

Bachelor of Science in Tourism,
Convention, and Event Management, with
an Emphasis in Sports Management

and

Master of Science in Informatics,
Sports Analytics Specialization

School of Physical Education and Tourism
Management

Indiana University School of Informatics
and Computing at IUPUI

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Provost

Date

Proposal Summary

The Indiana University School of Physical Education and Tourism Management and the Indiana University School of Informatics and Computing at IUPUI proposes an five-year integrated BS/MS degree program in which students receive both the Bachelor of Science (BS) in Tourism, Convention, and Event Management with a Sports Management emphasis and the Master of Science (MS) in Informatics with a Specialization in Sports Analytics. The BS and MS are existing degrees and Sports Analytics is a new specialization within the MS. By designing a curriculum that transitions seamlessly from the BS in Tourism, Convention, and Event Management to the MS in Informatics, it is expected that the program will graduate students who meet all of the requirements for both degrees. The integrated degree program is also expected to enhance student recruitment and retention for both Schools. The proposed program is unique and distinctive compared with offerings at other institutions.

IUPUI's vision is to be one of the best urban universities, recognized locally, nationally, and internationally for its achievements—and already serves as Indiana's premiere urban research and academic health sciences campus. The campus' mission is to advance the State of Indiana and the intellectual growth of its citizens to the highest levels nationally and internationally through research and creative activity, teaching and learning, and civic engagement. With its strong commitment to teaching and research, IUPUI promotes the educational, cultural, and economic development of central Indiana and beyond, offering a distinctive range of bachelor's, master's, professional, and Ph.D. degrees.

Consistent with IUPUI's vision and mission, the proposed program will provide students with intensive training and opportunities to perform supervised research. The primary benefit to students is the option to receive two degrees in a shorter time than it would take to pursue the degrees separately. This application proposes a five-year fully integrated curriculum, including undergraduate and graduate level courses, which will aid the students in developing a frame of mind and a set of tools that enable them to apply fundamental informatics principles to solve real-world problems in advanced application areas. Students who complete the program will have higher credentials and be able to contribute more quickly and effectively to their employer's mission. The five-year integrated BS/MS program has several salient features that are attractive to prospective students; better career opportunities; provides both breadth (BS) and depth (MS) of informatics fundamentals and application skill set; better starting salary upon completion of the program; better career growth opportunity; and, better prepared to meet the employment opportunities and challenges. Such an innovative program is important for

attracting domestic students to graduate studies, especially from central Indiana and the city of Indianapolis.

By its condensed nature, the School of Physical Education and Tourism Management expects to attract BS students who are ready to commit to a serious and intensive course of study. Both schools expects the matriculation of these students will serve to enhance the quality of both the undergraduate and graduate degree programs in which they are enrolled. A sample program of study is included at the end of this document.

Degrees to Be Conferred

Successful students will leave this program with two degrees: a BS in Tourism, Convention, and Event Management with a Sports Management emphasis and an MS in Informatics with a Specialization in Sports Analytics. Both the BS and MS degrees currently exist. Sports Analytics is a new specialization within the MS.

Rationale and Demand for this Integrated Degree Program

The field of sports analytics has boomed in the last decade. Data analytics (or data science) as applied to sports can be used to study the performance of players, coaches, and officials on the field to better manage decision making in athletic contests, or it can be used in the board room to make more informed business decisions. Made famous by the book and blockbuster Hollywood film *Moneyball*, sports performance analytics helps athletes and coaches maximize performance by synthesizing trends in sports statistics. Sports business analytics is used by marketing and sales directors to better understand consumer and corporate purchase intentions and decisions. A niche academic industry has cropped up to support this increasingly important area. Examples include the *Journal of Sports Analytics*, MIT Sloan Sports Analytics Conference, Sports Analytics Innovation Summit, and Society for American Baseball Research Case Competition. Data analytics positions are among the fastest growing in the sport industry. In fact, data analytics positions in sport organizations have increased 41% since 2011 (Teamwork Online Industry White Paper, 2014).

