

# Applied Sport Science

APK5702 | 22524 | 3 Credits | Spring 2025

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## Course Info

<b>INSTRUCTOR</b>	<b>Garrett Beatty, Ph.D., M.Ed.</b> Email: <a href="mailto:gbeatty@ufl.edu">gbeatty@ufl.edu</a>
<b>OFFICE HOURS</b>	2-hours per week as posted in Canvas Course (UF eLearning)
<b>COURSE ACCESS</b>	Access course through Canvas on UF eLearning <a href="https://elearning.ufl.edu/">https://elearning.ufl.edu/</a>

## COURSE DESCRIPTION

Examines fundamental concepts related to the acquisition, analysis, and interpretation of data relevant to the outcome of human performance across myriad physical and cognitive domains including sport, exercise, tactical operations, and medical professions. Addresses the use of statistics and broader fields of data science, artificial intelligence, analytics, and technology management necessary to evaluate performance and strategically adjust training methods to enhance performance.

## PREREQUISITE KNOWLEDGE AND SKILLS

Students must hold Graduate Student classification based on the UF Registrar's class student Classifications system (<https://catalog.ufl.edu/UGRD/academic-regulations/student-classifications/>). Or, students must acquire instructor approval.

## REQUIRED AND RECOMMENDED MATERIALS

Instructional materials for this course consist of only those materials specifically reviewed, selected, and assigned by the instructor(s). The instructor(s) is only responsible for these instructional materials.

**Textbook:** Textbook: French, D. and Ronda, L.T. (Eds). NSCA's Essentials of Sport Science. Human Kinetics. 2022. ISBN: 9781492593355

- Additional materials from the UF Library and web sources will be assigned and available through the UF E-Learning course shell.
- Students will need to utilize UF's VPN service to access UF Library subscriptions when utilizing off-campus computers (<https://uflib.ufl.edu/using-the-libraries/off-campus-access/>).

## COURSE FORMAT

The course is organized into 12 modules. Within each module, students will have the opportunity to engage in course content and graded learning activities. The learning activities are designed to catalyze student achievement of the following course goals and objectives.

## COURSE LEARNING OBJECTIVES:

- Identify the aspects of sports improved with technological implementation
- Describe principles of good data hygiene
- Explain the characteristics of tracking and load monitoring systems
- Describe the protocols used to collect data with relevant sport science technology
- Analyze data collected with relevant sport science technology
- Interpret the results of data analyzed from relevant sport science technology
- Recommend strategies to improve athlete health, well-being, or performance based on the interpretation of data analyses.
- Develop material to disseminate data analyses and subsequent recommendation

## Course & University Policies

### ATTENDANCE POLICY

Requirements for class attendance (participation) and make-up exams, assignments, and other work in this course are consistent with university policies

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

### PERSONAL CONDUCT POLICY

University of Florida students are bound by the Honor Pledge. On all work submitted for credit by a student, the following pledge is required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." [The Student Honor Code and Conduct Code \(Regulation 4.040\)](#) specifies a number of behaviors that are in violation of this code, as well as the process for reported allegations and sanctions that may be implemented. All potential violations of the code will be reported to Student Conduct and Conflict Resolution. If a student is found responsible for an Honor Code violation in this course, the instructor will enter a Grade Adjustment sanction which may be up to or including failure of the course.

### APPROPRIATE USE OF AI TECHNOLOGY

The UF Honor Code strictly prohibits [cheating](#). The use of any materials or resources prepared by another person or Entity (inclusive of generative AI tools) without the other person or Entity's express consent or without proper attribution to the other person or Entity is considered *cheating*. Additionally, the use of any materials or resources, through any medium, which the Faculty / Instructor has not given express permission to use and that may confer an academic benefit to a student, constitutes *cheating*.

**The utilization of Artificial Intelligence tools IS permitted in this course** with the explicit understanding that students must cite all sources and tools utilized to support their work. Students are responsible for all content (accuracy, subjects, themes, etc.) submitted in their name regardless of where the content was generated. All submitted work/content must comply with UF's Honor Code.

### IN-CLASS RECORDING

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use,

(2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or guest lecturer during a class session. Publication without permission of the instructor is prohibited.

