#### **MSE 3300**

### Materials Science & Engineering of Sports MWF 1:55-2:45p Love 185

**Instructor:** Dr. W. Jud Ready

Room 133, Baker Bldg. (925 Dalney St.)

Tel: (404) 407-6036

e-mail: jud.ready@gatech.edu

**Course Objectives:** Students will learn:

(1) the fundamentals of structure-property-processing relationships of engineering

materials used in common sports;

(2) the relationship of these fundamentals to the performance of these materials;

(3) the relevant properties of materials used in sports;(4) materials selection as part of engineering design.

Course Outcomes: Outcome 1: The student will demonstrate the fundamental knowledge and skills to function

effectively in materials science and engineering-related positions within the sports and

sporting goods industry.

 $\underline{Outcome\ 2}{:}\ The\ student\ will\ be\ able\ to\ compare\ and\ contrast\ the\ materials\ characteristics$ 

and performance of playing surfaces and implements in sports.

Outcome 3: The student will be able to describe the evolution of materials and materials

processing techniques used in sports.

<u>Outcome 4</u>: The student will be able to estimate and predict the property-processing-performance parameters required of materials at different levels of play in sports.

Outcome 5: The student will be able to devise and propose a rules-compliant extension to a

current material used in one or more sports.

**Exams:** All exams will be closed book. No formula sheets other than the ones provided with the

exam will be allowed. The exams will emphasize topics that are detailed during lecture, in the textbook or other literature provided, field trips and group projects. Dates of exams are outlined below, and will cumulatively assess the information presented from the first day of

class through the date of examination.

Exam I – February 16, 2018

• Exam II – March 12, 2018

Final Exam – May 3, 2018

Office Hours: By appointment.

**Textbook:** Literature pertinent to this course from multiple sources is available on Tsquare.

Course Website: Tsquare.gatch.edu will be used to post the course syllabus, lecture notes, additional reading

materials, etc. Important announcements will also be sent to your institute-registered email

account, so please check itregularly.

**Grades:** Your grade in the course will be determined based on your attendance during the field trips,

and your performance on three written examinations & a group design project. All exams will be closed notes, closed book tests (i.e., no supplementary materials of any kind are to be used). The first two examinations (50 minutes long) will be held during the regular meeting time of the class on the dates indicated on the syllabus. The last examination will

be administered during the designated final exam period (2 hours 50 minutes). Overall grades are expected to approximate a traditional "10-point" grading scale.

<u>Ite</u>	<u>m</u>	Percentage of Overall Grade
1.	Exam I	20%
2.	Exam II	20%
3.	Design Project	20%
4.	Final Exam	30%
5.	Field Trip Attendance	9%
6.	Sporting Event Attendance	1%

Homework:

Homework problems will not be assigned and are not part of your grade.

Attendance:

The Institute attendance policy is described in Chapter IV of the course catalog (<a href="http://www.catalog.gatech.edu/rules/4/">http://www.catalog.gatech.edu/rules/4/</a>). Attendance is not taken during lectures. However, 10% of your grade is determined by your attendance during the field trips (verified via sign-in sheet) and at least one sporting event outside of regularly scheduled class time (as verified by 'selfie' sent to instructor showing BOTH you and the scoreboard).

**Design Project:** 

By February 2, 2018 students will <u>self-organize</u> into teams not to exceed five (5) persons. There will be NO assistance in group formation provided by the instructor. Teams of between three (3) to five (5) people are allowed; no more, no less. Submit your topic and cc: all team members to jud.ready@gatech.edu by 1:55p EST February 2, 2018 Put the topic in the subject line, and include a paragraph description of what you will be pursuing in the body with all team member names listed. Only one email per team is necessary.

Teams will study the current state of the art for a material/sport of their choosing and will devise, propose and potentially prototype a rules-compliant extension to a current material used in one or more common sports.

Students are expected to detail the past, present and future of the sports-related material/application selected. For future, you are to design a <u>rules-compliant</u> "next generation" material for your application. You MUST include an "Ashby plot" in defense of this selection. Granta Edupack is available to you free via GT-OIT for this purpose, or you may use another means of your choosing. Making an actual prototype of your design is not required, but is encouraged.

Your written report should be as long as it takes to do an exceptional job presenting the materials evolution in your chosen topic and defending your selection of "advancement." This will likely be in the 10-20 page range with an equal or greater number of peer-reviewed references (AVOID WEBSITES!!). All written reports MUST be uploaded as PDF to T-square by April 13, 2018 @ 1:55P ET. All written reports will be immediately run through "iThenticate", an automated plagiarism checker GT provides to faculty to ensure academic integrity, so don't risk it! When in doubt, reference the original source and give credit where credit is due!! (it's like pointing to your teammate after an "assist").

Oral presentations will occur during the final 2-3 weeks of class and should be ~15 mins. long per team. All oral presentations MUST be uploaded to T-square in PowerPoint format by April 13, 2018 @ 1:55p ET. The version uploaded to T-square will be the one presented during class. The exact day/time of your team's presentation will be determined quasirandomly and provided by April 1, 2018. The team presentation will be graded by the

instructor and your classmates based on an equally-weighted rubric of: technical quality, visual presentation quality, and oral delivery quality.

Missed Exam Policy: Those with Institute sanctioned activity excuses will be allowed to take missed exams, per Institute policy. Individual make-up exams for others will only be permitted when absences are due to legitimate reasons such as death of an immediate family member, injury/illness with doctor note, or other events recognized by the Institute as a valid excuse. You must contact the instructor in writing (email) to request a make-up exam. Whenever possible, make-ups will be administered prior to the next class period following the scheduled date of the exam. Make-up exams may differ significantly from those administered during the regular examination period.

**Grade Accuracy:** 

Errors in grading and/or recording of scores for exams must be addressed within seven (7) days of posting on TSquare by contacting the instructor directly. Disputes after this oneweek period will not be considered.

Final Exam Conflicts: The Institute has established policies for final exam scheduling conflicts, please refer to the Office of the Registrar's website http://www.registrar.gatech.edu/students/examguide.php.

**Academic Integrity:** 

All students in this class are expected to respect the Georgia Tech Honor Code and behave in a professional manner when it comes to academic integrity. Cheating off of another person's exam is unethical, unacceptable and is a direct violation of the GT Academic Honor Code (http://www.policylibrary.gatech.edu/student-affairs/academic-honor-code). Any students violating the honor code or suspected of academic misconduct will be referred to the office of Academic Integrity, Dean of Students to investigate the incident(s).

Word:

You may NOT use a previous design project as your own. Examples of exams from previous semesters will be posted on Tsquare.