In Central Indiana, the increase in job growth in computer-related occupations is outpacing job growth in all areas 7.3% to 2%. Regionally and nationally the demand for skilled IT workers creates challenges for organizations. The Accenture 2013 Skills and Employment Trends Survey of 400 executives at large US companies reported that, among those who have or expect to face a skills shortage, the biggest demand is for IT skills (44%). One of the main reasons for a continued skills shortage is a lack of qualified candidates (38%).

The TECNA 2013 National Survey of Technology, Policy, and Strategic Issues surveyed over 1700 IT and business executives from industries including IT, finance, healthcare, media, education, life sciences, and telecommunications from across the United States and reported similar shortages of workers with the necessary IT skills to meet their needs. These organizations report they are expecting year over year shortages of workers to fill their open positions ranging from 25% to 44%.

In 2010, 1.2 zettabytes of digital data were produced, and that number is expected to grow to by a factor of 30 by 2020 (IDC Digital Universe Study, April 2010). Demand for talent in data science (data analytics) is projected to exceed supply by 50–60% by 2018. (McKinsey Global Institute. *Big Data: The Next Frontier for Innovation, Competition and Productivity*. May, 2011.)

Nationally, the Bureau of Labor Statistics (BLS) projects that for all “Computer and Mathematical Applications,” the U.S. will see an increase of 18% between 2012 and 2022—or approximately 685,800 additional jobs. While the Bureau of Labor Statistics does not track information professionals specifically, it does track the industry code for “Computer and Information Systems Managers” within the “Computer and Mathematical Applications” category. For this industry code, the BLS expects an increase of 15.3%, or 97,100 jobs. Finally, at the local level, Indiana’s Department of Workforce Development expects that, by 2018, Indiana will see an increase of 1.5% or 604 additional jobs in the Information sector. Within this sector, jobs are shifting away from Publishing Industries (–4.7%) and Telecommunications (–3.9%) to informatics-related areas, such as Internet Service Providers, Web Search Portals, and Data Professionals (+52.2%).

In its *Technology Workforce Report: Employment Trends and the Demand for Computer-Related Talent in Central Indiana*, the Central Indiana Corporate Partnership (CICP) found that computer-related occupations were one of only two occupational groups in Central Indiana that are growing faster than the national average—at 7.3% locally as compared with 6.4% nationally. Indeed, *Forbes* magazine’s November 2013 issue included a story on “The Surprising Cities Creating the Most Tech Jobs”—an article that included Indianapolis–Carmel in the top 10 such cities. The article went on to speculate that, because of lower costs, cities like Indianapolis had potential to attract more investment in technology.

Recent research by the McKinsey Global Institute (2011) forecasts a 50–60% gap between the supply and demand of people with deep analytical talent. These data scientists will have advanced training in statistics, data mining, or machine learning as well as the ability to analyze large datasets. The study projects approximately 140,000 to 190,000 unfilled

positions of data science experts in the U.S. by 2018 and a shortage of 1.5 million managers and analysts who have the ability to understand and make decisions using big data.

An important part of the Master of Science in Informatics curriculum is big data analytics and technologies. It is predicted that by 2018, in the United States 4 million positions will require these types of skills in almost all application areas. However, if we add together the number of people with these skills and new graduates who will enter the market based on current trends, we reach a total of only 2.5 million people in the United States in 2018. So there is a potential shortfall of 1.5 million data-savvy managers and analysts. Vesset et al. (2012) project rapid and substantial growth in this domain over the next three to years, they expect the big data technology and services market to grow from \$3.2 billion in 2010 to \$16.9 billion in 2015. This represents a compound annual growth rate (CAGR) of 39.4% or about seven times that of the overall information and communication technology (ICT) market.