To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

### **COPYRIGHT STATEMENT**

The materials used in this course are copyrighted. Course content is the intellectual property of Garrett Beatty, and property of the University of Florida. Course content may not be duplicated in any format without explicit permission from the College of Health and Human Performance, UF, and Garrett Beatty. Course content may not be used for any commercial purposes. Individuals violating this policy may be subject to disciplinary action or legal litigation from the University and other injured parties.

### **GRADED WORK MAKE-UP POLICY**

Unless excused based on University policies

(<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>), missed examinations and non-submitted or late assignments will be not be evaluated and will be assigned a grade of 0.

Obtaining approval for make-up exams or make-up assignments is the responsibility of the student. Students with medically or emergency related circumstances should utilize the UF Care Team’s Contact My Instructor service (<https://care.dso.ufl.edu/instructor-notifications/>) provided by the UF Dean of Students Office.

Any non-medical or emergency related circumstances require students to submit a written request explaining why an exception is being requested. The written request must include official documentation that provides proof that the missed coursework was due to acceptable reasons outlined by University policy.

### **ACCOMMODATING STUDENTS WITH DISABILITIES**

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting their Get Started page at <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

## COURSE EVALUATIONS

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

## Getting Help

### HEALTH & WELLNESS

- **U Matter, We Care:** If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.
- **Counseling and Wellness Center:** Visit the [Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.
- **Student Health Care Center:** Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the [Student Health Care Center website](#).
- **University Police Department:** Visit [UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).
- **UF Health Shands Emergency Room / Trauma Center:** For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; or visit the [UF Health Emergency Room and Trauma Center website](#).
- **GatorWell Health Promotion Services:** For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the [GatorWell website](#) or call 352-273-4450.

### ACADEMIC RESOURCES

- **E-learning technical support:** Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).
- **Career Connections Center:** Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- **Library Support:** Various ways to receive assistance with respect to using the libraries or finding resources.
- **Teaching Center:** Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring.
- **Writing Studio:** 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.
- **Student Complaints & Grievances:** Students are encouraged to communicate first with the involved person(s), but [here](#) is more information on the appropriate reporting process.

## Grading

Student learning will be evaluated through module quizzes, data-based assignments, and three exams. Specific assignment details and grading rubrics will be provided on the course website <https://lss.at.ufl.edu/>.

- **Quizzes:** Each course module includes multiple choice quizzes aimed at guiding and enhancing engagement in learning opportunities.

- **Assignments:** Each student will be graded on assignments throughout the course in which students will apply course concepts to actual human performance related data sets. Assignment tasks will include the acquisition, processing, cleaning, statistical analysis, interpretation, and presentation of relevant data sets.
- **Exams:** Students' knowledge of course content will be evaluated on two multiple choice exams. Questions will require the application of course material or knowledge of basic scientific principles covered throughout the course. Exam questions are generated by the course instructor and are randomly selected from a test bank. Students should prepare for the exam by completing all weekly course readings, watching all course lectures, consuming all course media, and completing and module quizzes prior to the exam.

**Final grade composition:**

- Quizzes: 10%
- Exams: 20%
  - Exam 1: 10%
  - Exam 2: 10%
- AI & Sport Science Assignments: 70%

**Notes:**

- Grades will not be rounded
- e.g. a 92.99% will not be rounded to a 93.00%.
- Grades of "I", "X", "H", or "N" will not be given except in cases of a documented, catastrophic occurrence.

**Grading scale:**

<u>Grade</u>	<u>Percentage</u>	<u>Grade Points</u>
A	93 - 100 %	4.00
A-	90 - 92.99 %	3.67
B+	87 - 89.99 %	3.33
B	83 - 86.99 %	3.00
B-	80 - 82.99 %	2.67
C+	77 - 79.99 %	2.33
C	73 - 76.99 %	2.00
C-	70 - 72.99 %	1.67
D+	67 - 69.99 %	1.33
D	63 - 66.99 %	1.00
D-	60 - 62.99 %	0.67
E	0 - 59.99 %	0.00

More detailed information regarding current UF grading policies can be found here:

<https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>.

