 Social Media and Digital Cultures  
ECE 591 Deep Learning  
EET 514 Printed Circuit Board Design  
EET 515 Automation and Integration  
EET 560 Renewable Energy and Electricity Production  
SFR 548 Quantitative Social Science for Natural Resource  
Management  
SFR 589 Tools for Consulting Foresters  
SPA 519 Rebels and Realists in 19C

Modifications: COS Data Visualization  
EHD 586 Seminar: Action Research in Pre K-12  
MEE 554 Theory of Elasticity  
MEE 562 Advanced Fluid Mechanics  
PSE 581 Scientific Communications II  
SIE 507 Information Systems Programming  
SIE 515 Human Computer Interaction  
SIE 554 Spatial Reasoning  
SWK 571 Trauma Theory and Treatment in Social Work  
Practice

Previously approved:

BEN 551 Biological and Medical Image Analysis I  
BEN 552 Biological and Medical Image Analysis II

Motion to accept – Sandy Butler, 2<sup>nd</sup> – Harlan Onsrud

Sharon Klein – urged whoever is teaching renewable energy to reach out to those teaching similar classes (Mohamad Musavi said he would connect with the professor.)

Unanimous Approval

- Review of Graduate Board membership and introduction of new members
  - Updates: (see attendance list)
    - i. Jennifer Seale will replace Nancy Hall for CSD next year.
    - ii. Kim Huguenard will replace Shaleen Jain for CIE next year.
    - iii. Anne Knowles will be coming back after sabbatical for HTY
    - iv. Elizabeth Allan will be replacing Ian Mette
    - v. Carly Sponarski suggested that we connect with Erik Blomberg to determine her replacement.
    - vi. Kristin Vekasi will be taking a sabbatical – Jim Settele will attend for SPIA.

Executive Committee: Shaleen Jain is going to become the Department Chair for Civil and Environmental Engineering & stepping off the Executive Committee and Carly Sponarski is leaving the University. Pankaj Agrawal, Dylan Dryer, and Jim Artesani have agreed to be renominated for the Executive Committee.

In addition to these 3 faculty, Sharon Klein was nominated as the College of NSFA representative. Due to turnover in the College of Engineering (COE) Graduate Board representatives the COE representative will be named later.

Motion to approve candidates: Nancy Hall, 2<sup>nd</sup> Ian Mette  
Unanimous approval

- Announcements/updates
  - Commencement feedback – A video recorded stage march & 6 hooding ceremonies over Zoom took place over the last couple weeks of April. Any feedback within departments?
    - i. Sandy Butler – appreciated our efforts & students did as well.
    - ii. Students and family members appreciated the hooding.
    - iii. Deborah Rooks-Ellis – students really appreciated the online option. S. Delcourt suggested that we might consider this option in the future for online students.
  - Summer dissertation fellowships – request for nominations has been sent out.
    - i. Apps due May 21, 2021
    - ii. We will be allowed to use space in Stodder for office space for students who need it.
    - iii. We plan to ask for matching funds from the programs to make the maximum number of summer awards.
  - Stodder Faculty member in residence – still accepting applications
    - i. One inquiry & one application so far
    - ii. Not limited to new faculty members if an existing faculty member is interested.
    - iii. Graduate Community Coordinators (GCCs)s have been chosen: Calvin Johnson (SPIA) & Carly Fredericks (School of Forestry).
- Application fee waiver – May 15-June 15
 

Piloting a limited application fee waiver period in hopes to have a broader fee waiver policy starting next year to help increase diversity and to deepen the applicant pool. We are awaiting President's approval to move forward. Ian Mette expressed appreciation to address barriers of inequity.
- Registration – Please encourage graduate students to register early. Health insurance starts August 1<sup>st</sup>. Courses that are under-enrolled are in danger of being cancelled. Scott has proposed to the Bursar's office that they move the student billing due date later again this year to September 15<sup>th</sup> to try to help remove barriers to enrolling. William Gramlich expressed appreciation for the delayed due date. It helps international students especially who sometimes have to pay before they arrive.
- Orientation planning – Taylor Houdlette – 2 day orientation – 1<sup>st</sup> day to new TA's, 2<sup>nd</sup> day will be new graduate student orientation.
  - Taylor will be reaching out to get names of new & returning TA's.
- We have already received 2000 applications for summer & fall! However we are down in doctoral applications across all 5 colleges. S. Delcourt asked GB members what was happening on the ground in their programs.

- J. Gill mentioned that SBE's programs were already full and found out too late about new available TA lines.
- Also a drop in international applicants may have impacted doctoral enrollment.
- Mentors were hesitant to take on new grad students due to the pandemic & inability to do field work, etc.
- New program proposal discussion:
  - Proposal for a Graduate Certificate in Engineering Applications of AI
    - Last meeting with the board was in February. Since then, Engineering has met with SCIS 3 times to revise the proposal. The version in the GB packet is the 5<sup>th</sup> version. Yifeng Zhu expressed appreciation to Terry Yoo for his help in the process. The new proposal includes several other courses from engineering programs. Dean Humphrey is satisfied with the revisions in the proposal as is Dean Haddad.

Motion to approve – Kristin Vekasi, Sharon Klein 2<sup>nd</sup>.

S. Delcourt made a suggestion to strike a line from the proposal referring to overload teaching (financial portion). J. McClymer agreed that revision addresses his concern.

Unanimous approval to move forward with two abstentions from the vote: Harlan Onsrud & Terry Yoo.

- Substantive change proposal for the MA in Financial Economics  
Sharon Klein described a number of changes to course offerings, as well as retirements and new hires in the School of Economics. Financial Economics course has changed over time. The substantive change proposal is more reflective of what we have been doing.  
Three major changes: Reflect updated course offerings, change FIE program from a Master of Arts to Master of Science, and to include a non-thesis and a thesis option.

Motion to approve Laura Rickard, 2<sup>nd</sup> – Kristin Vekasi

This proposal needs to go up to the UMS for approval.

Unanimous approval to move proposal forward.

- Proposal for an interdisciplinary faculty group and concentration in Materials Science and Engineering  
Dr. Sharmila Mukhopadhyay – has been working with a multi-disciplinary faculty group on this proposal to establish a new concentration in materials science and engineering (MSE) within the Interdisciplinary Doctor of Philosophy (IPhD) program. Faculty from 4 different academic departments have already expressed interest. There is a paradigm shift in universities – looking for more students with multi-

disciplinary backgrounds. IPhD would be the best way to promote this option. The MSE concentration could potentially bring in new students who would like to do research in fields such as materials science, chemical and materials processing, composites, manufacturing and product development, healthcare and biotech, renewable energy, etc.

Cici Cruz-Urbe – would love to be involved (Earth and Climate Sciences) and expressed excitement for the opportunities for our students.

Will Gramlich asked about what criteria would be used to determine faculty involvement.

S. Mukhopadhyay - Steering Committee will be established to help develop the criteria.

Zhihe Jin – asked about the 5 core courses and 2 electives - were there overlapping topics

If anyone else is interested in collaborating in this effort, please email Sharmila

Will Gramlich – motion to approve. 2<sup>nd</sup> – Zhihe Jin

Elizabeth McKillen suggested that it might be interesting to include the liberal arts, something like the history of material culture.

Unanimous approval to move the proposal forward to the Vice President and Dean for approval.

- Pursuing best practices in graduate mentoring
  - S. Delcourt informed the GB that this issue would be a priority topic for AY 2021-22 and that he planned to establish an *ad hoc* committee through the Graduate Board to make recommendations.
  - Sharon Klein suggested that there might be a current group of students who would also be interested in participating.
  - Both the History department & the School of Biology and Ecology have active graduate student organizations. S. Delcourt also mentioned that the Graduate Student Government would be helpful in suggesting student members.
- Items arising
  - S. Delcourt appreciated the Grad Board and the Executive Committee for their active involvement and participation all year, especially given the difficulties raised by the pandemic, and wished everyone a restful and rejuvenating summer.

Meeting adjourned 4:30PM.

## **CURRICULUM COMMITTEE REPORT**

**The Curriculum Committee met on September 14th, 2021 and is recommending the following courses to the Graduate Board for approval at its September 30th meeting.**

*New Courses:*

**DSE 510** Data Science and Engineering Practicum

**ERL 541** Methods of Teaching English in the Secondary School

**ERL 604** Doctoral Proseminar in Literacy II

**INT 610** Advanced Seminar in Integrated Behavioral Health Care



## **Proposal for a MAT Four Plus One Master's Degree (BA/BS/MAT)**

The Four Plus One Master of Arts in Teaching (MAT) degree is an accelerated teacher licensure program that leads to initial teacher certification in a designated content area and a master's degree. It is designed for those already holding an undergraduate degree with relevant content area coursework and interested in becoming a secondary school teacher. Content areas include: Math, Life Science, Physical Science, English, Social Studies, and World Languages. The MAT program prepares graduates for teaching positions at the secondary school level (grades 7-12) and certification by the Maine Department of Education.

This 4+1 program offers students throughout the University of Maine system the opportunity to earn a Bachelor's degree in a student's focus area and a Master's degree at the University of Maine, Orono in five combined years of study.

A primary advantage to pursuing this program is the accelerated nature of the MAT and that students may complete MAT coursework as part of the undergraduate career. The cost of earning the MAT degree is reduced because students pay undergraduate tuition for the nine credits completed during their senior year that are also counted towards their MAT degree.

### **Core Program Requirements:**

Students enrolled in the Four Plus One option earn a bachelor's degree at the end of their senior year and graduate with their class. In the Four Plus One option, students continue with classes in the immediate subsequent Summer semester after graduation and the MAT is earned after the fifth year.

During their senior year, students may enroll in up to 9 credits of graduate-level course credits at the 500-level or above. Coursework will count towards the MAT and can count towards their undergraduate degree. Students must earn a grade of "B" or better to be counted toward the MAT degree. Over the course of earning the MAT degree, students are permitted a maximum of two 400-level courses in their field or concentration.



## Four Plus One Coursework and Project:

Students must complete 36 credit hours of course work for the graduate degree. A minimum of 30 credit hours must be taken at the graduate level. Student's will work with an MAT faculty advisor to plan and select courses that will support a student's interests and career path.

## Four Plus One Example Schedule

*(Advisors will work with the student to design an optimal program.)*

Semester	4+1	MAT
<b>Fall - Senior year</b>		
	Content area class 1 (3)	
<b>Spring - Senior Year</b>		
	EDT520 - Digital Age Teaching and Learning Methods (3)	
	Content area class 2 (3)	
<b>Summer</b>		
	<b>EHD501- The Social Context of Education (3)</b>	<b>EHD501- The Social Context of Education (3)</b>
	<b>EHD504 - Teaching and Assessing for Student Learning (3)</b>	<b>EHD504 - Teaching and Assessing for Student Learning (3)</b>
	EHD511** - Prevention and Intervention in the Classroom, Promoting Positive Behavior and Increasing Academic Engagement (3)	EHD511** - Prevention and Intervention in the Classroom, Promoting Positive Behavior and Increasing Academic Engagement (3)
		SED500 - Adapting Instruction for Students with Disabilities (3)
<b>Fall</b>		
	<b>EHD657 - Educational Practicum (3)</b>	<b>EHD657 - Educational Practicum (3)</b>
	<b>Discipline-based teaching methods course (3)</b>	<b>Discipline-based teaching methods course (3)</b>
	SED500 - Adapting Instruction for Students with Disabilities (3)	Content area class 1* (3)
		Content area class 2* (3)
<b>Spring</b>		
	<b>EHD693 – Educational Internship (6)</b>	<b>EHD693 – Educational Internship (6)</b>
	ERL537 - Literacy Across the Curriculum (3)	EDT520 - Digital Age Teaching and Learning Methods (3)
<b>Summer</b>		
		ERL537 - Literacy Across the Curriculum (3)

- \*\*Grad level version of 301

- Individual pathways are possible, however classes in **bold** are only offered in the semester shown.