The Indiana University School Physical Education and Tourism Management seeks to partner with the School of Informatics and Computing to develop the first BS/MS degree specializing in Sports Analytics in the United States. Both schools are well positioned to provide innovative strategies to meet the needs of the changing education consumer. The five-year integrated BS/MS program will provide a seamless integration of broad-level Sport Management background in the BS program followed by acquiring a deeper application level understanding in Sports Analytics during the MS course work. This would make our graduates the perfect *informaticians*, essentially professionals with a good IT and management background as well as the deeper knowledge on how to apply this in various application areas ranging from sports performance to business analytics. The proposed five-year integrated BS/MS degree program is expected to attract both the high quality American student responding to the need to complete two degrees while minimizing costs—and to international students (who are similarly) seeking to minimize the considerable costs associated with living abroad while completing a degree program in the United States. The proposed program will benefit both of these student cohorts while minimizing the investment of time and financial resources necessary to fulfill the degree requirements.

The MS in Informatics provides core competencies in data analysis, data management and infrastructure, client–server application development, and ethical and professional management of informatics projects. The Data Science Specialization provides additional competencies in the management of massive, high-throughput data stores, cloud computing, and the data lifecycle, leading to the following careers: Data Scientist, Informatics Scientist, Data Analyst, Big Data Consultant, Business Intelligence Analyst,

Business Technology Analyst, IT Consultant, Software Developer, Database Administrator, System Administrator, Web Administrator, Information Architect, and Information Manager.

Objectives of the Integrated Degree Program

The proposed integrated-degree program will provide both intensive education and supervised research opportunities to high quality students who are serious about committing to this unique program. The students will receive two degrees in a relatively shorter time period than it would take to pursue the degrees separately. The proposed program will help the IU School of Physical Education and Tourism Management to recruit and retain superior students who will receive both BS and MS degrees in five years.

Proposed Program Structure

A. Admission requirement. Students will be admitted to the IU School of Physical Education and Tourism Management under the guidelines that currently exist for admitting traditional BS students. The sequence of courses that they will take for the first three years will be identical to the courses taken by the traditional Sports Management majors. The students will be made aware of the option to pursue the integrated degree program during their first year, and counseled appropriately if they wish to pursue it. It must be emphasized that the program is not meant for every Sport Management student; rather, it is intended for those whose track record demonstrates a capacity to undertake the academic rigor necessary to be successful in the program. Therefore, the School anticipates that only highly motivated students would be counseled to enter the integrated degree program.

Students interested in applying for the integrated degree program will do so during the sixth semester into their BS program.

Candidates for final admission to the graduate program will be expected to have a) successfully and fully completed the degree requirements for the BS in Tourism, Convention, and Event Management, b) met the minimum 3.0 (undergraduate) GPA requirement and c) received at least a B grade in each of the graduate courses undertaken as part of his/her BS plan of study (see sample plan of study, semesters seven and eight). Admission is selective: the Graduate Admissions Committee evaluates applicants' abilities to succeed academically and their potential to contribute to the program.

B. Degree Requirements. The proposed curriculum includes all core undergraduate courses required for Sports Management BS majors and all graduate course required for the Informatics MS program.

To be conditionally admitted to the program, students will be required to maintain a minimum GPA of 3.0 for the first 75 credit hours of coursework (normally the end of fifth semester) in the plan of study.

The total credit hours required for this integrated degree program will be 138 for those students awarded the BS/MS.¹ For reference, the Bachelor of Science in Tourism, Convention, and Event Management requires 120 hours and the MS in Informatics requires 30 hours, for a total of 150 hours. The integrated program is constructed to exploit an overlap economy, thereby reducing the number of required hours to 138 hours. Specifically, the undergraduate BS in Tourism, Convention, and Event Management requires a minimum of 16 hours of general electives. The proposed reduction in total credit hours is made possible by replacing 12 of those 16 elective credit hours with graduate-level courses from the Informatics MS program. These substitutions occur in the 7th and 8th semesters of the student's BS program.

Successful completion of the graduate program requires at least a B average over all the courses counting towards the MS degree and the student must maintain a GPA of 3.0. Courses with a grade of B– or less must be retaken to count towards the MS degree. The minimum grade that will be accepted in any single MS course is B–.

C. Scope and Size of the Program. The program should be attractive to Sports Management students. During the initial years, it is expected that the program will attract at least five students per year for a period of four years. This will increase to ten students per year during the following years. The first group of students will graduate after the fifth year following the start of the program.