Electronic Devices: Programmable and graphing calculators are allowed, but their memories should be appropriately cleared. Your use of a calculator should be consistent with the "closed book" exam policy. Specifically, reference materials of any kind are not permitted on exams. The use of any mobile/wireless communication device (laptop, tablet, smart watch, cell phone, smart phone, etc.) in any way, shape, or form during an exam is strictly forbidden. All such electronic devices must be placed inside of and remain in a closed bag, purse, or backpack during exams. Sharing or passing of calculators is also strictly forbidden. Violations of these electronic device policies will be referred to the Office of Student Integrity for investigation.

Inclement Weather: In the event of campus closure or class cancellation due to inclement weather or other circumstances on an exam or group presentation date, the exam or presentation will occur on the next date that the course meets without requiring additional notice to the student. If a campus closure is lifted on the same date as an exam, or the day before an exam, the exam will be held as scheduled.

Diversity & Disability: Georgia Tech values diversity and inclusion and is committed to a climate of mutual respect and full participation. Our goal is to create learning environments that are usable, equitable, inclusive and welcoming. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or accurate assessment or achievement, please notify the instructor as soon as possible. Students with disabilities should contact the Office of Disability Services (ODS) to discuss options of removing barriers in this course, including

accommodations. ODS can be reached at 404.894.2563, dsinfo@gatech.edu, or disabilityservices.gatech.edu

If you have already established accommodations with ODS, please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course.

If you have not yet established services through ODS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), please contact ODS at 404.894.2563 or dsinfo@gatech.edu or disabilityservices.gatech.edu.

ODS offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process between you, your instructor(s) and ODS. It is important to the Georgia Institute of Technology to create inclusive and accessible learning environments consistent with federal and state law.

Other Circumstances: Please be sure to meet with the Dean of Students if you encounter extenuating circumstances that interfere with your ability to attend class and/or exams. The Dean's office is your best resource when you would prefer to not discuss the details of your personal situation with the Instructor.

### **Campus Carry:**

Georgia House Bill 280, commonly known as the "campus carry" legislation, is effective as of July 1, 2017. There are a number of exceptions to the new law that limit the places on campus where handguns may be carried. Even license-holders may not carry a handgun into the following locations on college/university-owned or leased property that are particularly relevant to this course:

- (1) Buildings and property used for athletic sporting events. Including stadiums, gymnasiums and similar facilities in which intercollegiate games are staged. It does not extend to student recreation centers and similar facilities that are not used for intercollegiate games.
- (2) Faculty, staff and administrative offices.

Guidelines for the implementation of House Bill 280 may be found at http://www.usg.edu/hb280.

Teaching Assistants: You are encouraged to contact your TA(s) for questions/problems. Below you will find a list of the TAs and e-mail addresses. TA contact and office hour information will also be posted on Tsquare.

TA #1	TA #2	TA #3	TA #4
Andrew Marshall	Katie Townsend	Christian Struebing	Gill Biesold-McGee

andrew.marshall@gtri.gatech.edu; christianstruebing@yahoo.com;

mtownsend8@gatech.edu; gvbm3@gatech.edu

## <u>Materials Science & Engineering of Sports</u> MSE 3300 – Spring 2018 – MWF1:55P-2:45P – Love 185

1	Week	Date	Topic
1/10 Atomic Bonding 1/12 NO CLASS *****  1/15 MLK Jr. HOULDAY – NO CLASS 1/17 Crystal Structures 1/19 Defects, Dislocations, Diffusion  1/22 Polymers & Glasses 1/24 Composite Structures 1/26 Mechanical Properties 1/27 Phase Equilibria, Diagrams & Transformations 1/31 Metal Alloys of Steel, Al, Ti, & Mg 2/2 GROUP PROJECT TEAMS & TOPICS DUE  5 2/5 Materials Fabrication & Joining 2/7 Woods, Grasses, Leathers, Natural Fibers 2/9 Aerodynamics / Hydrodynamics 6 2/12 Prof. Kistenberg // Prosthetics 2/14 People in the loop (biomechanics, injuries, ethics, rules, officials) 2/15 EXAM I  7 2/19 Golf 2/23 Golf 2/23 Golf 2/23 Golf 2/25 Top Golf "Lab" @ 5-8P // food, drinks & golf pro included; \$5/ea. (OPTIONAL) 8 2/26 Bicycle 2/18 Bicycle 2/18 Bicycle 3/1 Skiing 3/9 FIELD TRIP – Football 10 3/12 EXAM II **** 3/14 DROP DAY (AP) **** 3/14 DROP DAY (AP) **** 3/15 FIELD TRIP – Football 11 3/19 SPRING BREAK – NO CLASS 3/21 SPRING BREAK – NO CLASS 3/21 SPRING BREAK – NO CLASS 1/2 SPRIN	1		
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1/24 Mechanical Properties  1/26 Mechanical Properties  1/29 Phase Equilibria, Diagrams & Transformations  1/31 Metal Alloys of Steel, Al, Ti, & Mg 2/2 GROUP PROJECT TEAMS & TOPICS DUE  5 2/5 Materials Fabrication & Joining 2/7 Woods, Grasses, Leathers, Natural Fibers 2/9 Aerodynamics / Hydrodynamics  6 2/12 Prof. Kistenberg // Prosthetics 2/14 People in the loop (biomechanics, injuries, ethics, rules, officials) 2/16 EXAM I  7 2/19 Golf 2/21 Golf 2/23 Golf 2/23 Golf 2/25 Top Golf "Lab" @ 5-8P // food, drinks & golf pro included; \$5/ea. (OPTIONAL)  8 2/26 Bicycle 2/18 Bicycle 2/18 Bicycle 3/2 Sking 3/7 Fishing & Boating 3/7 Fishing & Boating 3/7 Fishing & Boating 3/1 EXAM I **** 3/14 DROP DAY (AP) ***** 3/16 FIELD TRIP - Football  10 3/12 EXAM I **** 3/16 FIELD TRIP - Sports Medicine  11 3/19 SPRING BREAK - NO CLASS 3/21 SPRING BREAK - NO CLASS 3/23 SPRING BREAK - NO CLASS 1/2 3/26 FIELD TRIP - DORGT  13 3/26 FIELD TRIP - DORGT 14 FIELD TRIP - PORGT 15 A/4 FIELD TRIP - Forthall 16 FIELD TRIP - PORGT 17 FIELD TRIP - Faste & Field **** 4/6 FIELD TRIP - Faste & Field ***** 4/6 FIELD TRIP - Faste Markeup DATE 4/13 ORAL & WRITTEN TEAM PROJECTS DUE ON TSQUARE; GROUP PRESENTATIONS 4/20 GROUP PRESENTATIONS 4/20 GROUP PRESENTATIONS 4/21 GROUP PRESENTATIONS 4/22 GROUP PRESENTATIONS 4/23 GROUP PRESENTATIONS 4/24 GROUP PRESENTATIONS 4/25 READING PERMOD - NO CLASS		1/19	·
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1/31		1/26	Mechanical Properties
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# **Georgia Institute of Technology**



## William Ready Teaching Special Topics 4803 Graduate Semester-Undergraduate Semester A

There were: 141 possible respondents.