## **Admission:**

Students apply for the Four Plus One during their junior year (at least 60 but no more than 100 completed credit hours applicable towards the undergraduate degree). Students must have an undergraduate GPA of 3.0 or higher and passing scores in the Praxis Core Skills for Educators tests. Bryan Silverman will be the point of contact for the MAT Four Plus One program.

Please note that admission to the Four Plus One option includes provisional admission to the Graduate School. **Formal application for admission to the MAT program (including payment of the application fee) must be made through the Graduate School and should occur no later than Fall of the senior year.** The Praxis Core is a requirement for students in the MAT Four Plus One option. Also note that students must maintain a 3.0 GPA or higher through the completion of the undergraduate degree in order to gain full admission to the accelerated MAT program and be allowed to double count credits.

Students who meet the above requirements must matriculate in the MAT program by Spring semester of their senior year (at the latest) in order to apply the double-counted credits towards the MAT degree. Students in the Four Plus One option must complete the MAT curriculum within 15 months of matriculation. Under extraordinary circumstances, a student may petition to delay matriculation up to an additional 12 months.

## **Tuition:**

Undergraduate tuition is charged for all graduate courses taken in the senior year. Graduate tuition will be charged for courses taken after matriculation into the MAT program.

## **Approximate Timeline:**

### **Junior Year**

Contact Bryan Silverman graduate advisor for the MAT Four Plus One program to discuss interests and plan of study for senior year

Spring semester - Pass Praxis Core and apply to the 4+1

May 1 – register for classes and complete a Program of Study with graduate advisor.

# Master of Arts in Teaching 4+1

A Master of Arts in Teaching (MAT) degree is an accelerated teacher licensure program that leads to initial teacher certification in a designated content area and a master's degree. It is designed for those working towards an undergraduate degree with relevant content area coursework and interested in becoming a secondary school teacher. Content areas include: Math, Life Science, Physical Science, English, Social Studies, and World Languages. The MAT program prepares graduates for teaching positions at the secondary school level (grades 7-12) and certification by the Maine Department of Education.

This 4+1 program offers students throughout the University of Maine system the opportunity to earn a Bachelor's degree in a student's focus area and a Master's degree at the University of Maine, Orono in five combined years of study.

Advantages to pursuing the MAT 4+1 program are the accelerated nature of the program and the reduced costs related to double counting up to 9 credits towards both their undergraduate degree and the MAT.

The MAT is a 36 credit hour blended program that is completed through in-class, online, and in-school experiences.

**Degrees offered:** MAT

**Program Format:** [Blended](#)

**Application deadline:** Rolling with recommended dates: August 1<sup>st</sup> (Fall), December 1<sup>st</sup> (Spring)

**Test Required:** Praxis Core, Praxis: Content Knowledge

**Contact:** Bryan Silverman

**Contact Email:** [bryan.silverman@maine.edu](mailto:bryan.silverman@maine.edu)

**Program Website:** [MAT](#)

### **Senior Year (in 4+1 option)**

Fall Semester – Sign up for agreed upon course(s)

Spring Semester – Sign up for agreed upon course(s)

Summer Semester – Sign up for EHD501, EHD504, EHD511

### **Application Procedure:**

This program is selective. Students must have a cumulative GPA of at least 3.0 to be admitted and must maintain that GPA through graduation in order to apply the graduate-level course credit earned as an undergraduate towards the MAT degree. The program is only open to all current University of Maine System undergraduates.

### **Application Requirements:**

1. A statement of purpose. This statement should discuss anything that might be relevant to an admissions decision. This will be your opportunity to talk to the admissions committee directly. Ideally, your statement should address why you wish to be admitted to the accelerated MAT program, your preparation for the program and your future plans after receiving the MAT degree. This statement should be no more than two single-spaced pages.
2. Two letters of recommendation. These letters must come from University of Maine System faculty or other education-related professionals from the State of Maine. These letters may be mailed or emailed directly to the program advisor or they can be included along with the application in a sealed envelope.
3. A current University of Maine System transcript. Only a University of Maine System transcript is needed.

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4. Passing scores in the  
Praxis Core Skills for Educators.

**TO:**

**From:**

**Subject:** MaineMBA Concentration Proposal for Public and Nonprofit Management

**Date:** March 1, 2020

The Graduate School of Business of the Maine Business School proposes to establish a **Public and Nonprofit Management** concentration within the University of Maine Master of Business Administration (MaineMBA).

**Rationale**

Representing an interdisciplinary partnership between the University of Maine and the University of Southern Maine, the MaineMBA concentration in Public and Nonprofit Management will deliver graduate level professional education opportunities pairing the curriculum of the MaineMBA with the skills and knowledge necessary for individuals pursuing executive-level careers in areas such as public administration, public policy, community organizations and advocacy, or human services.

This proposal has been reviewed and is supported by:

- The Faculty of the Graduate School of Business
- The Dean of the Maine Business School and the Graduate School of Business
- The Faculty of XXX
- The Dean of XXX

## **University of Maine Graduate School of Business**

### **Proposal for a MaineMBA concentration in Public and Nonprofit Management**

#### **Proposal Contents:**

1. Academic Program Alignment
2. Program Description
3. Learning outcomes
4. Admission Requirements
5. Completion Requirements
6. Course Descriptions

#### **1. Academic Program Alignment**

##### Mission and Goals

The MaineMBA Concentration in Public and Nonprofit Management coincides with the Strategic Vision and Values of UMaine, the Unified Accreditation for the University of Maine System, the UMS Transforms initiative, and the emphasis on developing interdisciplinary programs that cross university boundaries. This concentration is being offered in partnership with the Muskie School of Public Service at the University of Southern Maine.

We believe this program supports the mission and goals of the University of Maine System, the Graduate School of Business, and the Muskie School of Public Service by preparing students for successful careers in management and leadership positions in the public and nonprofit spheres through the development of applicable knowledge and skills of these systems. We believe this program will help augment the specialized skills of those MBA graduates particularly interested in working in the public and nonprofit sectors.

##### Program Demand

Jobs in the public and non-profit sectors include positions for Policy Analyst, Public Administrator, Economist, Administrative Manager, Emergency Management Director, Chief Executive Officer, Human Resources Manager, Program Manager, Project Manager, among others.

BurningGlass indicates a rise in employment projections for the next decade with an average regional New England growth of 5.42% and the growth for Maine at 0.25%. The average salary within this general sector is \$69,962 for New England and \$74,811 in Maine. (See BurningGlass report: appendix a)

##### Program Resource Needs

The Public and Nonprofit Management course sequence is currently being delivered by the University of Southern Maine on a regular rotation – no new courses have been developed.

#### Delivery Modalities

- Courses are primarily developed and delivered in the asynchronous, online 7/8 week format, with occasional options delivered in online synchronous or on-campus modalities, as needed.
- Internship lengths and/or required hours will be determined on a case-by-case basis and may be longer than 7-weeks and in person or virtual.

## 2. Program Description

The Public and Nonprofit Management concentration prepares students for professional leadership roles in government, nonprofit and community organizations, and other public service settings. The concentration develops robust, foundational knowledge and skills that will permit graduates to excel in the fields of public and nonprofit management. Coursework focuses on conceptual learning and application through use of real-world data, case studies, client-and community-based projects and assignments, and provides opportunities to apply learning to contemporary issues and challenges. The concentration serves working professionals and pre-career students from varied educational backgrounds who aspire to leadership roles and careers as managers or advocates in public service.

## 3. Program Learning Outcomes

Upon completion of the concentration, learners will:

- Understand the institutional, political, organizational and ethical challenges of managing public and nonprofit organizations
- Identify the differences between public and private organizations and the unique challenges of managing in this sector
- Apply theories, processes, and best practices in public and nonprofit management

## 4. Admission Requirements:

Admission to the MaineMBA concentration in Public and Nonprofit Management will be the same as general MBA admission, with admission requirements including:

- Undergraduate GPA above 3.0
- GMAT scores above 500 or 5+ years professional or military experience
- Satisfactory TOEFL/IELTS scores
- Completed application with supplemental documentation and fees
- Foundational skills in Economics, Accounting, Finance and Statistics

## 5. Completion requirements:

MaineMBA learners pursuing this concentration will complete:

### 24 credits (8 courses) from the MaineMBA Core:

1. BUA 601: Strategic Data Analysis
2. MBA 609: Financial Statement Analysis
3. MBA 626 Management of Contemporary Organizations
4. MBA 637: Global Supply Chain Management

5. MBA 651: Financial Management
6. MBA 670: Managerial Marketing
7. BUA 680: Foundations of Business Intelligence
8. MBA 649: Strategic Decision Making

**Nine Credits (3 courses) of Public and Nonprofit Management Concentration Courses:**

**Take one required course:**

1. PPM 535 Managing Governments and Nonprofits

**Choose two remaining courses from:**

- PPM 531 Measuring Performance in the Public and Nonprofit Sectors
- PPM 534 Managing Cities, Towns, and Counties
- PPM 545 Grant Writing and Development
- PPM 553 Volunteer Engagement and Management
- PPM 630 Innovation and Change in Nonprofits
- PPM 632 Human Resource Management and Policy
- PPM 633 Strategic Planning in the Public and Nonprofit Sectors
- PPM 640 Public Finance and Budgeting

**6. Course Descriptions**

**PPM 535 Managing Government and Nonprofits**

This course provides students with an introduction to the field of public and nonprofit management and an understanding of the institutional, political, organizational, and ethical challenges of operating public organizations. There will be special attention to how nonprofit and public organizations are functioning in the “new normal” of greater need, concentrated wealth, increased poverty and decreased social mobility, and its effects on enhancing connections and building collaboration between public, nonprofit and private sector organizations and the communities they serve. Students will explore the similarities and differences between public, nonprofit and private organizations, evaluate the environment of public organizations, consider the importance of working in diverse communities and identify how different structural and environmental factors constrain and enhance the ability of managers to achieve their organization’s mission. Through case work and learning opportunities in the field, students will explore in-depth many current management issues, diagnose problems and develop feasible solutions by applying theories and frameworks to “real world” problems in public and nonprofit organizations as well as develop management tools and skills needed for directing programs, people and resources to solve complex problems. Cr. 3

**PPM 531 Measuring Performance in the Public and Nonprofit Sectors**

This course is an introduction to performance measurement, monitoring, and reporting and related activities such as benchmarking for consumer and citizen use, and service efforts and accomplishments reporting. Students who complete the course will be prepared to develop basic performance indicators for public and nonprofit agencies in a variety of policy and management arenas. Specific attention is given to reviewing a variety of performance indicator systems. An emphasis will be placed on “hands-on” learning so that students gain confidence in using measurement techniques and learn how to apply practical measurement strategies in real world settings. Cr 3.