D. Administrative Structure. There will be two plans of study for students in this program:

1) a BS plan of study that will be filed no later than one semester before completing the BS degree requirements (normally in seventh semester), and will include the 12 credit hours of graduate courses to be taken in place of the undergraduate general electives, and 2) an MS plan of study that will be completed after the completion of the BS plan of study (normally in ninth semester).

¹ 120 cr. BS in Tourism, Convention, and Event Management + 30 cr. MS in Informatics – 12 cr. undergraduate electives = 138 cr.

The two plans of study to be maintained are attached to this document, where the four overlapping courses (12 credit hours) are to be indicated in both BS and MS plans. Granting of the BS diploma will be delayed until the MS is completed, unless the student withdraws from the program. A sample plan illustrating a semester-by-semester distribution of the courses is also attached.

A minimum GPA of 3.0 will be required in the MS plan of study for graduation as in the traditional master's program. The master's GPA will be calculated by including the grades of the four graduate courses undertaken as part of the BS plan of study.

The program is designed such that a student in the program will be able to switch to the traditional BS in Tourism, Convention, and Event Management program at any time to receive a BS in Tourism, Convention, and Event Management degree.

The Graduate Committee will review each student's performance each semester after they are conditionally admitted to the integrated-degree program.

Following the conditional admission, the student's performance will be assessed by the Graduate Admissions Committee at the end of each semester to ensure that the student's performance is at the level expected for traditional MS students in the Informatics graduate program and the grades in each master's course in the BS plan of study are B- or higher.

Students will receive the BS upon completion of 120 credit hours, which include the General Education Core (30 cr.), required BS core, and four graduate courses (12 cr.). As previously described, a student who decides to leave the program will still be eligible to receive a BS degree. Also, if the student's performance is judged by the Graduate Committee to be unsatisfactory for the integrated degree program in that the minimum grade requirements (minimum 3.0 undergraduate and graduate GPA and minimum B- grade in the graduate courses) are not met, the student will still be able to receive a BS in Tourism, Convention, and Event Management upon completion of all the requirements for that degree.

This degree program will be offered only on the IUPUI campus.

Sustainability and Impact on the State and Region

The proposed program requires no additional resources and financial support from the school and campus. The key to the success of the program is to make students (prospective students) aware of the availability of the program when they enter the undergraduate Tourism, Convention, and Event Management program. The seamless transition from undergraduate to graduate programs will greatly reduce the time needed to complete the two degrees as compared with traditional,

separate BS and MS degree programs. This proposed program is, therefore, economical and sustainable in the long run.

As our city, state and nation move towards a technology-based, high-tech economy, we continue to see a critical need for well-educated, trained, high quality informaticians with advanced graduate degrees. We fully expect these program graduates with advanced degrees to have a major impact on central Indiana, the state of Indiana, and the greater Midwest.

Staffing and Infrastructure. Because the program uses existing courses, faculty, and facilities, no additional resources are required.

MS in Informatics Program-level Student Learning Outcomes

1. Students will demonstrate competency in **data science**.
 - Design and execute ethical research using quantitative and experimental methods.
 - Organize, visualize, and analyze large, complex datasets using descriptive statistics and graphs to make decisions.
 - Apply inferential statistics, predictive analytics, and data mining to informatics-related fields.
 - Analyze datasets with supervised learning methods for functional approximation, classification, and forecasting and unsupervised learning methods for dimensionality reduction and clustering.
 - Identify, assess, and select appropriately among data analytics methods and models for solving a particular real-world problem, weighing their advantages and disadvantages.
 - Write programs to perform data analytics on large, complex datasets.
2. Students will demonstrate competency in **data management and infrastructure**.
 - Design and implement relational databases using commercial database management systems according to database concepts and theory.
 - Diagram a relational database design based on an identified scenario.
 - Produce database queries using SQL.
 - Perform database administration tasks.
 - Describe the data management activities associated with the data lifecycle.
 - Overcome difficulties in managing very large datasets, both structured and unstructured, using nonrelational data storage and retrieval (NoSQL), parallel algorithms, and cloud computing.
 - Apply the MapReduce programming model to data-driven discovery and scalable data processing for scientific applications.
3. Students will demonstrate competency in **client–server application development**.
 - Design and implement client–server applications that solve real-world problems.
 - Design, implement, test, and debug programs in object-oriented and scripting languages involving control constructs, variables, expressions, assignments, I/O, functions, parameter passing, data structures, and modularization.