	Question Text	N	RR	Interpol. Median	0-3	3-6	6-9	9-12	12-15	15-18	18 +	N/A
1	Student: Hours per week	67	48%		10	34	15	7	1	0	0	0
					0-30	30- 50	50- 70	70- 80	80-90	90- 100	N/A	
2	Student: Percent attendance	66	47%		1	0	1	5	11	48	0	
3	Student: Percent homework completion	63	45%		2	0	0	0	0	22	39	
					5 Extremely Well	4	3	2	1 Completely Unprep	N/A		
5	Course: How prepared to take subject	67	48%	3.57	12	23	14	11	7	0		
					5 Exceptional Amt	4	3	2	1 Almost Nothing	N/A		
6	Course: Amount learned	67	48%	4.25	27	24	12	3	0	1		
					5 Exceptional	4	3	2	1 Very Poor	N/A		
7	Course: Assignments facilitated learning	67	48%	4.09	20	27	10	2	3	5		
8	Course: Assignments measured knowledge	66	47%	3.98	18	27	12	4	3	2		
					5 Strongly Agree	4	3	2	1 Strongly Disagree	N/A		
9	Course: Overall effectiveness	67	48%	4.04	21	26	13	3	3	1		
					5 Exceptional	4	3	2	1 Very Poor	N/A		
14	Instructor: Clarity	66	47%	3.98	20	24	8	11	2	1		
					5 Strongly Agree	4	3	2	1 Strongly Disagree	N/A		
15	Instructor: Communicated how to succeed	66	47%	4.39	30	19	7	6	2	2		
					5 Exceptional	4	3	2	1 Very Poor	N/A		
16	Instructor: Respect for students	66	47%	4.57	35	19	5	3	3	1		
					5 Extremely Enthus	4	3	2	1 Detached	N/A		
17	Instructor: Enthusiasm	66	47%	4.94	58	3	3	0	1	1		
					5 Made Me Eager	4	3	2	1 Ruined Interest	N/A		
18	Instructor: Stimulates interest	66	47%	4.62	37	17	8	3	0	1		
					5 Highly Accessible	4	3	2	1 Hard To Find	N/A		
19	Instructor: Availability	66	47%	4.24	23	21	7	5	1	9		
					5 Extremely Helpful	4	3	2	1 Not Helpful	N/A		
20	Instructor: Feedback helpfulness	65	46%	3.79	14	19	15	2	5	10		
					5 Strongly Agree	4	3	2	1 Strongly Disagree	N/A		
21	Instructor: Overall effectiveness	66	47%	4.45	31	20	8	2	3	2		

Text Respons	es
Course best aspect	

MSE 4803: The field trips and final report were a great to get real life application to what we learned in class.

MSE 4803: I thought the field trips were an awesome way to see some of the materials utilized in modern sports equipment, helped me take the "fundamental theory" and see how it's actually used in real life. Prosthetic guest speaker was one of my favorite classes, you should see if he will present again next time this class is taught.

MSE 4803: I enjoyed the field trips and appreciated the effort the professor put into planning them.

MSE 4803: The best aspect was the personal interest that I had in this course coming in. I got to learn all about the materials involved in sports, which I really liked. Also, the field trips were cool. It was really cool to see the training facilities that each team uses.

MSE 4803: interest. application. relevance. very technical, helped me understand some manufacturing.

MSE 4803: Learned about many sports applications of materials not just one

MSE 4803: The field trips were very informational and enjoyable. It was really cool to see how we could get

MSE 4803: It was straight forward

MSE 4803: It was a great chance to combine my passions for both sports and engineering science. The material was very interesting and valuable information to someone perusing a career in the sporting goods industry. The field trips were a great aspect of the course, not only to see some of the athletic facilities but also to see how the equipment utilizes different aspects of materials science and engineering

MSE 4803: Really fascinating material, awesome to be able to take a course like this.

MSE 4803: The field trips were great. They really helped me to connect what I learned in the classroom to real life.

MSE 4803: Not too much material science nor too much sports theory. Maintained the right balance

MSE 4803: Learning about engineering concepts in a sports setting

MSE 4803: Was the first time this was a class and seemed pretty organized

MSE 4803: If we covered all the sports like we covered golf it would be awesome.

MSE 4803: The topic is interesting and was fun to learn all the different materials and design goals of sports.

MSE 4803: I enjoyed learning about the different materials and manufacturing processes that go into making sports happen.

MSE 4803: Learning about the evolution of materials in sports and applying it to real world applications

MSE 4803: Best aspect was this is a very unique course and helped me apply a very engineer's-approach to a "recreational" topic

MSE 4803: The field trips were so fun and such a cool way to experience sports materials first hand.

MSE 4803: Field trips were a fun way to learn about various sports and their equipment

MSE 4803: I enjoyed looking at sports from a materials based perspective.

MSE 4803: I loved the hands on aspect of going to other places and seeing the materials being implemented first hand.

MSE 4803: Enjoyed the course. Really liked the field trips.

MSE 4803: The professor posted the textbook on T Square

MSE 4803: I really enjoyed the field trips and group project.

MSE 4803: I really enjoyed the field trips. It was cool to visit the different sports and hear from their coaches/staff about the different materials used in that sport.

MSE 4803: interesting in theory

MSE 4803: Interesting course I'm glad I got the opportunity to take

MSE 4803: I greatly appreciated learning about a vast array of topics, both the actual sports, and the evolution of the materials that we use in them

MSE 4803: Really cool topic that is very applicable to the real world

MSE 4803: I really enjoyed the field trip portion, however I'll also say it was were I likely learned the least. In the moment, I was learned a lot, but because I didn't take notes I retained very little of it. That said, it was certainly the most fun part.

MSE 4803: Very interesting course material

MSE 4803: interesting

MSE 4803: Prof keeps it interesting

MSE 4803: The field trips

MSE 4803: fieldtrips!

MSE 4803: Honestly the field trips I think it's dumb that you are making the final based on the trips because it is so impossible to hear. IT SUCKS. If you happen to be stuck in the back your basically screwed I don't understand the point...

MSE 4803: Field trips allowed us to see materials in action rather than just simply watching videos or looking at photos. I loved the hands on approach of the course

MSE 4803: really fucking good lectures, despite being pretty ADD (why can't you use the board in any sort of pattern????), they were easy to follow and goddamn engaging

MSE 4803: Some parts of the class were pretty interesting but only when it was applicable to my life.