**PPM 534 Managing Cities, Towns, and Counties**

Overview of the key responsibilities and activities associated with the administration of local and county government. Appreciation of the dynamics and politics of the administration of local government entities. An emphasis is placed upon the actions of managers interacting with department managers, the public, and volunteer committees. Cr 3.

**PPM 545 Grant Writing and Development**

Concentrates on the process of securing the resources to support effective nonprofit projects. The goal of the course is to prepare students to identify sources of funding, write proposals that will attract grant awards, and develop an understanding of what it takes to build an organization, which foundations, public entities, and individual donors are confident in supporting. The course will begin with an examination of current trends in this post-industrial economy in which money is available to the voluntary and private sector. It will also focus on the importance of understanding the “ways of money” and knowing how to develop and administer a budget that will inspire trust in the organization’s reputation for effectively managing its programs and its fiscal resources. Cr 3.

**PPM 553 Volunteer Engagement and Management**

Volunteer engagement and management focuses on the dynamics of volunteerism in nonprofit organizations and in the life of communities. This course exposes students to strategic and comprehensive skills for managing volunteers, and examines definitions, values, and standards as well as what constitutes effective practice in the field of volunteer resources management today. While the course is especially designed for current or future executives and managers of nonprofit organizations and volunteers, it will also benefit others who plan to work with volunteers and those who want to develop their own vision or work on policy in the field of volunteerism. Cr 3.

**PPM 630 Innovation and Change in Nonprofits**

This course offers students a conceptual framework for understanding the role of nonprofit organizations in a market economy and democratic society and the challenges that are a natural feature of the nonprofit sector. Nonprofit leaders make decisions in increasingly networked environments that are characterized by uncertainty, resource constraints, competition for human resources, barriers to coordination as well as political, policy and community challenges. Students will consider the unique social, economic and policy environment in which nonprofit organizations reside in Maine and nationally, and identify effective strategic, governance, and management approaches in supporting innovation and change in the nonprofit sector. The course is organized to enable students to engage directly with nonprofit organizations and explore the opportunities and resistance to change, barriers to innovation as well as problem-solving techniques that promote nonprofit success and growth. Cr. 3.

**PPM 632 Human Resource Management and Policy**

This course examines human resource management and policies in the public and nonprofit sectors. This course evaluates and synthesizes from a management perspective the theory and practice of strategically developing, utilizing and aligning human resources to improve the organizational culture, quality and outcomes of nonprofit and public organizations. Topics include the development of employment systems and the notion of work, the policies and functions associated with personnel management, and considers contemporary human resource management and policy issues such as workforce development, equity and diversity, talent acquisition, knowledge management, artificial intelligence, work-life balance, and the impact of technology. Cr 3.

**PPM 633 Strategic Planning in the Public and Nonprofit Sectors**

Examines how public organizations can utilize strategic planning in responding to environmental change and the future. Approaches to and techniques of strategic planning are covered, including goal setting, environmental scanning, resource audits, and the formulation of strategy and its implementation. Examples are drawn from Maine state and local government and the nonprofit sector. Cr 3.

**PPM 640 Public Finance and Budgeting**

Equips students with the knowledge, vocabulary, skills, and practical tools needed to participate skillfully and ethically in public finance policy development and decision-making and to assume a leadership role in guiding dialogue about resource acquisition and allocation choices. Teaches participants to assess context, to identify and analyze budgetary opportunities and constraints facing state and local decision-makers, to generate and evaluate alternatives using frameworks from public finance, and to project impact of choices, including identifying the potential for unintended consequences. State and local governments are the focus of the course, with the federal budget considered from the perspective of its impacts on the economies and fiscal options of lower governmental levels. Students entering the course should be familiar with Excel. Cr 3.

**PUBLIC AND NONPROFIT MANAGEMENT  
NORTHERN NEW ENGLAND**

Project Criteria

Validate	Programs
States	Maine, Massachusetts, New Hampshire, Vermont
Degree Level	Master's degree
Time Period	1/1/2020 - 12/31/2020
Selected Programs	Education Policy Analysis (44.0502), Health Policy Analysis (44.0503), International Policy Analysis (44.0504), Public Policy Analysis, General (44.0501), Public Policy Analysis, Other (44.0599), Public Administration and Social Service Professions, Other (44.9999), Public Administration (44.0401), Community Organization and Advocacy (44.0201), Human Services, General (44.0000)
Career Outcomes mapped to Selected Programs of Study	Social / Human Services Manager, Natural Science Research Manager, Social Science Researcher, Policy Analyst, Public Administrator, Economist, Administrative Manager, Emergency Management Director, Regulatory Affairs Specialist, Business / Management Analyst, Healthcare Administrator, Chief Executive Officer, Urban / Transportation Planner, Human Resources Manager, Program Manager, Project Manager

**How Many Jobs are there for Graduates OF THIS PROGRAM?**

For your project criteria, there were **3,458** job postings in the last 12 months. Compared to:

- 1,313,835 total job postings in your selected location
- 164,755 total job postings requesting a Master's degree in your selected location

The number of jobs is expected to **grow** over the next 10 years.

**Growth by Geography**

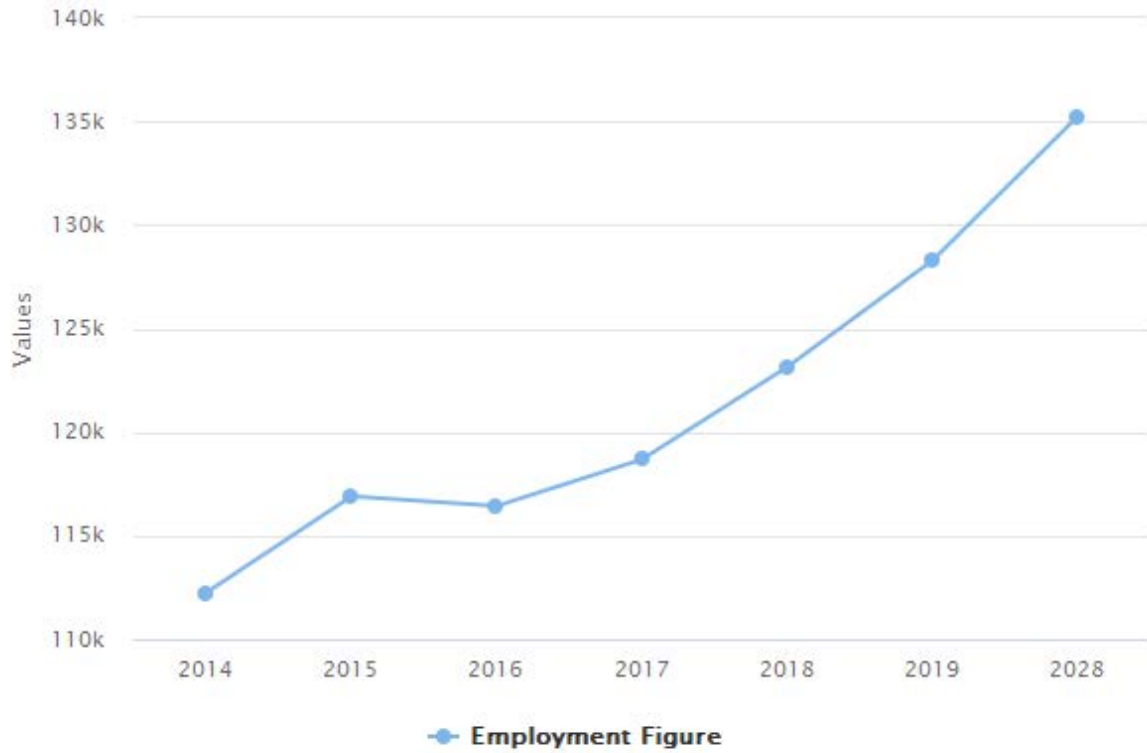
Geography	Selected Occupations	Total Labor Market	Relative Growth
Selected States	5.42 %	3.73 %	Average
Nationwide	-4.00 %	4.24 %	Low

\* Selected States include Maine, Massachusetts, New Hampshire, Vermont

**How has Employment Changed for Career Outcomes of your Program?**

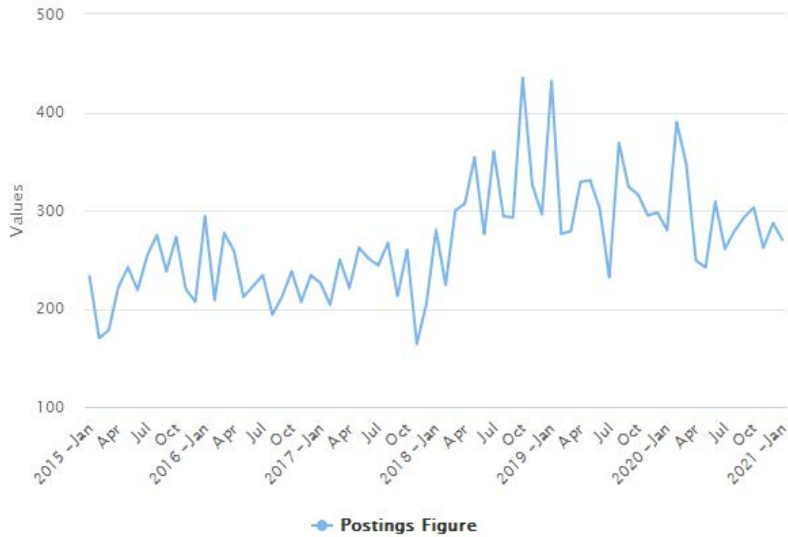
	2014	2015	2016	2017	2018	2019	2028
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Employment (BLS)	112,250	116,900	116,430	118,680	123,140	128,280	135,229
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Employment data between years 2019 and 2028 are projected figures.

