Course Description
Study of processes involved in acquiring, perfecting and controlling movement skill.

Course Overview
The course provides an introduction to the scientific study of how humans learn and control their movements, from a behavioral perspective.

Course Objectives

Content objectives

General
1. To understand and be able to evaluate a theory of how our bodies move
2. To understand basic issues related to the categorization and measurement of movement skills.
3. To understand and be able to evaluate techniques used to optimize motor learning in adults

Specific
1. INTRODUCTION TO MOTOR SKILLS AND ABILITIES
   a. You will be able to differentiate between a skill, and action, and a movement.
   b. You will understand how to classify motor skills (place them in specific categories according to certain similarities).
   c. You will understand how to measure the performance of motor skills in terms of both the outcome of the movement and the movement itself.
   d. You will understand how (very) early development of core movement skills
can have a critical effect on later potential for success at movement skills, by considering the research on motor abilities.

2. **INTRODUCTION TO MOTOR CONTROL... (HOW DO WE MOVE?)**
   a. You will understand how peripheral and central sources of information can be used to control movement.
   b. You will understand the rudiments of dynamic systems theory, which promotes the idea that movement structure is determined by a combination of energy efficiency, body structure, CNS and environmental laws (such as gravity).

3. **INTRODUCTION TO MOTOR SKILL LEARNING**
   a. You will understand what motor learning is, and is not, and how to assess it.
   b. You will understand how learning progresses in stages, and the way performance demands alter as learning progresses.
   c. You will understand that potential for excellence in motor performance can be better predicted on the basis of abilities, than by early performance capabilities.
   d. You will understand how learning one motor skill can affect performance of another through transfer of learning.

4. **PRACTICE CONDITIONS**
   a. You will understand when and when not to use demonstrations of a motor skill, through examining how and why they work.
   b. You will understand the contribution of augmented feedback (verbal instructions, cues, and other teaching aids) to improving motor skills through examining questions such as...
      i. How often should it be given (per practice session)?
      ii. When should it be given (during or after performance)?
      iii. What form should it take (verbal/non-verbal/metaphorical)?
   c. You will understand how practice scheduling can improve skill retention by examining questions such as
      i. When might random practice be useful?
      ii. Why does the order in which tasks are practiced make a difference?

*Learning objectives (adapted from Angelo & Cross, 1993)*

1. Elements of higher order thinking skills
   a. Develop ability to distinguish between empirically supported evidence and opinion
   b. Develop ability to draw reasonable inferences from observations
   c. Develop ability to apply principles already learned to new problems and situations (generalization)

2. Elements of basic academic success
   a. Learn concepts and theories in this subject

3. Work and Career preparation
   a. Develop ability to work productively with others
   b. Develop a commitment to accurate work
**Instructional Rationale**

*What do I expect of you?*

a. Read and listen to course materials carefully, and before the discussion of the topic.
b. Learn material well enough to answer searching conceptual questions in essay form in the term paper.
c. Learn the material well enough to answer demanding multiple-choice questions.
d. Develop an ‘active’ and ‘deep’ approach to your study. Ask questions, and speak up when you do not understand something. The chapter questions are designed to help you see what you do and do not understand...your responses and those of your classmates in the discussions are designed to develop a reflective approach to the material, and help you both improve and check your understanding of the material.

*How is the course structured? (An important bit)*

a. You will first be required to read the text and listen to the audio slides on a particular topic.
b. You will be required to complete assignments on each topic in groups in class, which will require discussion and problem solving.
c. The answers you hand in (from a group) will not be graded but will be read by me, and used as the basis for further clarification of the topics. You will get sets of “model answers” to these and other study questions prior to the exams/term paper.
d. You will also answer multiple choice questions on each topic, presented online (using ReggieNet). The goal of these is to provide a guide to your understanding of the topic after the audio slides and class discussions, but before the in class exams. The fact that you are allowed to submit multiple versions of each quiz will prevent this hurting your grade, and will probably help it. **Your best score across submissions for a quiz will count as your final score on that quiz.**

*Why do it this way?*

a. The in class assignments will encourage further reflection on the content of the audio slides, and hopefully deeper understanding of the material – you should go beyond the factual knowledge required for the multiple-choice assessments.
b. Having some discussion of the topics before I provide model answers should encourage you to be critical listeners rather than ‘sponges’ – hence active rather than passive. Question, question, question...
c. The group work is intended to encourage:
   i. A shared goal of understanding within the group
   ii. More questions (within the group and of me – easier than asking in front of 50 or more classmates)
   iii. An appreciation that it’s not only you that is struggling with the material!
   iv. A BETTER understanding of the material – in part because of the previous three points

*What should you expect of me?*

a. To provide you with practice at the concepts required to answer term paper questions before you write your term paper, so that you have a good chance of
obtaining the necessary standard of understanding and communication (the practice is provided via class questions/discussions, and their answers).

b. To suggest study techniques that might help you to obtain better marks on the multiple-choice sections of the course.

c. To provide understandable summaries of the course material via audio slides, which are directly relevant to your assessments.

d. To make sure that you get sufficient communication with me during the group sessions to progress in your understanding of the topics and the depth of your answers.