MSE 4803: Interesting subject

MSE 4803: Interesting

MSE 4803: Super unique course and material was very interesting considering it was a Special Topics course in a major that I was not familiar with, I felt very interested the whole time!

MSE 4803: The course

#### Course improvements

MSE 4803: Provide possibly optional homework or even quizzes to help students assess understanding of the material. Since this class has no prerequisites there is a really uneven balance in the amount of studying some students have to do to understand the basics. However this can be alleviated with homework that measures understanding before the tests.

MSE 4803: Two biggest complaints: (1) I know there are a ton of things to cover, but consider using less acronyms when lecturing unless you define them explicitly first. Sometimes I found it a bit confusing trying to understand my notes when I would review them. This would have helped me grasp the terminology a bit better as a non MSE major. (2) I know Dr. Ready is by no means sexist, however try and be wary of how you say things. For example, when we were talking about textiles, fabric, knitting, etc, I think some of the women got offended when you assumed they knew how to knit/stitch/crochet. Hell, I'm a guy and I've done some of that stuff before too! Additionally, when we were talking about golf I think you mostly were asking the guys on their preferred clubs/grips/balls. As I mentioned already, I know Dr. Ready did not do this to upset anyone intentionally... just be wary in the future!

MSE 4803: The class placed a heavy emphasis on memorizing lists of information - frequently the evolution of different objects used in sports (golf balls, softball bats, etc.). I found this uninteresting and unnecessarily difficult to remember; I think the course could be significantly improved by focusing on developing intuition for materials science concepts and providing a broad overview of the field using sports as a motivating example rather than the current focus on the evolution of materials used in various sports-related objects.

MSE 4803: The second section of the course could be improved by covering more sports. We really went into great details with golf, but I think it could be much better if more sports were covered.

MSE 4803: better advertised

MSE 4803: less detailed material at the beginning of class. Too much information on material science principals not related to sports

MSE 4803: Better planning/pacing of the class. You mentioned that you were only a class ahead planning-wise and it showed with how we weren't able to cover some topics. That being said I liked how we did a very thorough coverage of golf. Maybe do one "classic" case study (such as golf) and then have a vote for the sports you should cover in similar depth so as to match class interest.

MSE 4803: There weren't any homework assignments or anything to facilitate learning, just the exams. It was incredibly difficult to learn a relatively easy subject due to his lack of textbook and legible notes.

MSE 4803: More guidelines or knowledge of what was expected would have been useful in the final project (Although, I still enjoyed working on the project). I also think requiring an introductory level MSE course as a pre-req would be a good idea so students come in already knowing fundamentals of MSE and more time can be spent talking about how those MSE topics are applied in sports.

MSE 4803: For the design project, more guidance on what was expected of each group would have been very helpful.

MSE 4803: Field trips could be improved. The facilities and coaches could be guided to be better prepared

MSE 4803: a bi-weekly easy homework that guides students in their learning

MSE 4803: More insight into the industry side of Materials Engineering in Sports. I would have liked to hear from a guest speaker from Russell or Under Armour, or Nike to talk about apparel specifically.

MSE 4803: Maybe make MSE 2001 a prereq. Would allow us to talk more about sports stuff.

MSE 4803: The field trips were cool and fun, but they seemed unorganized and not super effective materials related. I don't what to say get rid of them, but maybe coordinate with the facilities a little more, or maybe lecture on the sport first then go to the facility.

MSE 4803: There is so much information. On top of anything from MSE 2001, which I took two and half years ago, all the tiny facts like ball diameter rules, names, history and all that was fair game on tests, so studying took forever and may not even be on the test. I think the tests were pretty fair overall though, being given some hints and all as to what would be on there.

MSE 4803: More organized

MSE 4803: The speakers at the field trips seemed unsure about how to give a lecture so we could take notes. It might be better if the guest speakers came to the lecture hall to talk about their sport, much like the guy from the prosthetics department did.

MSE 4803: Possibly less field trips, and going more in depth on a few sports rather than skimming over broad sports (time permitting)

MSE 4803: Make MSE 2001 a prerequisite

MSE 4803: I really felt that the tests didn't adequately test my knowledge of the subjects. I felt like in a lot of cases that we were expected to know too much detail (i.e. specific weights and sizes) that could easily be looked up. I thought the class was going to be much more general and talk more about trends and what general materials we would need. I also would have liked to learn less about golf.

MSE 4803: More clarity in notes

MSE 4803: Spend a little less time on one sport and more time covering many different types of sports.

MSE 4803: Go slower when discussing MSE, I have never taken an MSE course before and it was overwhelming.

MSE 4803: Somehow emphasize the importance of taking good notes on the field trips even though it may be difficult, because the exam questions were very difficult to recall from memory.

MSE 4803: The intro of the course seemed like a rehash of MSE2001. The course could benefit from heavily relying on the fact that it's a prerequisite (I think) and skipping half the review and moving quicker to the sports.

MSE 4803: The material taught in the course was poorly organized, even for a course in its first semester. The professor clearly did not fully understand the subject material and should spend much more time understanding materials of sports before teaching the course again in the fall. Also, the tests evaluated knowledge of trivial matters (names of regulatory bodies, etc.) rather than the application of materials to sports.

MSE 4803: Maybe give a better understanding of what will be on tests. I remember the first test was completely from the practice tests and then the second test was nothing like the practice test. It just made studying and getting a feel for the tests more difficult.

MSE 4803: It was hard to take notes during the field trips because I was so focused on listening to what they had to say

MSE 4803: There was no material given to prepare for any tests, no practice questions or exams or homeworks, all there was was 50 pages of jumbled handwritten notes in the teachers shorthand.

MSE 4803: A better, more in depth outline of material could be helpful for student's to know exactly what to expect from tests. A lot of material was covered very quickly on a shallow, basic level (esp. at beginning of semester), which made it hard to appreciate why we learning the material

MSE 4803: Notes on the board were oftentimes confusing and jumbled together

MSE 4803: I really liked the field trips, but I think it would be nice if the talks were a little more structured (maybe give the coaches a little more guidance) because some definitely were more prepared than others

MSE 4803: Perhaps better integration of the 3 parts of the class? I dreaded class the first 1/3 while we were learning only about materials, enjoyed it more while learning about materials in sports, and really liked the field trip portion. If you could somehow integrate the three parts together more it would make for a more fun overall class experience.