- Apply software development methodologies to create efficient, well-structured applications that other programmers can easily understand.
 - Design user-friendly web and mobile interfaces.
 - Implement the model-view-controller software pattern in web and mobile user interfaces.
 - Create well-formed static and dynamic webpages using current versions of HTML, CSS, and JavaScript or their equivalents.
 - Diagram the phases of the Secure Software Development Lifecycle.
 - Demonstrate the techniques of defensive programming and secure coding.
4. Students will demonstrate competency in the **ethical and professional management of informatics projects**.
- Apply project management methods to overcome the complexities of informatics projects.
 - Plan informatics projects, setting their scope and assigning team members appropriately to roles.
 - Apply to informatics projects time management concepts, such as network diagrams, CPM, and PERT.
 - Apply cost management and budgeting principles.
 - Manage unanticipated changes in informatics projects.
 - Perform risk analysis by means of quantitative and qualitative methods.
 - Employ both “hard” and “soft” skills in leading a project team.
 - Use project management software effectively.
 - Apply communication, negotiation, and group decision-making abilities in team projects.
 - Demonstrate ethical and professional behavior in response to ethically challenging situations.
5. Students will demonstrate competency in the **management of massive, high-throughput data stores, cloud computing, and the data lifecycle**.
- Demonstrate an understanding of the data lifecycle, including data curation, stewardship, and long-term preservation.
 - Explain the main concepts, models, technologies, and services of cloud computing, the reasons for the shift to this model, and its advantages and disadvantages.
 - Examine the technical capabilities and commercial benefits of hardware virtualization.
 - Analyze tradeoffs for data centers in performance, efficiency, cost, scalability, and flexibility.
 - Explain the core challenges of cloud computing deployments, including public, private, and community clouds, in terms of privacy, security, and interoperability.
 - Create cloud computing infrastructure models.
 - Demonstrate and compare the use of cloud storage vendor offerings, such as Amazon S3, Microsoft Azure, OpenStack, and Hadoop distributed file system.
 - Develop, install, and configure cloud-computing applications under software-as-a-service principles, employing cloud-computing frameworks and libraries.
 - Apply the MapReduce programming model to data analytics and enhance its performance by redesigning the system architecture (e.g., provisioning and cluster configurations).

Sport Data Analytics Plan of Study

This plan of study will lead to a Bachelor of Science in Tourism, Convention, and Event Management and a Master of Science in Informatics.

Tourism, Convention, and Event Management Requirements (53 credit hours)

(C or higher required for all major courses)

- o HPER-L 135 Learning Community: Physical Education-Exercise Science (for new students & transfers with <15 hours) (1 cr.)
- o HPER-R 275 (2) + HPER-R 100 (1) Camp Brosius Leadership Training (3 cr.)
- o HPER-H 160 First Aid and Emergency Care (3 cr.)
- o HPER-P 200 Microcomputer Applications in Kinesiology (3 cr.) OR BUS-K 201 The Computer in Business (3 cr.)
- o HPER-P 211 Introduction to Sports Management (3 cr.)
- o TCEM 219 Management of Sports Events (3 cr.)
- o TCEM-C 301 Career and Leadership Principles (3 cr.)
- o HPER-P 392 Sport in American Society (3 cr.)
- o HPER-P 331 Planning and Operation of Sports Facilities (3 cr.)
- o HPER-P 393 Professional Practice Programs in Health, Physical Education & Recreation (Practical Experience) (10 cr.)
- o HPER-P 411 Legal Aspects of Sport & Risk Management (3 cr.)
- o HPER-P 415 Sport Promotions and Public Relations (3 cr.)
- o HPER-P 418 Sport Marketing (3 cr.)
- o HPER-P 423 Financial Principles of Sport (3 cr.)
- o HPER-P 426 Sales Management in Sport (3 cr.)
- o HPER-P 432 Sports Management Consulting Project (3 cr.)