## Weekly Course Schedule

### CRITICAL DATES & UF OBSERVED HOLIDAYS

- January 20: Martin Luther King Jr. Day (UF Closed)
- March 15 – 22: UF Spring Break (No UF Classes)
- April 24 – 25: UF Reading Days (No UF Classes)
- April 26 – May 2: UF Final Exams
- Complete list available here: <https://catalog.ufl.edu/UGRD/dates-deadlines/2024-2025/#spring25text>

### WEEKLY SCHEDULE

Week	Dates	Assigned Module & Schedule Notes	Assessments Due
1	January 13 – 17	Module 1 – Technology & Data in Human Performance Textbook Chapters: 7, 8	
2	January 20 – 24	<b>UF Holiday: MLK Jr. Day – January 20</b> Module 2 – Athlete Tracking Systems and Load Monitoring Textbook Chapters: 9, 10	<b>No Class Meeting</b>
3	January 27 – 31	Module 3 – Kinematics, Kinetics, & Gait Analysis Textbook Chapters: 11, 12	February 2 In Class Assignment
4	February 3 – 7	Module 4 – Strength Tracking & Analysis; HR & HRv Textbook Chapters: 13, 14	February 9 AI Project Assignment 1
5	February 10 – 13	Module 5 – EEG, EMG, & Biomarkers Textbook Chapters: 15, 16	February 15 AI Project Assignment 2
6	February 17 – 21	Module 6 – Perception of Effort and Subjective Monitoring Textbook Chapters: 17	<b>No Class Meeting</b>
7	February 24 – 28	Exam 1 Week Exam 1 Available Feb 24 – March 2 (1 attempt)	March 2 <b>Exam 1</b>
8	March 3 – 7	Module 7 – Statistical Modeling Textbook Chapters: 18	<b>March 9</b> AI Project Assignment 3
9	March 10 – 14	Module 8 – Injury Risk Model Textbook Chapters: 19	<b>March 16</b> In Class Assignment
10	March 17 - 21	<b>UF Holiday: Spring Break</b> <b>March 17 - 22</b>	<b>No Class Meeting</b>
11	March 24 – 28	Module 9 – Operationalizing Data Textbook Chapters: 22	March 30 AI Project Assignment 4

12	March 31 – Apr. 4	Module 10 – Data Mining & Nonlinear Data Analysis Textbook Chapters: 20	April 6 AI Project Assignment 5
13	April 7 - 11	Module 11 - Data Delivery & Reporting Textbook Chapters: 21	April 13 In Class Assignment
14	April 14 – 18	Module 12 – Information Dissemination Textbook Chapters: 31	April 20 AI Project Assignment 6
15	April 21 – 23	<b>Exam 2 Available: April 19 – April 29 (1 attempt)</b>	<b>No Class Meeting</b>
Reading Days	April 24 - 25	<b>UF Reading Days: April 25 &amp; 26</b>	
Final Exam	April 26 – May 2	<b>Exam 2 Available: April 19 – April 29 (1 attempt)</b>	April 29 Exam 2 AI Project Assignment 7

## SUCCESS AND STUDY TIPS

Quizzes are designed as preparation tools for the course exams. Learning is a process that requires sustained, incremental advancements and occurs over time following neural adaptation. More simply stated, cramming may yield short-term results, but this strategy does not induce meaningful or lasting learning. Quizzes include questions reflective of the question styles included on the three exams.

Yellowdig is an asynchronous student engagement platform. Students should plan to participate weekly by posting course relevant thoughts, observations, questions; and responding to peers. Points are accrued on a weekly basis, so it is critical that students do not fall behind as it is nearly impossible to catch up on missed weeks.

AI & Global Case Studies assignments are designed to facilitate skill development in retrieving, consuming, and communicating scientific evidence to a broad audience. Case Studies require substantial preparation to execute successfully. Students should review the Assignment at the beginning of the semester and plan to work on these assignments incrementally each week throughout the semester.

Exams are designed as summative assessments (meaning, they test students to see what they learned and retained in the preceding module). All module materials, assignments, and the optional study guides are intentionally designed to help students prepare for the three course exams.

Optional Study Guides are exactly that—optional, and study guides. Note, the study guides are designed to facilitate learning, and not memorization. The study guides require critical thinking and problem solving utilizing the concepts presented within the module. Students should attempt to answer the study guide prompts without using course materials to self-test their retention. When students hit a block and are unable to answer a study guide prompt, then they can reference course materials. Students would benefit from self-testing their ability to answer each prompt until they can do so without referencing course materials.