MSE 4803: The class is about materials science of sports, and most of the semester is spent going over MSE 2001 stuff so it was a bit repetitive for me

MSE 4803: The midterm format was extremely open ended so I was not always sure what I should be studying

MSE 4803: Clarity of notes. Lecture slides would be good. If slides contained the words then he could spend a little more time drawing diagrams he wants to draw, which would hopefully make them a little more clear and legible than they tend to be

MSE 4803: There's a LOT going on in this course, and I think it could be divided into more specified sections. Although there is a lot of overlap across different sports, it's difficult to remember certain things for exams

MSE 4803: Having the first unit have a little more organization to it

MSE 4803: tests are on random material that was barely mentioned in class

MSE 4803: Honestly you need better notes, your notes are so messy plus it's impossible to follow your in class notes you jump around honestly I've given up sometimes because you go so quickly and just write everywhere it's awful. You might want to consider doing powerpoint....

MSE 4803: Poorly organized notes

MSE 4803: needed a rubric for the project, thh

MSE 4803: I don't feel like I am going to remember anything I learned in this class. There was no book so I would just memorize the notes and take the tests.

MSE 4803: Little more structured notes

MSE 4803: nothing

#### Other comments about quality of course

MSE 4803: The class had a wide audience - MSE majors, non-majors who had taken the introductory MSE class, and non-majors with no MSE background. I think this class would be best served by either requiring MSE prerequisites or targeting only non-majors. As someone who had no MSE background and hadn't seen any chemistry since freshman chemistry three and a half years ago, I had to rely on friends to understand what was going on in class and the terms/abbreviations in the posted notes. If the class is taught again in the future and is targeted at people like me, I think the class would be stronger if the focus was on learning interesting concepts from MSE using sports to motivate and tie together concepts.

MSE 4803: This class was one of the most interesting classes I have taken at my 5 years at Tech. It was so interesting because everything I was learning was something that I had encountered in real life: I've seen a different helmets up close; I've ridden a bike; I have swung a golf club. While I have never thought about the material aspects of all those things before this class, having been exposed to them made the class that much more engaging. It was the fact that I was learning more about things I already knew then being asked something very theoretical that I would probably never experience in the future.

MSE 4803: I really enjoyed this course and hope it continues to be offered at Georgia Tech for students like myself who have interest in materials science and engineering as well as sports

MSE 4803: while the field trips where fun, I felt that there wasn't much learning that took place. Roughly half of the people who talked to us did not know a whole lot about the materials, however they did provide insight into how different materials are used and where they fall short, which I think is an important aspect to keep.

MSE 4803: Enjoyed taking this course very much as it stimulated my interest in sports while applying rigorous engineering skills that I can utilize in industry

MSE 4803: I wasn't a big fan of the field trips. They were nice places to visit, but I don't think I got a lot of new knowledge from the different tour guides.

MSE 4803: Great class overall

MSE 4803: Add MSE 2001 as a pre-req

MSE 4803: None.

MSE 4803: TERRIBLY UNORGANIZED >:( YOUR NOTES SUCK

MSE 4803: this was a good class

#### Other overall comments

MSE 4803: i did not know this course was offered until the semester had already started. more people would be very excited to take this course if it were offered again and made aware to those outside the mse/bme community.

MSE 4803: Very interesting class, should definitely have it again

MSE 4803: Really hope this course can be continued in future semesters, would definitely recommend to other students to sign up for it

MSE 4803: Really enjoyed this course

MSE 4803: None. Instructor greatest strength MSE 4803: Very enthusiastic about the material. MSE 4803: Really easy going teacher who wants his students to do well, but also wants them to work hard for the grade. Greatly enjoyed your class, thanks again! MSE 4803: The professor seemed excited about teaching the class. MSE 4803: Engaging us in class and giving us way to participate MSE 4803: He kept the material interesting which was very important for a 9oclock class. I would have no problems getting up in the morning to come to class because I knew I would be interesting. MSE 4803: enthusiasm. he also worked with students very well. engaging, but not intimidating MSE 4803: Knew the material very well and presented in logical order MSE 4803: Enthusiasm, you make class enjoyable MSE 4803: Ability to stimulate interest in the topics MSE 4803: Quick response times MSE 4803: Dr. Ready did a great job maintaining my interest in the subject matter. A lot of other professors in my experience take something I thought would be interesting and make it the opposite. This was not the case in this class MSE 4803: Great lecturer, very interesting, makes many grade improvement opportunities available to students. MSE 4803: His clear enthusiasm for this subject. You could tell he actually enjoyed coming and teaching the class. He was great with engaging the students and made the atmosphere a very open and interactive one. MSE 4803: The enthusiasm that he brought to the class. Made me want to wake up and be there by 9am, which is saying a lot for Tech professors MSE 4803: Liked how he was very engaged about the subject. Made it a better class MSE 4803: Dr. Ready really loves MSE, so there was a lot of enthusiasm about the subject matter. MSE 4803: Seemed really excited about the materials aspect of the course MSE 4803: Ability to communicate well with students, high level of respect for his students and wanted them to succeed MSE 4803: Dr. Ready really enjoys this material and teaching, which came across in his lectures MSE 4803: He was enthusiastic and extremely personable. MSE 4803: Excited about the topic. Has good stories MSE 4803: Dr. Ready was an easy to listen to lecturer. MSE 4803: Understood that students like to see the actual implementation of these materials being used. MSE 4803: Great guy. Offered lots of way to improve grade in class. MSE 4803: Dr. Ready was able to organize informative and interesting field trips. MSE 4803: His enthusiasm and desire to help us out all the time with fun extra credit made this class enjoyable. It was one of those classes that you actually want to go to which is always nice. MSE 4803: He was very enthusiastic about the material MSE 4803: enthusiastic MSE 4803: Good teaching style, lectures kept me interested in the material MSE 4803: Dr. Ready really knows a lot about material properties, designs, and how those relate to the sport at hand MSE 4803: Very passionate and engaging during lecture MSE 4803: Definitely enthusiasm -- it was incredibly evident you were really excited about this course and both the materials and the sports aspects of it. MSE 4803: Very enthusiastic about the material MSE 4803: entertaining MSE 4803: Kept interest there MSE 4803: Enthusiastic and chill MSE 4803: Being enthusiastic and trying to connect with his students MSE 4803: enthusiastic about the subject and has creat ed a fun course

MSE 4803: Enthusiastic

MSE 4803: Fun professor, kept us engaged in and out of the classroom.

MSE 4803: pretty good about drawing test questions straight from lecture. that made them fair

MSE 4803: He was energetic and funny.

MSE 4803: Engaging and holding people accountable

MSE 4803: Really knew what he was talking about

MSE 4803: Very funny and a unique style of teaching that made the class very interesting and approachable! Lots of variety in style of classes, with cool field trips and direct learning from coaches on GT's campus! Made me appreciate Georgia Tech as a school way more, as he connected many stories to the awesomeness of Tech and the neat place that we call home! End of the year project actually taught me a lot about the materials used in sports equipment and I feel like that is a cool thing to know about!!