Business Requirements

Sports Management majors must complete either Business Minor or Business Foundations Certificate.

Business Minor (18-21 credit hours)

- o BUS-A 200 Foundations of Accounting (3 cr.)
- o BUS-K 201 The Computer in Business (3 cr.)
- o BUS-L 203 Commercial Law I (3 cr.)
- o BUS-F 300 Introduction to Financial Management (3 cr.)
- o BUS-M 300 Introduction to Marketing (3 cr.)
- o BUS-P 300 Introduction to Operations Management (3 cr.)
- o BUS-D 301 International Business Environment (3 cr.) OR BUS-Z 302 Managing & Behavioral in Organizations (3 cr.) OR BUS-Z 311 Leadership & Ethics in the Business Environment (3 cr.) AND BUS-Z 312 Human Resources & Negotiations (3 cr.) OR BUS-Z 340 Introduction to Human Resources

Business Foundations Certificate (18-21 credit hours)

- o BUS-A 186 Accounting and the Business Environment (3 cr.)
- o BUS-W 200 Introduction to Business and Management (3 cr.)
- o BUS-M 200 Marketing and Society: Roles/ Responsibilities (3 cr.)
- o BUS-Z 200 Introduction to Human Resources Practices (3 cr.)
- o BUS-F 200 Foundations of Financial Management (3 cr.)
- o BUS-P 200 Foundations of Operations & Supply Chain Management (3 cr.)

Choose one of the following:

- o BUS-L 100 Personal Law (3 cr.)
- o BUS-F 260 Personal Finance (3 cr.)
- o ECON-E 101 Survey of Economic Issues/Problems (3 cr.)
- o BUS-K 201 The Computer in Business (3 cr.)
- o BUS-X 204 Business Communications (3 cr.)
- o BUS-M 226 Personal Selling Techniques (3 cr.)

Common Core General Education Requirements (30 credit hours)

*Course options for Common Core can be found at <http://go.iupui.edu/gened>.

- o Core Communication--Required: ENG-W 131 English Composition I (3 cr.) (C or higher)
- o Core Communication--Required: COMM-R 110 Fundamentals of Speech Communication (3 cr.) (C or higher)
- o Social Science--Choose course from *Common Core list (3 cr.) (Recommended: INFO-I 275 Introduction to Human-Computer Interaction Theory)
- o Social Science--Required: ECON-E 201 Introduction to Microeconomics (3 cr.)
- o Cultural Understanding--Choose course from *Common Core list (3 cr.) (Recommended: INTL-100)
- o Arts & Humanities--Choose course from *Common Core list (3 cr.) (Recommended: NEWM-N 201 Design Issues in Digital Media)
- o Life & Physical Science--Recommended: HPER-N 220 Nutrition for Health (3 cr.)
- o Life & Physical Science--Recommended: HPER-P 205 Structural Kinesiology (3 cr.)
- o Analytical Reasoning--Choose course from *Common Core list (3 cr.) (Recommended: Math-M 119)
- o Analytical Reasoning--Choose course from *Common Core list (3 cr.) (Recommended: INFO-I 101 Introduction to Informatics)

Suggested Undergraduate Electives (7 credit hours)

- o INFO-I 475 Informatics in Sports (3 cr.)
- o HPER-P 333 Sport in America: History Perspective (3 cr.)
- o HPER-H 363 Personal Health (3 cr.)
- o HPER-N 220 Nutrition for Health (3 cr.)

- o HPER-P 324 Recreational Sports Programming (3 cr.)
- o HPER-P 484 Interscholastic Athletic Administration (2 cr.)
- o HPER-P 421 Special Topics in Physical Education (Summer Study Abroad Program) (3 cr.)
- o JOUR-J 321 Principles of Public Relations (3 cr.)
- o MSTE 31000 Business of Motorsports I (3 cr.)
- o MSTE 31100 Business of Motorsports II (3 cr.)
- o SPEA-V 362 Nonprofit Management and Leadership (3 cr.)
- o SPEA-V 458 Fund Development for Nonprofit Organizations (3 cr.)
- o BUS-W 212 Explore Entrepreneurship (3 cr.)
- o BUS-W 311 New Venture Creation (3 cr.)
- o BUS-D 301 International Business Environment (3 cr.)
- o *HPER-P 200 may substitute for BUS-K 201 in the Business Minor; BUS-K 201 is required for the Business Certificate.