Topical Outline

INTRODUCTION TO MOTOR SKILLS AND ABILITIES
   a. Skill classification systems
   b. Measurement of motor performance
   c. Motor Abilities

INTRODUCTION TO MOTOR CONTROL
   a. Perspectives and Science: World views, Theories, Models, Hypotheses
   b. Some observations on how we move
   c. A theory of control: Dynamic Pattern Theory
   d. Proprioception and vision

INTRODUCTION TO MOTOR SKILL LEARNING
   a. Defining and assessing learning
   b. Stages of learning
   c. Predicting performance for later learning stages
   d. Transfer of learning

PRACTICE CONDITIONS
   a. Demonstration and Imagery
   b. Instruction and Augmented Feedback
   c. Practice Conditions
      i. Variability of practice
      ii. Whole and part practice
      iii. Mental practice

Required Text,
The 9th or 11th edition of the text is also acceptable.
Versions earlier than the 9th are likely to be too dated to refer to the more recent research used for the class.
Required Student Tasks

On-line Quizzes

Short, multiple choice quizzes on course material - you may collaborate with your classmates on these (altogether they will be worth 5% of your grade). Each is due after completing the topic in class. They are intended as a final bit of practice prior to taking each in-class exam. The first of these is the syllabus quiz, which is probably easier than the rest. See last page of this syllabus for deadlines.

Exams

3 Multiple choice exams on course content, to be taken individually, without consultation with other class members (each worth 25% of your total grade). The final is the last of these exams. Based on results in past classes, these are the most demanding assessments to excel at. Typically the first exam is the easiest of the three.

In class discussions/chapter questions

To be completed in groups. You might hand in as many sets as one of these for every topic we cover (max 17), or as few as 10. Every one you hand in will be graded on a pass/fail basis* (see below for an explanation of how this works). Each one you hand in will be the product of discussions among about 5 group members. Ten (10) will count towards your final grade. Each will be worth 1% of your final grade.

Term paper

This will consist of three short (1 or 2 page) essays based on the major topics in the course. You will get the questions at least 2 weeks prior to the due date. This MUST BE COMPLETED ON YOUR OWN – do not plagiarize (don't copy!). In total, the assignment is worth 10% of your final grade. It is due on the last day of class, at the beginning of your scheduled class time. Emailed copies are not accepted.

Research Experience

You may be asked to take part in as many as 2 data collections during the class. This will help you understand research in motor learning. Extra credit when available.

*pass/fail grading works this way: if you pass it, then the grade you average for all other forms of grading is earned for this piece of work. If you fail it, you get zero for that particular piece. You will have a chance to redo the work until you pass it, provided that you have not missed the initial submission due to absence or lateness. Please bear in mind the purpose of this is to provide good practice at important information relevant for the course, with the minimum penalty. It's not to hurt your grade. Most people will not drop a single percentage point
through this grading method.

Student Performance Evaluation Methods

Grading Rubric (Term Paper – not applicable to multiple choice assessments)

<table>
<thead>
<tr>
<th>%</th>
<th>Grade</th>
<th>Typical quality of work (for Term Paper, not for Multiple Choice)</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100</td>
<td>A</td>
<td>Exceptional work with no errors, showing original and/or critical thinking, and excellent communication</td>
</tr>
<tr>
<td>80-89.99</td>
<td>B</td>
<td>High quality work with only minor omissions, showing excellent understanding of the material</td>
</tr>
<tr>
<td>70-79.99</td>
<td>C</td>
<td>Good work showing a good understanding of the material</td>
</tr>
<tr>
<td>60-69.99</td>
<td>D</td>
<td>Major omissions or misunderstandings or errors or failure to write clearly</td>
</tr>
<tr>
<td>0-59.99</td>
<td>F</td>
<td>Unacceptably poor performance in any of those listed for grade &quot;D&quot;, or failure to submit on time</td>
</tr>
</tbody>
</table>

Weighting of Assignments (I have also put average scores of past classes on each of the assignments – see blue font)

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Value Each</th>
<th>Number of assignments</th>
<th>Total Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-line Quizzes (in ReggieNet) (relatively easy [80%-90% average])</td>
<td>Around .5%</td>
<td>Will vary (may be as many as 12)</td>
<td>5%</td>
</tr>
<tr>
<td>Classroom exams (first is easy [85-90%], remaining two very difficult [70-76%]).</td>
<td>25%</td>
<td>3</td>
<td>75%</td>
</tr>
<tr>
<td>Term paper (challenging, but people typically do well – average is over 80%)</td>
<td>10%</td>
<td>1</td>
<td>10%</td>
</tr>
<tr>
<td>In class assignments</td>
<td>1 %</td>
<td>Up to 17 (best 10 will be kept)</td>
<td>10% pass/fail*</td>
</tr>
<tr>
<td>Research Experience</td>
<td>EC*</td>
<td>2</td>
<td>EC* (if available)</td>
</tr>
</tbody>
</table>