### POSTINGS TRENDS

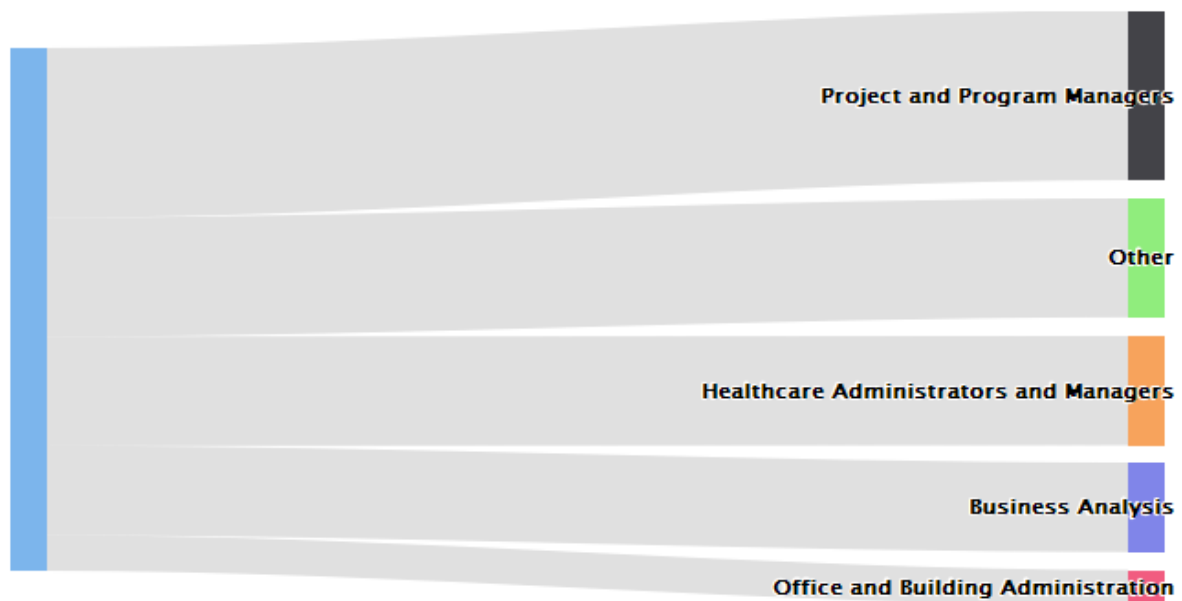


### How Versatile is THIS DEGREE FOR MY GRADUATES?

Graduates of this program usually transition into any of the 11 different occupation groups:

Occupations Group	Market Size (postings)	Percentage of Career Outcome demand
-------------------	------------------------	-------------------------------------

Project and Program Managers	5,036	32.5%
Healthcare Administrators and Managers	3,244	20.9%
Business Analysis	2,652	17.1%
Office and Building Administration	1,058	6.8%
Human Resources Specialists	763	4.9%
Human Services	747	4.8%
General Research	740	4.8%
General Managers	476	3.1%
Policy Analysis and Planning	329	2.1%
Financial Regulation and Compliance	294	1.9%
Operations Managers	180	1.2%



### What Salary will my graduates FIND UPON GRADUATION?

The average salary in **your region** for graduates of your program is **\$69,962**

This average salary is **Above** the average living wage for your region of **\$33,202**



Salary numbers are based on Burning Glass models that consider advertised job posting salary, BLS data, and other proprietary and public sources of information.

\*\* Note: The expected salary visualization has been cropped to display only 10 data points \*\*

<b>Occupation Group</b>	<b>0-2 Years</b>	<b>3-5 Years</b>	<b>6+ Years</b>
Office and Building Administration	\$60033	\$62063	\$70446
Human Services	\$49452	\$56903	\$69648
General Research	\$60054	\$75415	\$96199
Financial Regulation and Compliance	\$66801	\$76786	\$90020
Operations Managers	\$66974	\$72998	\$0
Policy Analysis and Planning	\$62925	\$68943	\$91469
Business Analysis	\$0	\$59495	\$0
Healthcare Administrators and Managers	\$0	\$65356	\$0
General Managers	\$0	\$89085	\$0
Human Resources Specialists	\$0	\$0	\$0
Project and Program Managers	\$0	\$70376	\$0

**COMPETITIVE LANDSCAPE  
PUBLIC AND NONPROFIT MANAGEMENT  
NORTHERN NEW ENGLAND**

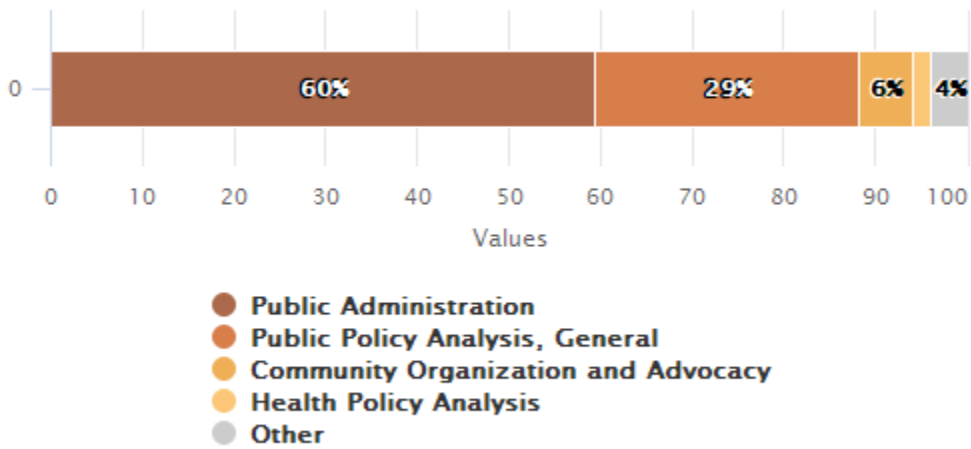
**PROJECT CRITERIA**

Validate	Programs
States	Maine, Massachusetts, New Hampshire, Vermont
Degree Level	Master's degree
Time Period	1/1/2020 - 12/31/2020
Selected Programs	Education Policy Analysis (44.0502), Health Policy Analysis (44.0503), International Policy Analysis (44.0504), Public Policy Analysis, General (44.0501), Public Policy Analysis, Other (44.0599), Public Administration and Social Service Professions, Other (44.9999), Public Administration (44.0401), Community Organization and Advocacy (44.0201), Human Services, General (44.0000)

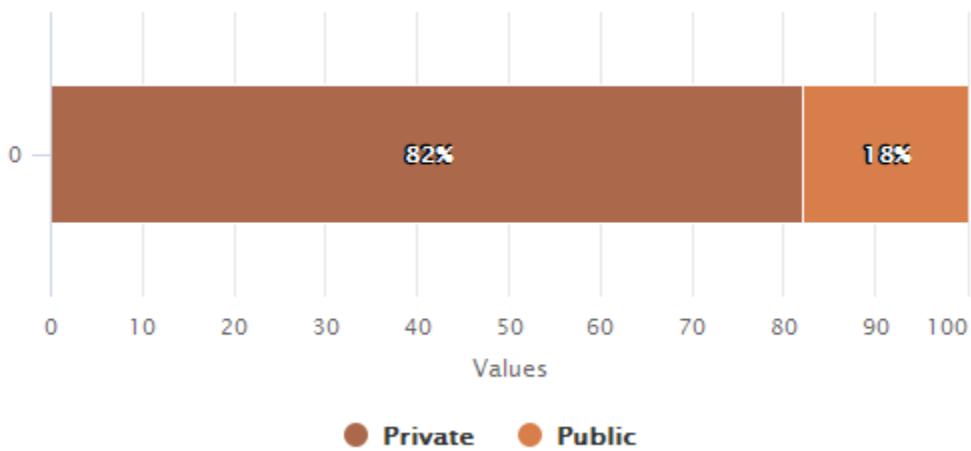
**OVERVIEW**

	#	<b>% Change (2015-2019)</b>
Degrees Conferred	1,216	-18%
Number of Institutions	23	-11%
Average Conferrals by Institution	53	-8.60%
Median Conferrals by Institution	26	18.20%

## MARKET SHARE BY PROGRAM



## MARKET SHARE BY INSTITUTION TYPE



Institution Type	Conferrals (2019)	Market Share (%)
Private	995	81.83%
Public	221	18.17%



## TOP INSTITUTIONS

<b>Institution</b>	<b>School Type</b>	<b>Market Share (2019)</b>	<b>Market Share Change</b>	<b>Conferrals (2019)</b>	<b>Conferrals Change (2015-2019)</b>
Harvard University	Private	47.53%	7.20%	578	-4.50%
Anna Maria College	Private	7.15%	1.95%	87	11.50%
Brandeis University	Private	4.77%	0.24%	58	-14.70%
Clark University	Private	4.52%	-0.35%	55	-24.70%
Suffolk University	Private	4.44%	1.37%	54	17.40%
University of Massachusetts-Boston	Public	3.95%	0.15%	48	-15.80%
Merrimack College	Private	2.71%	2.71%	33	100.00%
University of Southern Maine	Public	2.47%	-1.20%	30	-45.50%
University of New Hampshire-Main Campus	Public	2.38%	1.38%	29	93.30%
Northeastern University Lifelong Learning Network	Private	2.30%	-1.30%	28	-48.10%

**TO:**

**From:** Faye Gilbert, PhD, Executive Dean, Maine Business School & Interim Dean, Graduate School of Business

**Subject:** MaineMBA Concentration Proposal for Outdoor Industry Management

**Date:** March 1, 2020

The Graduate School of Business of the Maine Business School proposes to establish an **Outdoor Industry Management** concentration within the University of Maine Master of Business Administration (MaineMBA).

**Rationale**

Representing an interdisciplinary partnership between the University of Maine and the University of Southern Maine, the MaineMBA concentration in Outdoor Industry Management will deliver graduate level professional education opportunities pairing the curriculum of the MaineMBA with the skills and knowledge necessary for individuals pursuing executive-level careers in outdoor industries.

This proposal has been reviewed and is supported by:

- The faculty of the Graduate School of Business
- The Dean of the Maine Business School and the Graduate School of Business
- The faculty of the XXX
- The Dean of XXX

## **University of Maine Graduate School of Business**

### **Proposal for a MaineMBA concentration in Outdoor Industry Management**

#### **Proposal Contents:**

1. Academic Program Alignment
2. Program Description
3. Learning outcomes
4. Admission Requirements
5. Completion Requirements
6. Course Descriptions

#### **1. Academic Program Alignment**

##### Mission and Goals

- a) The Outdoor Industry Management (OIM) Concentration in the MBA coincides with the Strategic Vision and Values of UMaine, the Unified Accreditation for the University of Maine System, the UMS Transforms initiative, and the emphasis on developing interdisciplinary programs that cross university boundaries. OIM is an example of an area that will impact economic development efforts for the state and workforce development efforts across the region.
- b) The major goal for the concentration is to prepare students to contribute to the growth and sustainability of the outdoor industry in Maine, and beyond.
  - i. Learners will define and enhance the value of the outdoor industry and its contributions to our society and communities while also applying knowledge to protect and grow its assets, ultimately leaving it more valuable for future generations.
  - ii. The Concentration in Outdoor Industry Management (OIM) for the MBA program includes collaborative steps between learners and providers to connect the Graduate School of Business (GSB) to the industry, particularly in Maine, as well as to other programs in law, social policy, and business.

## Program Demand

- a) The outdoor recreation industry is one of the nation's largest economic sectors generating annually \$887 billion in consumer spending, 7.6 million jobs, \$65.3 billion in federal tax revenue, and \$59.2 billion in state and local tax revenue (OIA Economic Report, 2017). For comparison, according to the Bureau of Labor Statistics, the outdoor recreation industry employs more people (7.6M) than the computer technology industry (6.7M). In New England, the outdoor recreation industry generates annually \$89.9 billion in consumer spending, 708,000 jobs, \$7 billion in federal tax revenues, and \$6.7 billion in state and local tax revenues (OIA Economic Report, 2017).