Informatics Requirements (24 credit hours)

- o INFO-I 501 Introduction to Informatics (3 cr.)
- o INFO-B 505 Informatics Project Management (3 cr.)
- o INFO-H 515 Introduction to Data Analytics (3 cr.)
- o INFO-H 516 Applied Cloud Computing for Data Intensive Sciences (3 cr.)
- o INFO-H 550 Legal and Business Issues in Informatics (3 cr.)
- o NEWM-N 510 Web database concepts (3 cr.)
- o INFO-I699 Professional Practice Project (Independent Study in Informatics) (3 cr.)

PETM Graduate Requirements (12 credit hours)

- o TCEM 582 Applied Sport Event Research (3 cr.)
- o HPER-T 591 Interpretation of Data in Human Performance (3 cr.)
- o HPER-K 514 Sport Marketing and Sponsorship (3 cr.)

Total: 138 credit hours

First Semester

Learning Community	HPER-L 135	1
First Aid and Emergency Care	HPER-H 160	3
Introduction to Sports Management	HPER-P 211	3
GE - Core Communication	ENG-W 131	3
GE - Core Communication	COMM-R 110	3
Suggested undergraduate elective	varies	2
	Total:	15

Second Semester

Foundations of Accounting	BUS-A 200	3
Computer in Business	BUS-K 201	3
Management of Sports Events	TCEM 219	3
GE - Analytical Reasoning	MATH-M 119	3
GE - Social Science	ECON-E 201	3
	Total:	15

Third Semester

GE - Cultural Understanding	varies	3
GE - Arts & Humanities	NEWM-N 201	3
Sport in American Society	HPER-P 392	3
Commercial Law	BUS-L 203	3
Suggested undergraduate elective	varies	3
	Total:	15

Fourth Semester

GE - Life & Physical Science	varies	3
GE - Social Science	INFO-I 275	3
Intro to Marketing	BUS M300	3
Sales Management in Sport	HPER-P 426	3
Planning and Operation of Sports Facilities	HPER-P 331	3
	Total:	15

Fifth Semester

GE - Life & Physical Science	varies	3
GE - Analytical Reasoning	INFO-I 101	3
Intro to Operations	BUS P300	3
Intro to Financial Management	BUS F300	3
Legal Issues in Sport Settings	HPER-P 411	3
	Total:	15

Sixth Semester

Career and Leadership Principles	TCEM-C 301	3
Financial Principles in Sport	HPER-P 423	3
Sports Marketing	HPER-P 418	3
Sport Promotions and Public Relations	HPER-P 415	3
Suggested Undergraduate Elective	varies	2
	Total:	14

Seventh Semester

Sports Marketing Consulting Project	HPER-P 432	3
Managing Behavior in Organizations	BUS Z302	3
Introduction to Informatics	INFO-I 501	3
Introduction to Data Analytics	INFO-H 515	3
	Total:	12

Eighth Semester

Internship	HPER-P 393	10
Web Database Concepts	NEWM-N 510	3
Applied Cloud Computing for Data		
Intensive Sciences	INFO-H 516	3
	Total:	16

Summer Session

Camp Brosius (Summer semester)	HPER-R 100/275	3
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Ninth Semester

Applied Sport Event Research	TCEM 582	3
Interpretation of Data in Human Performance	HPER-T 591	3
Informatics Project Management	INFO-B 505	3
	Total:	9

Tenth Semester

Legal and business issues in informatics	INFO-H 550	3
Sport marketing and sponsorship	HPER-K 514	3
Professional Practice Project (Indep. Study. In Info.)	INFO-I 699	3
	Total:	9