MSE 4803: his teaching

#### **Instructor improvements**

MSE 4803: During lecture try to explain the acronym meaning 2-5 times before beginning to use just acronynms. It is really easy to miss an acronym meaning if it is only announced once.

MSE 4803: Lectures have absolutely zero structure and the notes posted online dont make effective learning any easier

MSE 4803: Professor Ready came across as arrogant. In particular, I felt that the "extra credit opportunities" (bringing a "big head" of the professor to a basketball game or his office, wearing hawaiian shirts on Fridays, asking for the professor's autograph at a basketball game) were extremely unprofessional.

MSE 4803: Handwritten notes both in class and online were extremely messy. Needs either typed materials or some other source to reflect on after class because if a student doesn't take perfect notes in class or misses class once they will be lost

MSE 4803: Planning, you sometimes would go a little too far on tangents or not realize how much you need to cover in a short class period

MSE 4803: Provide rubric for presentations and papers, or have more detailed guidelines/instructions

MSE 4803: Was incredibly arrogant and said some things that may have been inappropriate. His teaching style was HORRIBLE. His notes were almost incomprehensible and he presented in a similar fashion to his notes. Nothing was cohesive.

MSE 4803: Notes always hard to read on the board and very disorganized - notes on T Square are the same way so not more helpful if wanting to review something in depth from lecture. Hard to keep depth of information organized when furiously writing in class but unable to understand what's on the board.

MSE 4803: His handwriting could be a bit neater, especially for notes posted online. If this class is taught again a powerpoint may be helpful.

MSE 4803: If he could provide more emphasis on whats important to remember for the test and whats just good to know, that would be great.

MSE 4803: Now that a semester of this class has been taught, a textbook would help with organizing and studying from a student perspective

MSE 4803: Needs to plan lectures better so we can stick to the syllabus schedule.

MSE 4803: N/A

MSE 4803: Maybe reorganizing a little and not going so in depth of a single sport so we could cover more

MSE 4803: Time management. I think more breadth and less depth would be better. Classes would get a little boring (especially golf) by the end of lecture.

MSE 4803: I would like more clarification on what needs to be known before tests and more guidelines or requirements given for the group project paper and presentation.

MSE 4803: Catering to students who have not had previous MSE experiences.

MSE 4803: The professor treats the class like a joke, in my opinion. He offers extra credit for wearing Hawaiian shirts on Fridays, asking for his autograph in public and when he is with his family. These, as well as general statements made by the professor over the semester cast doubt on his willingness to seriously teach a course.

MSE 4803: N/A

MSE 4803: Notes were all over the place

MSE 4803: didnt give us much to work with

MSE 4803: Hard to understand notes on the board sometimes

MSE 4803: His lectures could get pretty off topic sometimes and it was hard to keep up when he talked about the details of different processes sometimes.

MSE 4803: Every time I tried to study for a test (including now, studying for the final), I feel underprepared in terms of the resources available. For tests, I could study my own notes and the notes posted, but beyond that there was nothing. In the future you'll have tests from this semester, so that will be incredibly helpful, but I just felt like I didn't have the resources needed to feel prepared.

MSE 4803: Very funny, but sometimes would cross the line of funny and disrespectful

MSE 4803: lecturing all over the place. hard to discern what is important and what is not

MSE 4803: Clarity of notes.

MSE 4803: I'm good at deciphering hand writing on whiteboards, but it was a bit messy and all over the place. Logical order of presented material was easy to follow, but it was never written that way on the board lol

MSE 4803: Organization

MSE 4803: handwriting is hard to read

MSE 4803: BETTER NOTES!!! BETTER LECTURER!! If our only resources are your notes which are completely ARBITRARY this class sucks no backbone or structure. YOUR SOOO UNORGANIZED

MSE 4803: Lecturing, the handwriting and speed of lecturing were too hard to follow.

MSE 4803: Poor notes organization

MSE 4803: respect your TAs, my dude. getting reddit famous (and announcing it in calss, WTF??) really killed my respect for you

MSE 4803: There needs to be a book or better notes or something. I have a really hard time following the notes and fully understanding the concepts. With a book, I would be able to read it and understand the material but I feel like right now I just memorize what is written on the board and I forget all of it after the test because I don't really understand what I am memorizing.

MSE 4803: Nitpicking here but on certain subjects/topics maybe explain them a little better or show real life pictures

MSE 4803: Notes could be a little more structured

MSE 4803: Maybe more structure in lectures, with detailed notes/definitions that are closer to the exam content. Easier tests-- I am not doing great in the class, but I still enjoy coming to class because I find myself really learning about a subject that I had no previous exposure to ever.

MSE 4803: nothing, he was great

#### **Instructor other comments**

MSE 4803: After covering a section please ask if anyone has questions. Some students do not have a very loud voice and so it is hard to get the professor's attention and sometimes the student does not want to interrupt the flow of lecture. Also you may answer the student's question later in the section but if you don't then by the time you get to the next section it almost feels too late to get clarification.

MSE 4803: For the first time teaching this course Dr. Ready did a good job evolving the course schedule as the semester went along. It seemed hard to know how long each sport would take to cover and how much detail each would go into, but it was done very effectively and will only get better each semester the course is taught.

MSE 4803: Please teach this class again! However, if MSE 2001 were a prerequisite, I think a lot more sports specific materials information would be able to be covered if some of the basic MSE topics could be skipped. Thanks for a great semester!

MSE 4803: Overall very good quality of teaching!

MSE 4803: Very flexible in terms of how he taught so that it applied to all students learning

MSE 4803: Pick fewer sports to discuss and go more in depth with those.

MSE 4803: great guy very enthusiastic about the class and subject but not as great as a teacher mainly because he didnt really give us many resources to work with.

MSE 4803: Great course overall. Loved the aspect of sports in mse. I'm not sure if you should be as crude, some students may see it as disrespectful. Didnt really affect me though. Thanks for teaching, was fun!

MSE 4803: None.

MSE 4803: pretty good teacher

MSE 4803: Truly one of the best teachers I've had

MSE 4803: Honestly one of the funniest and best professors because he was honest, relatively easy-going, and clearly very enthusiastic about the subject. Cool professor would definitely want to see him interact with the student body at Tech in more than just a teaching manner, because he knows what it is like to be a student at Tech and thus I think would be very effective at connecting with the students on campus! I referred many people to take his class because his style of teaching is unique and refreshing compared to other professors.

# **Georgia Institute of Technology**



# William Ready Teaching Special Topics 4803 Undergraduate Semester A

There were: 87 possible respondents.