Maine is particularly well positioned to take advantage of the popularity of the outdoor industry. With over 3,500 miles of coastline, the third most visited National Park (3.4 million visits/year), a National Forest, a new National Monument, 32 state parks, several distinctive mountain ranges, the terminus of the popular Appalachian Trail, numerous lakes and rivers, a vast wilderness area, and four distinct seasons, outdoor enthusiasts are finding their way to Maine to both work and play. There are also over 39 outdoor product manufacturers located in Maine and an even larger number of outdoor experience providers (Maine Outdoor Brands, 2021)., There is a real need to develop workers skilled and knowledgeable in the areas most critical to the success of this industry including how to: manage and grow participation, understand and advocate for critical policies, and develop sustainable business practices.

- b) Currently, nationwide, there are only a few graduate programs and/or certificates focused on the outdoor industry. The UMaine MBA Outdoor Industry Concentration both fulfills a need in our local communities and also provides an opportunity to attract students from across the country who are interested in pursuing careers in this field.

## Program Resource Needs

- a) Membership to Maine Outdoor Brands
- b) Membership to the Outdoor Industry Association
- c) As growth occurs, faculty and staff position to enhance connections to learners and practitioners
- d) Internship coordinator, Taylor Ashley at UM, support to reach firms and organizations for potential internship placements
- e) Possibly adjunct or cooperating faculty to cover courses so faculty can teach the new courses developed for this concentration – there is a high level of interest in teaching these courses
- f) Identification of a Professor of Practice or adjunct faculty from industry who may be interested in teaching in this concentration (or a future certificate in this field)

## Delivery Modalities

- Courses are primarily developed and delivered in the asynchronous, online 7/8 week format, with occasional options delivered in online synchronous or on-campus modalities, as needed.
- Internship lengths and/or required hours will be determined on a case-by-case basis and may be longer than 7-weeks and in person or virtual.

## Proposed Course Options by Term

Fall	Spring	Summer
MBA __, Managing and Growing Participation in the Outdoor Recreation Industry (Parker)	BUA __, Analytics of Outdoor Industry Management	MBA __ Internship
MBA __, Internship	LAW 635, Land Use MBA __, Internship	LAW 633, Natural Resources

## 2. Concentration Description

The UMaine MBA OIM Concentration provides an opportunity for advanced education to those seeking employment in the outdoor industry. Built on the UMaine MBA Core (24 credits), the concentration focuses on the areas most critical to the growth and sustainability of the outdoor industry including the analytics of outdoor industry management, sustainable business practices, and managing and growing participation in the industry. Students will select 9-credits of coursework which may include an approved internship within the outdoor industry. The total credits for the MBA with a concentration in OIM is 33-credits.

## 3. Program Learning Outcomes

Upon completion of the concentration, graduate learners will:

- Have knowledge of participation in outdoor industry issues, organizations, and opportunities [measurement – final exam or paper from fall course, rated by others]
- Apply information to inform decision in the outdoor industry [measurement – exercise in the Analytics of Outdoor Industry Management, reviewed by team; Final paper from internship rated by rubric]

## 4. Admission Requirements:

Admission to the MaineMBA concentration in Public and Nonprofit Management will be the same as general MBA admission, with admission requirements including:

- Undergraduate GPA above 3.0
- GMAT scores above 500 or 5+ years professional or military experience
- Satisfactory TOEFL/IELTS scores
- Completed application with supplemental documentation and fees
- Foundational skills in Economics, Accounting, Finance and Statistics

## 5. Completion requirements:

MaineMBA learners pursuing this concentration will complete:

### 24 credits (8 courses) from the MaineMBA Core:

1. BUA 601: Strategic Data Analysis
2. MBA 609: Financial Statement Analysis
3. MBA 626 Management of Contemporary Organizations

4. MBA 637: Global Supply Chain Management
5. MBA 651: Financial Management
6. MBA 670: Managerial Marketing
7. BUA 680: Foundations of Business Intelligence
8. MBA 649: Strategic Decision Making

Completion of three Outdoor Industry Management courses (9 credit hours) from:

- NEW COURSE MBA 5XX—Analytics of Outdoor Industry Management (UM faculty – syllabus attached)
- NEW COURSE MBA 5XX--Managing and Growing Participation in the Outdoor Industry (3-credits) (USM faculty – syllabus attached)
- LAW 635—Land Use (Law)
- LAW 633-- Natural Resources (Law)
- MBA 5XX--Internship (3-credits)

Interest in Outdoor Industry Management and connections with Tourism, Sport Management, and other campuses also have implications for the continued development of course options for the concentration, including:

- Courses that could be developed as demand increases:
  - MBA 5XX—Outdoor Industry Policies
  - MBA 5XX-- Sustainable Business Practices in the Outdoor Industry
  - MBA 5XX--Sport and Outdoor Industry Management

## 6. Course Descriptions

### **BUA 5XX: Analytics of Outdoor Industry Management**

Data informed decisions are a critical component of starting new endeavors or managing existing ones. Building on the success of the Analytics Concentration in the MBA program, this course experience will focus on applications of analysis to the sport and outdoor industry sectors.

### **MBA 5XX: Managing and Growing Participation in the Outdoor Industry**

Participants are the heartbeat of the outdoor industry. However, as participation grows, so does the impact to our natural resources and spaces. This course will examine consumer/participant profiles and behaviors and examine management practices which can mitigate resource damage while also growing responsible participation in the outdoors. Additionally, the course tackles outdoor industry management challenges including risk management/liability, crisis management, creating accessible and inclusive spaces, and outdoor leadership and education.

### **LAW 633: Natural Resources**

This course surveys the laws governing the ownership, conservation, exploitation, and preservation of renewable and non-renewable natural resources, including wildlife, fisheries, wilderness, parks, water, forests, and energy. It examines the constitutional, historical, political, and economic underpinnings of natural resources law and the means by which public policies are formulated, implemented, challenged, and revised.

### **LAW 635: Land Use**

This course examines how land use is regulated and controlled. It begins by discussing why and when government regulation, rather than private market ordering, might be necessary to control land use and development patterns. It considers different regulatory and market-based tools that are available to control land use, including flexibility devices such as transferable development rights, contract zoning, and planned unit development. It then explores land use from the perspective of a project proponent, or developer. It examines the rights that an owner of land has if a particular land use regulation is inefficient, unfairly burdensome, unfairly disruptive of the owner's settled expectations, or an infringement upon the owner's civil liberties. The course then looks at land use issues from the other side, examining the rights of those who oppose the landowner's plans (these project opponents are often neighbors). Finally, the course focuses on particular problems that plague the land use regulatory system, such as exclusionary zoning, the equitable distribution of undesirable land uses, sprawl, and smart growth.

### **MBA 695: Internship**

Field Experience in business relevant to the student's educational development and career goals. Neither past work experience nor field experience courses taken at other campuses or universities may be permitted as substitute. Open only to MBA students. Course may be repeated but student may not earn more than 3 internship credits.

The MBA program will be seeking partners to create internship experiences for students who choose to immerse for a term in applying their skills to an organization in this industry, to land management applications, to retail operations, or other fields that extend experiences in outdoor industry management.

### **Courses for future consideration**

#### **MBA XXX: Outdoor Industry Policies**

There are numerous local, state, and federal policies which have significant impact on the outdoor industry and the future of the outdoor industry. This course will examine federal and state policy decisions significant to climate change, land use (public and private), trade, recreation, and economic development as well as examine local statutes and regulations which impact the outdoor industry. Students will learn how policy decisions have and will continue to shape the outdoor industry; an understanding of how policies are drafted, advocated, enacted, and enforced; and, the importance of policies which support the continued growth and sustainability of the outdoor industry.

#### **MBA XXX: Sustainable Business Practices in the Outdoor Industry**

At the core of the outdoor industry is a commitment to sustainability and a desire to do as little harm to the environment as possible even as we pursue and produce goods and services. This course will delve into the many ways companies and organizations can be responsible citizens of the world, even in their business practices, and support the continued growth and sustainability of the outdoor industry. Topics will include: Materials and chemicals, the circular economy and supply chain, social responsibility, sustainable production, sustainable consumption, and sport ecology (climate change, sustainable buildings and events).

**Potential course development options as demand grows:** Other options to be developed as demand grows: Sport and Outdoor Industry Management-(UM - Das, Myrden); GIS in Outdoor Industry Management (NSFA)



## Burning Glass Summary

### Maine MBA: Outdoor Industry Management Concentration Employment Potential (revised 1.26.21)

- In Maine, in the last 12 months (January 2020 through January 2021), there were **924** job postings in sectors relating to Outdoor Industry Management this compares with **1,145** jobs in the 12 months leading up to the COVID-19 pandemic.
- In Northern New England (ME, NH, VT) during the same time-period (Jan 20 – Jan 21) there were **2,874** (vs **3,295** Jan 2019 – Jan 2020)
- The number of jobs in Northern NE is predicted to **grow** over the next eight years (2020- 2028).
- Between 2014 and 2018 Maine added **3,339 jobs** in this sector - a **10.3% growth rate**.
- Northern NE added **8,313 jobs** – a **9.5% growth rate** overall.
- From 2018 to 2019 the pace of job growth accelerated to **+ 4,467 jobs** in Northern NE – a **14.6% growth rate** overall 2014-2019
- The average salary in Maine for graduates with MBAs in the Outdoor Industry Management sector is **\$94,152** according to Burning Glass.

## Competitive Landscape

- **Portland State University** offers an **Athletic and Outdoor Industry Graduate Certificate** that is: “designed and led by seasoned pros from Nike, Columbia Sportswear, Yakima, Gerber Gear, and other Portland-based companies.” The Graduate Certificate requires four core courses plus an elective and costs \$14,328 (in-state) / \$16,020 (out of state) AACSB accredited

**Press:** “Portland has one of the world’s largest concentrations of athletic and outdoor headquarters, retailers and manufacturers, complemented by an abundance of outdoor recreation opportunities. Coupled with a passionate community and fast-growing industry led by Oregon-based global giants, PSU’s athletic and outdoor program offers a rich proving ground for career exploration.”

- In 2018, **Western Colorado University** introduced a “first of its kind” **Outdoor Industry MBA** (and an accelerated “3+2” pathway) “to equip future leaders with the business acumen, sustainable vision and industry connections needed to raise and run environmentally-conscious companies in the 21st century.” The Outdoor Industry MBA: 36 credits /total cost \$41,774.

**The Program:** This two-year program includes an MBA Core as well as specialized tracks. The Product Concentration has courses in Sustainable Outdoor Product Development and Material Sourcing; Supply Chain and Logistics in the Outdoor Industry; and Sustainable Finance. The Service Concentration has specialized courses in Resort and Hospitality Management, Natural Resource Regulation and Economics, and Sales and Customer Experience.

- **Husson** offers an MBA with a concentration in **Hospitality and Tourism Management**. \$497 per credit hour 36 credit hours for the degree \$17,892.

## Hospitality Sector Data

- *Hospitality Sector Impact Report* (released November 25, 2019) A University of Maine School of Economics report by Todd Gabe and Andrew Crawley finds that the hospitality sector in Maine had a statewide economic contribution, including multiplier effects, of \$6.9 billion in output and \$2.2 billion in labor income in 2018.

### Launching in August 2021

#### University of Colorado Boulder: Outdoor Recreation Economy (ORE)

The outdoor recreation industry is among our nation's largest economic sectors and provides livelihoods for millions of American workers. Nationally, outdoor recreation accounts for 7.6 million jobs and provides \$887 billion in annual consumer spending. The state of Colorado represents a significant piece of the national outdoor economy, supporting 511,000 direct jobs and \$28 billion in annual consumer spending.

Recognizing the increasing importance of the outdoor recreation industry to our state and nation's economy, CU Boulder is launching the **Outdoor Recreation Economy (ORE) program, comprised of six online certificates and a Master's of Science in Outdoor Recreation Economy (MORE). The MORE degree and certificates, which will reside within the Environmental Studies Program and will be administered by the Graduate School, are part of a suite of planned educational offerings in Outdoor Recreation Economy including non-credit and for-credit professional education opportunities, executive education and training, and professional development workshops.**

ORE will launch in August of 2021 as the nation's premier outdoor recreation economy program, leveraging CU Boulder's academic excellence and experience in professional education, as well as the State of Colorado's deep connection with the outdoor recreation economy. [Students can choose from one of six \(10-hour\) online certificates:](#)

1. Introduction to the Outdoor Recreation Economy
2. Public Lands and Natural Resources Policy
3. Outdoor Recreation Economy
4. Sustainability and the Outdoor Recreation Industry
5. Inclusivity and Leadership in the Outdoor Industry
6. Resiliency Management

Students can also choose to pursue a [Master's of Science in Outdoor Recreation Economy \(MORE\)](#) which will consist of 30 credit hours, made up of three of the stackable certificates listed above (each worth 10 credits). \* \$1,002 per credit hr in-state ; \$1,400/ credit hour out of state.

We conceive of the outdoor recreation economy holistically: where innovation is needed across the industry in leadership and sustainable business operations; where appropriate policies and regulations must be created to govern and promote access to public lands and waterways; and where outdoor amenities must be leveraged to grow local, sustainable economies. **The ORE program will provide skills and knowledge to students and learners from a variety of backgrounds who are interested in the outdoor industry, economic development, and the public lands and natural resources policy sectors. The online ORE certificates and MORE graduate degree respond to a national, regional, and local economic growth in the sector and**

**therefore anticipates growing outdoor recreation economy employment demands.** ORE also responds to an increased demand for remote learning opportunities, the needs of working professionals, and increased access to higher education.





## **Proposed Syllabus**

MBA \_\_: Managing and Growing Participation in the Outdoor Industry

MBA 5XX

Asynchronous Online (8 weeks)

3-Credits

### **Course Description:**

Participants are the heartbeat of the outdoor industry. However, as participation grows, so does the impact on our natural resources, spaces, and experiences. This course will examine consumer/participant profiles and behaviors and examine management practices which can mitigate resource damage while also maintaining positive participant experiences and growing responsible participation in the outdoors. Additionally, the course tackles outdoor industry management challenges including risk management/liability, crisis management, creating accessible and inclusive spaces, and outdoor leadership and education.

### **Required Readings:**

- Text book TBD
- Additional readings will be provided by the instructor and include an assortment of articles, case studies, and technical/research reports.

### **UMaine Graduate School of Business Learning Goals:**

1. Problem Solving: Students will be able to recognize, define, analyze, and offer solutions to problems encountered within the outdoor industry.
2. Knowledge: Students will demonstrate competency in general and advanced concepts and processes in the management of our outdoor parks, lands, and natural resources.
3. Communication: Students will demonstrate effective oral and written communication through presentations and written assignments.
4. Teamwork: Students will learn how to develop successful teams and work with and contribute to teams in this course.

### **Course Outcomes/Objectives:**

Upon the completion of this course students will be able to:

- Describe and explain the personal and community benefits of outdoor recreation as well as the impacts of outdoor recreation on our parks, lands, and natural resources.
- Describe and explain outdoor industry participant profiles, behavior trends, and consumption motives.
- Describe, evaluate, and apply outdoor recreation management frameworks in a variety of outdoor contexts, settings and scenarios.
- Analyze outdoor settings and activities through a risk management lens and analyze and apply industry best practices in mitigating risk and liability.
- Recognize and evaluate effective crisis management strategies and plans.
- Understand the importance of creating an accessible, diverse, and inclusive outdoor environment; recognize areas of needed improvement in accessibility, diversity, and inclusion; and, develop strategies to increase accessibility, diversity, and inclusion in the outdoor industry.

- Understand the importance of outdoor stewardship, education, and leadership initiatives in preserving natural resources; Evaluate the effectiveness of outdoor stewardship, education, and leadership initiatives.
- Articulate and demonstrate how effective outdoor management can encourage participation growth while also protecting participant experience and our natural land, water, and space resources.

### **Sample Topical Outline:**

#### **Part 1: Understanding the Outdoor Industry and its Resources**

- Syllabus Overview; Course Introduction
- Land History; Land Acknowledgement
- Land, Water, Space Resources
- Benefits; Impacts of Outdoor Recreation
- Outdoor Recreation Consumers
  - Participant Profiles
  - Growth Areas
  - Trends
  - Consumption Motives; Needs
  - Behavior Trends
- Participant Organization--groups, clubs, private companies,
- Municipalities, social networks, etc.

#### **Part 2: Managing the Outdoor Industry**

- Outdoor Recreation Management Practices & Framework
- Evaluation
- Application
- Risk Management
- Crisis Management
- Liability

#### **Part 3: Growing Responsible Participation**

- Tourism
- Accessibility, Diversity, & Inclusion
- Social Capital
- Social Bridging
- Importance of Stewardship, Leadership, and Education Initiatives
- Planning for the Future: Managing and Growing Participation while
- Preserving Participant Experiences and Natural Resources

#### **Sample Course Assessment:**

- Case Studies
- Peer Feedback; Discussion
- Industry Project; Presentation

#### **University of Maine Policies:**

- Student Conduct Code
- Student Handbook

#### Academic Honesty Statement:

It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University.

Students with disabilities statement:

If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, 581.2319, as early as possible in the term. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with me (the instructor of the course) privately as soon as possible.

Course Schedule Disclaimer:

In the event of an extended disruption of normal classroom activities, the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

Observance of Religious Holidays/Events:

The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.

Sexual Discrimination Reporting:

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination involving members of the campus, your teacher is required to report this information to the campus Office of Sexual Assault & Violence Prevention or the Office of Equal Opportunity. If you want to talk in confidence to someone about an experience of sexual discrimination, please contact these resources: For confidential resources on campus: Counseling Center: 207-581-1392 or Cutler Health Center: at 207-581-4000. For confidential resources off campus: Rape Response Services: 1-800-871-7741 or Spruce Run: 1-800-863-9909. Other resources: The resources listed below can offer support but may have to report the incident to others who can help: For support services on campus: Office of Sexual

Assault; Violence Prevention: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911. Or see the OSAVP website for a complete list of services at <http://www.umaine.edu/osavp/>







**University of Maine  
Graduate School of Business**

**SAMPLE SYLLABUS  
BUA 6XX: Analytics of Outdoor Industry Management**

**Instructor:**

Office Location:

Office Hrs:

**Course Description:**

This course introduces students to a variety of cutting-edge analytical methods that can be applied to outdoor industry management ranging from marketing, customer support, staff management, and risk control for the purpose of supporting data-driven decision making. Students will apply these methods to analyze data commonly observed in the outdoor industry. The course emphasis is on learning valuable data information from the data analysis results and discovering interpretable and meaningful knowledge that can support better business decision making. Mainstream analytical software is used intensively to analyze real business datasets.

Primary Textbook: TBD

**Learning Goals:**

1. Analysis: Students will be able to plan and conduct a data analytics project using popular supervised and unsupervised learning methods
2. Information: Students will demonstrate effective summary of valuable information from the data analysis results.
3. Knowledge: Students will demonstrate competency in discovering meaningful business knowledge from the summarized data information.
4. Communication: Students will demonstrate effective oral and written communication of findings from an analytics project with general business audiences through presentations and written assignments.

**Course Outcomes**

1. Identify relevant data sources for data collection.
2. Recognize and resolve common data quality problems for analytics modeling.
3. Select appropriate analytical techniques based on specific business interests and objectives.
4. Use mainstream programming tools to conduct data analysis.
5. Write a professional business report to effectively communicate findings from the data analysis.

**Sample Schedule**

**Week 1: Business Data Analytics for Outdoor Industry Management**

- Business Analytics Lifecycle
- Analytical Modeling Process
- Data Analytics and Outdoor Industry Management

**Weeks 2-3: Unsupervised Learning**

Unsupervised Learning and Its Applications in Outdoor Industry Management

- Clustering Analysis

- Associate Rule Learning
- Outlier Detection

### **Weeks 4-5: Supervised Learning**

Supervised Learning and Its Applications in Outdoor Industry Management

- Regression-based Learning
- Tree-based Learning
- Networks-based Learning

### **Weeks 6-7: Textual Data Analysis**

Introduction to Text Data Mining and Its Applications in Outdoor Industry Management

- Word Cloud and N-gram Analysis
- Sentiment Analysis
- Latent Topic Modeling

### **Week 8: Class Capstone Project**

#### **UMAINE POLICIES:**

Student Conduct Code

Student Handbook

Student Accessibility Services

Inclement Weather Policy

#### **Academic Honesty Statement:**

It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University.

#### **Students with disabilities statement:**

If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, 581.2319, as early as possible in the term. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with me (the instructor of the course) privately as soon as possible.

#### **Course Schedule Disclaimer:**

In the event of an extended disruption of normal classroom activities, the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

#### **Observance of Religious Holidays/Events:**

The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial

effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.

**Sexual Discrimination Reporting:**

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination involving members of the campus, your teacher is required to report this information to the campus Office of Sexual Assault & Violence Prevention or the Office of Equal Opportunity. If you want to talk in confidence to someone about an experience of sexual discrimination, please contact these resources: For confidential resources on campus: Counseling Center: 207-581-1392 or Cutler Health Center: at 207-581-4000. For confidential resources off campus: Rape Response Services: 1-800-871-7741 or Spruce Run: 1-800-863-9909. Other resources: The resources listed below can offer support but may have to report the incident to others who can help: For support services on campus: Office of Sexual Assault & Violence Prevention: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911. Or see the OSVP website for a complete list of services at <http://www.umaine.edu/osvp/>

**TO:**

**From:**

**Subject:** MaineMBA Concentration Proposal for Geospatial Technology

**Date:** March 1, 2021

The Graduate School of Business of the Maine Business School proposes to establish a **Geospatial Technology** concentration within the University of Maine Master of Business Administration (MaineMBA).

**Rationale**

Representing an interdisciplinary partnership between the University of Maine, the University of Southern Maine, and Maine Geospatial Institute, the MaineMBA concentration in Geospatial Technologies will deliver graduate level professional education opportunities pairing the curriculum of the MaineMBA with the skills and knowledge necessary for a career in the fast-growing sector of Geographic Information Systems. This concentration is designed for individuals pursuing executive-level positions in occupations such as supply chain management, emergency management Biostatistics, defense intelligence, operations, energy and environmental planning, and careers in the physical and social sciences.