	Question Text	N	RR	Interpol. Median	0-3	3-6	6-9	9-12	12-15	15-18	18 +	N/A
1	Student: Hours per week	38	44%		6	20	6	4	2	0	0	0
					0-30	30- 50	50- 70	70- 80	80-90	90- 100	N/A	
2	Student: Percent attendance	37	43%		0	2	1	5	10	19	0	
3	Student: Percent homework completion	38	44%		1	0	0	0	0	22	15	
					5 Extremely Well	4	3	2	1 Completely Unprep	N/A		
5	Course: How prepared to take subject	38	44%	4	14	10	9	4	1	0		
					5 Exceptional Amt	4	3	2	1 Almost Nothing	N/A		
6	Course: Amount learned	38	44%	4.33	16	18	3	1	0	0		
					5 Exceptional	4	3	2	1 Very Poor	N/A		
7	Course: Assignments facilitated learning	38	44%	4.39	17	14	5	1	0	1		
8	Course: Assignments measured knowledge	38	44%	4.6	21	11	5	0	1	0		
					5 Strongly Agree	4	3	2	1 Strongly Disagree	N/A		
9	Course: Overall effectiveness	37	43%	4.53	19	13	4	1	0	0		
					5 Exceptional	4	3	2	1 Very Poor	N/A		
17	Instructor: Clarity	38	44%	4.1	13	15	7	2	1	0		
					5 Strongly Agree	4	3	2	1 Strongly Disagree	N/A		
18	Instructor: Communicated how to succeed	38	44%	4.6	21	14	2	0	1	0		
					5 Exceptional	4	3	2	1 Very Poor	N/A		
19	Instructor: Respect for students	38	44%	4.82	28	8	2	0	0	0		
					5 Extremely Enthus	4	3	2	1 Detached	N/A		
20	Instructor: Enthusiasm	38	44%	4.89	31	7	0	0	0	0		
					5 Made Me Eager	4	3	2	1 Ruined Interest	N/A		
21	Instructor: Stimulates interest	38	44%	4.64	22	11	3	1	1	0		
					5 Highly Accessible	4	3	2	1 Hard To Find	N/A		
22	Instructor: Availability	38	44%	4.35	16	13	5	0	2	2		
					5 Extremely Helpful	4	3	2	1 Not Helpful	N/A		
23	Instructor: Feedback helpfulness	38	44%	4.53	18	8	7	1	1	3		
					5 Strongly Agree	4	3	2	1 Strongly Disagree	N/A		
24	Instructor: Overall effectiveness	38	44%	4.67	23	8	5	1	1	0		

	Text Responses
Course best aspect	

MSE 4803: Interesting topics covered. The field trips were fun to go to

MSE 4803: Interesting material (pun intended)

MSE 4803: Definitely the structure of the class. Three basic phases: MSE and exams, Field trips, group project. The structure was perfect.

MSE 4803: Break from technical monotony of other science courses. Very interesting and new topics

MSE 4803: There are so many good aspects about the class. My favorite was probably the field trips taken to learn about material sciences in particular sports.

MSE 4803: Lectures were insightful and engaging

MSE 4803: Field trips, being able to understand why certain materials are used in sports based on properties

MSE 4803: THIS CLASS IS EXACTLY WHAT GEORGIA TECH IS ABOUT. THIS WAS AWESOME

MSE 4803: I really liked learning about how MSE is applied in the real world. It made the concepts we learn in MSE 2001 more "real" and applicable to life, which is the whole reason I am taking MSE classes.

MSE 4803: Very interactive course.

MSE 4803: Field trip aspect later in semester to tie what we learned in class to actual implementation in sports

MSE 4803: Field trips and project

MSE 4803: This course is phenomenal in the fact that it ties in fundamental materials science and engineering principles with a variety of majors, making the course material applicable to anyone who takes the class. Additionally, course material is applied to a wide variety of sports, which can be interesting to any student who has even the most mild interest in course topics. Field trips to facilities on campus helped principles learned in class be applied to concrete functioning in the Georgia Tech community. Interdisciplinary group projects at the end of the semester allowed students to completely apply what they learned in the course to subjects that they picked--which is great because we could merge what we learned with topics we were passionate about.

MSE 4803: really interesting subject manner, really enjoyed the field trips

MSE 4803: It was different to other courses by including things like field trips and extra credit for attending sports events.

MSE 4803: This class was actually interesting and related to things in my everyday life which was refreshing and engaging.

MSE 4803: I went into this class with zero MSE or engineering background, and Professor Ready managed to spark my interest enough to take the class in the first place, let alone teach me tons of new information.

MSE 4803: The best part was getting out to see everything first hand as well as getting to hear from all the coaches. I believe one of the most underrated things about being an engineer is speaking with people that experience problems and frustrations first hand. Hearing coaches and people who had been around the game for a long was tremendous in terms of understanding whats important and what was not.

MSE 4803: Incredibly interesting course covering a large range of sports information, field trips were especially interesting.

MSE 4803: Teacher's enthusiasm

MSE 4803: This class was able to incorporate my major with my love of sports. It is what I want my future career path to be based around so very glad this class was offered.

MSE 4803: Field trips were fun

MSE 4803: It is a cool topic that the professor makes fun and educational

MSE 4803: extremely interesting and combined my engineering degree interest with my love of sports

### **Course improvements**

MSE 4803: None

MSE 4803: N/A

MSE 4803: I think simple homework assignments would be very helpful.

MSE 4803: N/A

MSE 4803: Earlier application to sports equipment, touching on a wider variety of sports

MSE 4803: I think the structure of the class could be more organized. Instead of organizing the sports section by sport, it might be more helpful to organize it by topic (such as equipment used for hitting, balls, etc.).

MSE 4803: Tests were more about your ability to memorize information instead of understanding of information.

MSE 4803: More info given on the final project

MSE 4803: More discussion

MSE 4803: To be honest, this class is pretty awesome as it is. Would have been way better if it was taught in the afternoon (sorry if this isn't a constructive comment).

MSE 4803: letting the students take a poll for which sports they would be interested in learning about would be cool

MSE 4803: Have clearer notes. Having PowerPoints would make the course exponentially better and clearer for the student as to what information is actually pertinent. At the minimum, having legible handwritten notes would be one way to improve the course.

MSE 4803: Need to be more explicit as to what is tested on exam. Notes need to be more organized and presented in a more organized fashion. Need to explain what part of the notes are important and which parts aren't

MSE 4803: I think that the class is structured in a fantastic way that keeps its integrity but also makes it very fun and enjoyable.

MSE 4803: Notes and structure are disorganized sometimes. If you made slides for yourself to present off of, even if you don't give them to students then the information will be more concise and clear

MSE 4803: Not so many field trips. They didn't help as much as I expected them to. They were time crunched (from trying to get to these places when I had a class right before to trying to cover all the materials used in a sport in 50 mins and then having to get to my next class.).