This proposal has been reviewed and is supported by:

- The faculty of the Graduate School of Business
- The Dean of the Maine Business School and the Graduate School of Business
- The faculty of XXX
- The Dean of XXX

**University of Maine Graduate School of Business**  
**Proposal for a MaineMBA concentration in Geospatial Technologies.**

**Proposal Contents:**

1. Academic Program Alignment
2. Program Description
3. Learning outcomes
4. Admission Requirements
5. Completion Requirements
6. Course Descriptions

**1. Academic Program Alignment**

**Mission and Goals**

The MaineMBA concentration in Geospatial Technologies has been developed as a partnership between the University of Maine Graduate School of Business and the Maine Geospatial Institute, utilizing courses from the University of Maine and the University of Southern Maine.

The Geospatial Technologies Concentration in the MBA coincides with the Strategic Vision and Values of UMaine, the Unified Accreditation for the University of Maine System, the UMS Transforms initiative, and the emphasis on developing interdisciplinary programs that cross university boundaries.

This program supports the mission and goals of the University of Maine System, the Graduate School of Business, the Muskie School of Public Service, and the Maine Geospatial Institute by preparing students for successful careers in Business Administration with expertise in applying geospatial technologies to answer complex business questions. This program will augment the specialized skillset of those MaineMBA graduates particularly interested in applying this cutting edge technology to business solutions.

**Program Demand**

Jobs for those with geospatial skills include positions for Supply Chain Specialist & Analyst, Logistics Manager, Transportation Analyst, Corporate Development Analyst, Emergency Management Director, Operations Manager, Data/Data Mining Analyst, Data Scientist, GIS

Specialist, Statistician, Policy Analyst, Survey Researcher, Urban/Transportation Planner, Business/Management Analyst, among others.

BurningGlass reports more than 600 jobs posted in Maine requiring graduate level education in Geospatial Technology and related skills over the previous 12 months, with just over 2% growth expected yearly. The average salary within this general sector is \$78,686 within Maine. (See BurningGlass report: appendix a)

“The global geographic information systems (GIS) market size is expected to grow from USD 8.1 billion in 2020 to USD 14.5 billion by 2025 at a CAGR of 12.4% from 2020 to 2025. Development of smart cities and urbanization, integration of geospatial technology with mainstream technologies for business intelligence, growing investments in modern GIS solutions, and increasing accessibility of spatial data and cloud technology are some of the major factors driving the growth of the GIS market.”

([Market and Markets](#), 2020)

### Program Resource Needs

The Geospatial Technologies course sequence is currently being delivered by GSIS – no new courses have been developed. The courses are coordinated through their local campus academic home departments and the Maine Geospatial Institute.

### Delivery Modalities

- Courses are primarily developed and delivered in the asynchronous, online 7/8 week format, with occasional options delivered in online synchronous or on-campus modalities, as needed.
- Internship lengths and/or required hours will be determined on a case-by-case basis and may be longer than 7-weeks and in person or virtual.

### Proposed Course Options by Term

Fall	Spring	Summer
SIE XXX	SIE XXX	SIE XXX

## 2. Program Description

Geospatial technologies provide us the ability to map, visualize, and analyze geo-enabled data. Geographic information systems, satellite imaging, geo-visualization technologies, and global positioning systems, among other integrated geospatial technologies, provide us the tools to address complex societal, business and environmental challenges. The spatial revolution in information and communications technologies, allows gathered and available location information to be a key variable in decision making. Location information analysis guides business decisions, market intelligence, real estate development, smart transportation, routing technologies, retail and brand preference, supply chains, manufacturing and distribution networks, and many other aspects of business intelligence. Geospatial technologies provide data and analytical capabilities indispensable to the



business world, and forecasts suggest that these are anticipated to increase in their relevance.

Examples of Business applications (Excerpts from: Ball, M. (2017) The Enterprise Technology behind Big Business Decisions)

- *Consumer goods manufacturers are using GIS and spatial analytics to track social media activity, spotting brand preferences in certain areas of the country and spending their marketing budgets more efficiently.*
- *Insurers are using GIS-based hot-spot analysis—a form of artificial intelligence—to find trends in big data that the human analyst can't see, helping them price risk more effectively.*
- *City planners are leveraging the 3D mapping capabilities of GIS to visualize the design of smart cities, saving time over conventional methods and exposing opportunities for innovation. Meanwhile, retailers are using lidar to map their stores, and technologies like Li-Fi to understand shoppers' preferences—all with the help of GIS.*
- *UPS has become a master of GIS-based optimization. From the early days of its founders to today's innovations, the company and its engineers have leveraged operational analytics to pioneer many efficient approaches to goods delivery.*
- *At one of the five fastest-growing restaurant chains in the country, GIS supports core business activities, including optimizing site selection for new locations and maximizing individual store performance—while minimizing the impact of competition.*

### **3. Program Learning Outcomes**

Upon completion of the concentration, learners will:

- Have knowledge of Geospatial Technologies and their application within organizations to positively impact organizational outcomes.
- Apply GIS technologies to develop and apply applications to business opportunities and challenges.

### **4. Admission Requirements:**

Admission to the MaineMBA concentration in Geospatial Technologies will be the same as general MBA admission, with admission requirements including:

- Undergraduate GPA above 3.0
- GMAT scores above 500 or 5+ years professional or military experience
- Satisfactory TOEFL/IELTS scores
- Completed application with supplemental documentation and fees
- Foundational skills in Economics, Accounting, Finance and Statistics

### **5. Completion requirements:**

MaineMBA learners pursuing this concentration will complete:

**24 credits (8 courses) from the MaineMBA Core:**

1. BUA 601: Strategic Data Analysis
2. MBA 609: Financial Statement Analysis
3. MBA 626 Management of Contemporary Organizations
4. MBA 637: Global Supply Chain Management
5. MBA 651: Financial Management
6. MBA 670: Managerial Marketing
7. BUA 680: Foundations of Business Intelligence
8. MBA 649: Strategic Decision Making

**Nine Credits (3 courses) of Geospatial Technologies Concentration Courses:**

1. GEO 608: GIS Applications I (USM) OR  
     UM ANT: 521 GIS Applications I (UMaine) OR  
     SIE 509: Principals of Geographic Info Systems (UMaine)
2. SIE 510 Geographic Information Systems Applications (UMaine)
3. SIE 557 Database Systems Applications (UMaine)

**6. Course Descriptions**

**GEO 608 GIS Applications I – University of Southern Maine**

Students are introduced to vector-based geographical information systems (GIS). Topics include overviews of geospatial technologies, spatial analysis, GIS data, system operation, the interpretation of results, and professional practices. The course comprises a weekly lecture and laboratory. Students are evaluated with tests, laboratory assignments, and on the basis of a substantial project. Cr 3.

**ANT 521 Geographic Information Systems I – University of Maine**

Students will build an understanding of the fundamentals of a GIS through lecture, readings, and computer activities. Students will learn to use a specific GIS software system, ArcGIS, and to define and complete a simple GIS project using existing data. This computer-intensive course includes a detailed discussion and related computer activities on the following topics: basic geography and map concepts, what a GIS is, data sources, data quality, databases, data classification, vector and raster data, spatial analysis, project management, cartographic communication, projections, datums, coordinates, and ethics. Cr 3.

**SIE 509 Principles of Geographic Information Systems – University of Maine**

Covers foundation principles of geographic information systems, including traditional representations of spatial data and techniques for analyzing spatial data in digital form. Combines an overview of general principles associated with implementation of geographic information systems and practical experience in the analysis of geographic information. Not open to those who have taken SIE 271. Prerequisite: Graduate standing or instructor permission. Cr 3.

**SIE 510 Geographic Information Systems Applications – University of Maine**

Introduces both conceptual and practical aspects of developing GIS applications. Covers application areas from natural resource planning through transportation, cadastral and land information systems and their spatial modeling requirements, and application

development from requirement analysis to database design and implementation.  
Prerequisite: SIE 509 or Instructor permission. Cr 3.

**SIE 557 Spatial Database Systems – University of Maine**

Study, design, and implementation of object-rational database system applications. Introduction to database systems. Integrating database systems with programs. Web applications using database systems. Final database project. Prerequisites: Graduate standing or instructor permission. Cr 3.

## BURNINGGLASS REPORT: EMPLOYMENT POTENTIAL GIS MBA CONCENTRATION (MAINE)

### Project Criteria

Validate	Occupations
States	Maine
Degree Level	Master's degree
Time Period	1/1/2020 - 12/31/2020
Selected Bgt Occupations	BGT Occupation, Cargo Coordinator / Freight Forwarder, Dispatcher, Inventory / Supply Specialist, Inventory Associate, Order Processor / Order Entry Clerk, Scheduler / Operations Coordinator, Shipping / Receiving Clerk, Logistician / Supply Chain Specialist, Logistics / Supply Chain Analyst, Supply Chain / Logistics Manager, Transportation Supervisor, Warehouse / Distribution Supervisor, Corporate Development Analyst / Manager, Emergency Management Director, Operations Manager / Supervisor, Quality Control Systems Manager, Storage / Distribution Manager, Transportation Manager, Actuary, Biostatistician, Data / Data Mining Analyst, Data Scientist, Geographer / GIS Specialist, Mathematician, Security / Defense Intelligence Analyst, Statistician, Clinical Research Coordinator / Manager, Epidemiologist, Medical Scientist, Economist, Industrial-Organizational Psychologist, Policy Analyst, Survey Researcher, Urban / Transportation Planner, Business / Management Analyst, Business Continuity Planner / Analyst, Operations Analyst, Pricing Analyst, Alternative Energy Manager, Energy Analyst / Auditor, Energy Efficiency Specialist, Recycling Coordinator, Sustainability Specialist, Water Resource Specialist, Environmental Planner / Scientist, Geologist, Hydrologist, Meteorologist, Archeologist, Natural Science Research Manager, Researcher / Research Associate, Social Science Researcher, Chemist, Geophysicist, Physical Scientist, Physicist, Biological Technician, Chemical Technician, Environmental Technician, Physical / Geoscience Technician

### How Many Jobs are there for Graduates OF THIS PROGRAM?

For your project criteria, there were **686** job postings in the last 12 months.