MSE 4803: Notes were so hard to read. Often didn't give enough information about each topic to actually learn anything useful. Give cleaner, more organized notes

MSE 4803: MAybe add material slides

MSE 4803: less time talking about the MSE 2001 topics and more just about the sports - maybe including more sports or those that are more common

#### Other comments about quality of course

MSE 4803: None

MSE 4803: N/A

MSE 4803: N/A

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MSE 4803: Great class!

MSE 4803: Incorporate more "American" sports in the lecture part of the class (ie basketball, football, baseball). This will entice more students.

#### Other overall comments

MSE 4803: None

MSE 4803: N/A

MSE 4803: I think class could be made a little bit more engaging.

MSE 4803: N/A

MSE 4803: I would have liked a more interactive class but that would also have been difficult for a class of its size

MSE 4803: Great great course, please keep teaching it Dr. Ready! There are not enough courses that combine a wealth of information and a great learning environment like this at Tech.

MSE 4803: really good

#### Instructor greatest strength

MSE 4803: fun and interesting!

MSE 4803: Enthusiasm for the material

MSE 4803: Knowledge, comedy, engaging lectures, fair exams, and good guidance for the group project. Ready does it all

MSE 4803: Personality in teaching keeps me interested

MSE 4803: Dr. Ready's enthusiasm for the class and for sports made this class a great success.

MSE 4803: Solid lectures

MSE 4803: DR. READY IS THE MAN AND THIS CLASS WAS LITERALLY ONE OF THE GREATEST CLASSES I'VE TAKEN AT TECH. BY FAR.

MSE 4803: Dr. Ready was able to get me interested in a topic (sports) that does not usually grab my interested. I think that I learned a lot in this class and that was due to Dr. Ready.

MSE 4803: Enthusiastic about teaching the course material.

MSE 4803: Lecture skills and ability to make class interested in the topics

MSE 4803: Communication and keeping the class exciting

MSE 4803: Dr. Ready was fun and energetic and really seemed to enjoy teaching the course and being around students. ( with lots of professors I get the vibe they do not like students)

MSE 4803: Professor Ready is an exceptional teacher and Georgia Tech is lucky to have him. He broke down topics in ways that were easy to understand and that were easily relatable to a variety of majors. He was engaging, knowledgeable, and it was clear that he cared immensely about the students in this course.

MSE 4803: humor! Dr Ready's lighthearted approach to the subject matter really made me pay attention (didnt want to miss a single dad joke), and his passion for the material made him a joy to learn from. Additionally, he treated us like we were his own kids, imparting life lessons or teasing us about being late that made me feel extremely comfortable talking to him when I needed help or speaking up in class. I really wanted to make him proud!

MSE 4803: He is enthusiastic about the subject.

MSE 4803: Dr. Ready loves what he is doing and his enthusiasm is transferable.

MSE 4803: Very interesting to listen to

MSE 4803: Dr. Ready is very passionate and has a great attitude towards the subject manner - and its contagious. Dr. ready really makes the course by combining humor, seriousness, fairness and fun all into one class. I learned a lot and had a lot of fun. I love CES EduPack too!

MSE 4803: Incredibly enthusiastic and knowledgable. Answers questions incredibly well and explains information clearly.

MSE 4803: Engaging students in tech sports and getting us to see first hand what we learn in class

MSE 4803: His passion for materials and sports. He also did a really great job of simplifying MSE 2001 into a month.

MSE 4803: Funny and interesting guy

MSE 4803: it is a great class

MSE 4803: very enthusiastic and easy to listen to

#### **Instructor improvements**

MSE 4803: notes are a little scattered and hard to follow

MSE 4803: Structure either your notes, the lectures, or the way you present the material that stresses the 'take home' messages, for lack of a better phrase. Half the time the information on the board is so scattered I can't tell what's important and what isn't.

MSE 4803: N/A

MSE 4803: The way you write notes on the board is an absolute mess and it is extremely hard to follow. Try finding out a better way to lay out the board so it is less confusing.

MSE 4803: Review sessions for midterms

MSE 4803: Sometimes the writing on the board was unclear.

MSE 4803: I felt that the class was a little disorganized and I was not always sure what I was expected to know for exams.

MSE 4803: The course wasn't structures. The notes were not easy to learn from all. The subject is very dry. The tests seem to test knowledge on random minuscule aspects of sports.

MSE 4803: Better lecture notes!!

MSE 4803: think about doing quizzes or smaller assignments along with the exams in order to keep students focused.

MSE 4803: More structured notes

MSE 4803: It was hard to read his notes on the board with how large the class was. He also was kinda scatterbrained and wrote seemingly unorganized bullet points all over the board so it was hard to get all of the important information.

MSE 4803: improved organization for transportation to the golf field trip

MSE 4803: He could hold more office hours and have better notes.

MSE 4803: Needs to be more organized with notes

MSE 4803: Writing on the whiteboard in an organized and legible manner.

MSE 4803: His notes can be disorganized and hard to follow. It took me a while to figure out what all the acronyms were.

MSE 4803: The structure of the notes was very confusing to follow both in class (going very quickly through them) and the posted notes on T-square. I think it would be more helpful if the notes were organized into a powerpoint and posted online.

MSE 4803: NA - Jud rocks.

MSE 4803: Notes on the board are all over the place making it hard to follow sometimes. Creat e slides for yourself so that information is already neatly layed out.

MSE 4803: lectures were a little scattered and confusing

MSE 4803: Typed notes/powerpoints. Handwriting/abbreviation and the lack of organization of the notes on the board made it hard to follow at times.

MSE 4803: Notes and more in depth on topics. Probably have to reduce number of topics but I rather know more about 1 topic than a little about a lot.

MSE 4803: add slides

MSE 4803: notes are very disorganized, both in the uploaded version on T-Square and on the board. It was difficult to follow his thoughts as they were all over the board.

#### **Instructor other comments**

MSE 4803: Fantastic teacher.

MSE 4803: N/A

MSE 4803: You should definitely have office hours scheduled. I never asked you for help because I didn't want to inconvenience you by sending out an e-mail to set up an appointment.

MSE 4803: N/A

MSE 4803: This class has been a lot of fun! I've learned a lot and it's been extremely rewarding.

MSE 4803: jud is bae and I wish he couls teach all of my classes

MSE 4803: Thanks Dr. Ready! Keep it going strong. Hawaiian shirt Friday lives on. Be the pig.

MSE 4803: na

MSE 4803: I think not having MSE 2001 as a prereq makes it very difficult for someone like me who didnt take it to follow along in the beginning of the course