Compared to:

- 79,106 total job postings in your selected location
- 6,981 total job postings requesting a Master's degree in your selected location

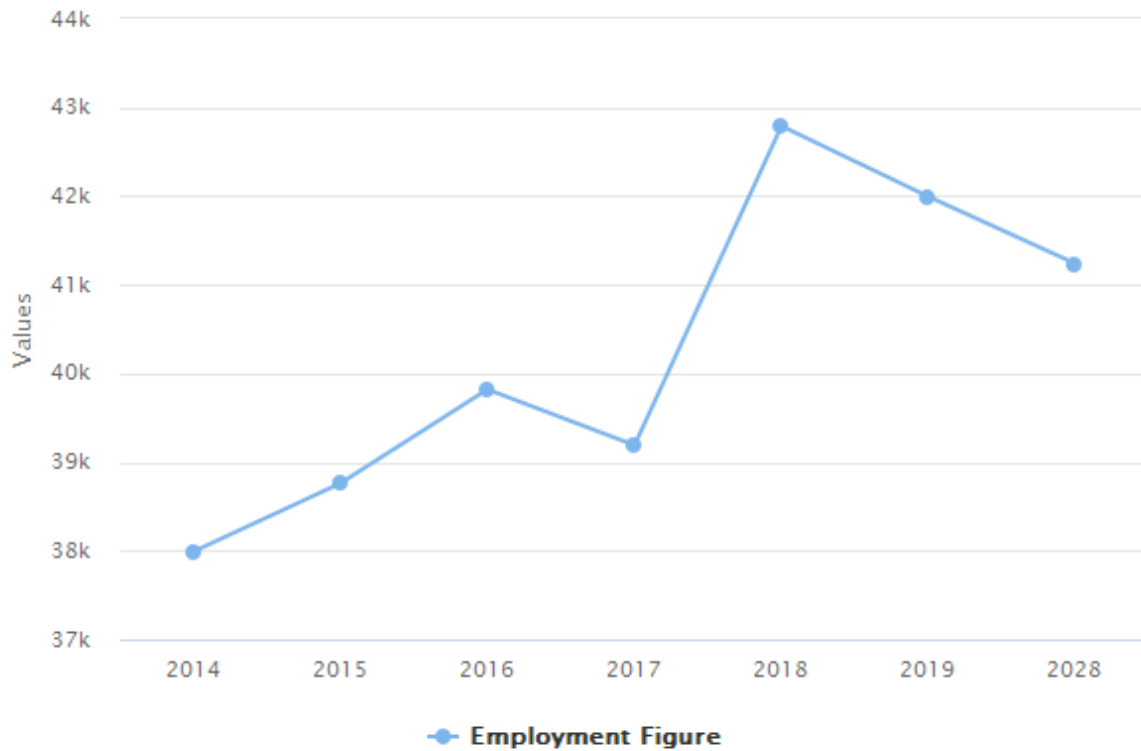
The number of jobs is expected to **stay the same** over the next 10 years.

### Growth by Geography

Geography	Selected Occupations	Total Labor Market	Relative Growth
Maine	-1.80 %	-1.96 %	Average
Nationwide	2.25 %	4.24 %	Average

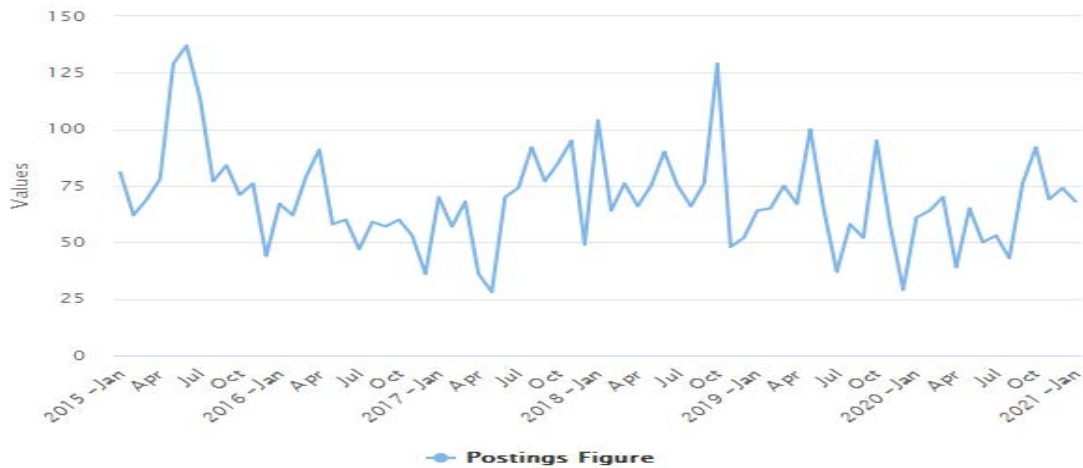
### How has Employment Changed for Career Outcomes of your Program?

	2014	2015	2016	2017	2018	2019	2028
Employment (BLS)	37,990	38,760	39,820	39,190	42,790	41,994	41,237



Employment data between years 2019 and 2028 are projected figures.

### POSTINGS TRENDS



## Details by Occupation

Occupation Group	Postings	LQ	Employment (2019)	Employment Growth (2018 - 2019)	Projected Employment Growth (2019-2028)
Business Analysis	142	0.4	6,683	11.9%	-7.20%
General Research	116	0.7	830	7.8%	3.40%
Operations Managers	115	0.5	14,800	-3.2%	3.60%
Data Analysis and Mathematics	103	0.4	1,491	-10.7%	17.70%
Health and Medical Research	66	0.5	430	-10.4%	17.20%
Logistics and Operational Support	48	1.3	14,560	3.0%	-4.00%
Environmental and Climate Science	23	1.0	630	3.6%	-1.40%
Policy Analysis and Planning	18	0.4	160	0.0%	5.60%
Scientific Technicians	16	0.5	660	-4.3%	8.60%
Chemical and Physical Science	13	0.3	360	26.9%	-16.70%

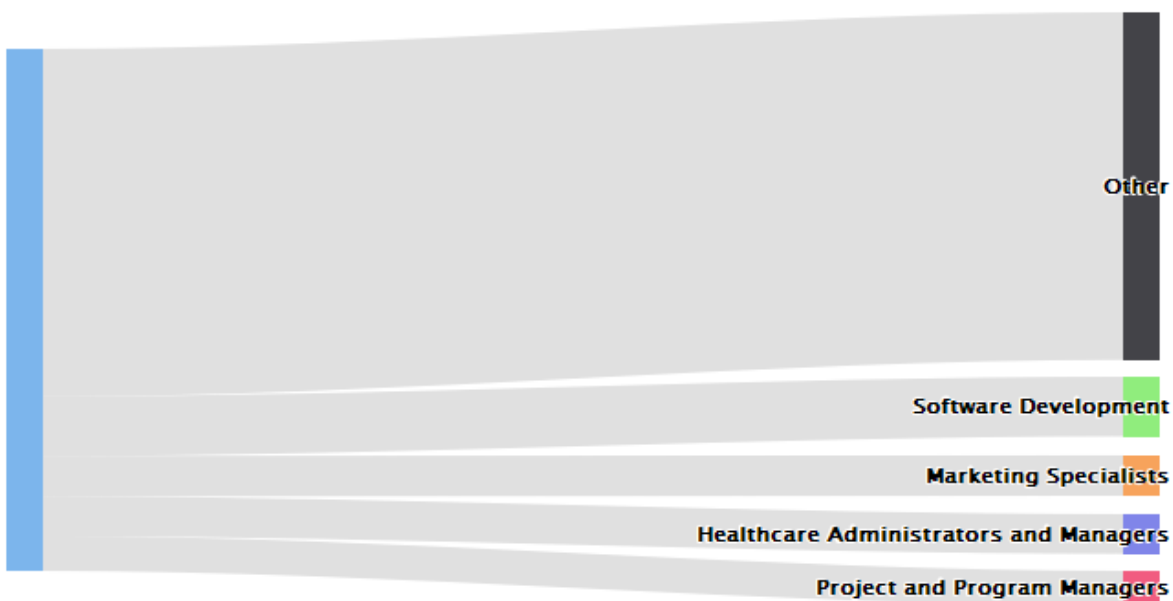
## How Versatile is THIS CAREER FOR MY GRADUATES?

Graduates of this program usually transition into any of the 46 different occupation groups:

Occupations Group	Market Size (postings)	Percentage of Career Outcome demand
Software Development	296	11.4%
Marketing Specialists	201	7.7%
Healthcare Administrators and Managers	197	7.6%

Project and Program Managers	173	6.7%
Business Analysis	142	5.5%
Network and Systems Engineering	120	4.6%
General Research	116	4.5%
Operations Managers	115	4.4%
General Managers	110	4.2%
Data Analysis and Mathematics	103	4.0%
Sales Managers	93	3.6%
Civil and Safety Engineering	78	3.0%
Database Specialists	77	3.0%
Financial Analysis	69	2.7%
Diagnostic Technologists and Technicians	69	2.7%
Health and Medical Research	66	2.5%
Business Intelligence	51	2.0%
Logistics and Operational Support	48	1.9%
Procurement	41	1.6%
Financial Regulation and Compliance	38	1.5%
Instructional and Curriculum Design	35	1.3%
Rangers and Foresters	32	1.2%
Biological Science	30	1.2%
Production Managers	29	1.1%
Customer Service Managers	27	1.0%
Occupational Safety and Compliance	24	0.9%
Environmental and Climate Science	23	0.9%
Front-End Application Design	21	0.8%
Clinical Laboratory Technologists and Technicians	18	0.7%
Policy Analysis and Planning	18	0.7%
Construction Managers	18	0.7%
Scientific Technicians	16	0.6%
Chemical, Biomedical, and Related Engineering	14	0.5%
Chemical and Physical Science	13	0.5%
Law Enforcement and Public Safety	13	0.5%
Healthcare Administrative Support	12	0.5%
Civil Engineering Technicians	11	0.4%

Energy and Sustainability Specialists	10	0.4%
Quality Assurance	9	0.3%
Logistics and Supply Chain Managers	7	0.3%
Laborers and Warehouse Workers	4	0.2%
Health IT Professionals	3	0.1%
Insurance Claims and Sales	3	0.1%
Fire Safety	1	0.0%
Energy Sales	0	0.0%
Legal Professionals	0	0.0%

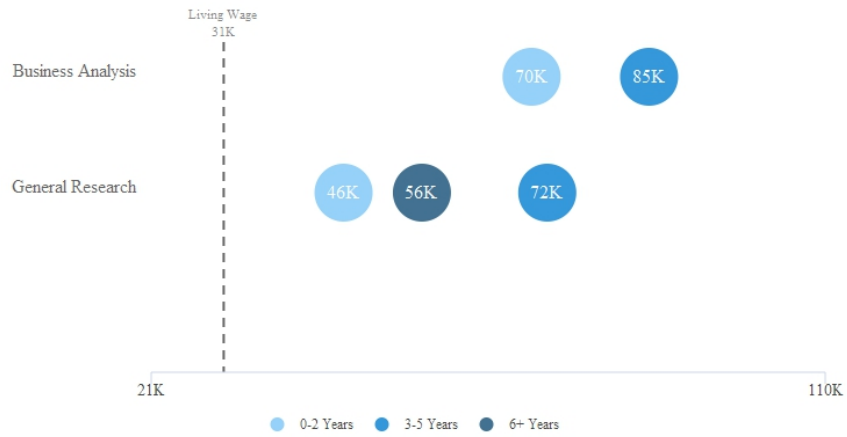


## What Salary will my graduates FIND UPON GRADUATION?

The average salary in **Maine** for graduates of your program is **\$78,686**

This average salary is **Above** the average living wage for Maine of **\$30,701**





Salary numbers are based on Burning Glass models that consider advertised job posting salary, BLS data, and other proprietary and public sources of information.

\*\* Note: The expected salary visualization has been cropped to display only 10 data