[*EC = extra credit. May or may not be made available – depends on time and need]
Course Policies, Procedures, and Other Resources

Use of distracting materials in the classroom
This paragraph is necessary because of the ubiquity of smart phones, but applies to newspapers and other non-class related material. Using phones, reading newspapers, and studying any material that is not directly relevant to the class, during class time, is discouraged. If you consistently ignore this, you will be asked to leave the classroom. Please understand that this is not some random draconian punishment, but is for the benefit of yourself and all other students in the class. Part of my responsibility as an instructor is to create an environment conducive to each of us focusing our attention on the appropriate material necessary for learning to take place. Cell phones are as disruptive to this focus of attention as simply talking with the person next to you. So, for your own good, I will try to reduce this damaging behavior. I don’t mean just occasionally checking your phone…a couple of seconds does little harm most of the time. But please self-monitor…you need to be active with the class rather than active with your phone. If you would rather talk with someone else on a matter not related to the class, you are welcome to not come to class. There is no grade for attendance (see below). If you have an emergency and must leave your cell phone on or keep it in front of you, please let me know at the start of class.

Attendance
Attendance will be taken, but will not form a part of your grade. Be careful – you must still complete the in-class assignments. Personally, I think you will get more out of the class by attending regularly. And I’d enjoy your company.

Academic Integrity
General Statement from The Office of the Dean of Students (Endorsed by me):
Academic integrity is an important part of this university and the course. Academic integrity is required of you the student and myself as the instructor. Students are expected to be honest in all academic work. It is the student’s and faculty’s responsibility to uphold the principles of academic integrity. Academic integrity should be used in the preparation of this course, in class time, regarding exams, and with regard to written assignments. A student’s placement of his or her name on any academic exercise shall be regarded as assurance that the work is the results of the student’s own thought, effort and study.

Students who have questions regarding issues of academic dishonesty should refer to the Code of Student Conduct, A1 (Academic Dishonesty), which outlines unacceptable behaviors in academic matters. In certain circumstances (such as cheating or plagiarism), I may be required to refer a student to Community Rights and Responsibilities for a violation of Illinois State University’s Code of Student Conduct. If you are uncertain about whether or not something is dishoneste, please contact me. Academic penalties regarding academic dishonesty may range from failure of the assignment (with a zero for the piece of work) to dismissal from the
University, depending upon the seriousness of the infraction and the student’s disciplinary record.

Link to code of student conduct:
http://deanofstudents.illinoisstate.edu/conflict/conduct/code/COSC%20July%202015.pdf

Other issues relevant to this course:
1. Group-work: It is expected that every person in a group will contribute towards that group’s answers. If a person does not attend for that day, they should not attach their name to the group, and should not receive credit for that assignment.
2. Plagiarism: Any work submitted should be your own. Any evidence of plagiarism, or of academic dishonesty of any kind, will result in the minimum penalty of a failing grade for the relevant segment of the course. For further information, see above.

Late submissions
Documentary evidence must be submitted to excuse any missed assignment, including exams/quizzes. If you miss without giving me prior warning, you will be likely to receive zero on the assignment.
In general, late submissions of quizzes will receive a zero. For class assignments and the term paper, the late penalty will be 10% of the grade for the assignment for each day or part of day that they are late. For instance, if your assignment is late by 1 hour you will be docked 10% of the grade (a grade of 76% will become 66%); if you are late by 25 hours (more than one day), you will be docked 20% of the grade (a grade of 76% will become 56%), and so on.

For additional information and help...
The Julia N. Visor Academic Center, a division of University College, provides the following free services for students:
- Tutoring in a variety of academic subject areas, including support for many of the courses in the Inner Core of the General Education program.
- One-on-one writing assistance to anyone in the University community. Appointments can take place in the Visor Center or on Skype.
- Study skills assistance individually and in small groups, as well as study skills workshops, for students who want to improve their ability to achieve academic success.
- A variety of academic support programs targeted to help students achieve their full academic potential.

The Julia N. Visor Academic Center
438-7100
Vrooman 012 (between Manchester and Hewett dorms)
Mon-Thurs, 8:00 a.m.-9:00 p.m., Fri, 8:00 a.m.-4:30 p.m., Sun, 4:00 p.m.-8:00 p.m.
www.UniversityCollege.IllinoisState.edu/tutoring

Disability concerns: Any student needing to arrange a reasonable accommodation for a documented disability should contact Disability Concerns at 350 Fell Hall, 438-5853 (voice), 438-8620 (TTY).

Student Counselling services
Finally, for this section, let’s take a minute to consider real life. I have often had students “go missing” during the semester. This is why I take attendance...just to see if people have been absent for a while. I want to know if something is wrong. It is quite normal for life at university to be tough on you. Here is a statement from student counselling services which I quite like:

"Life at college can get very complicated. Students sometimes feel overwhelmed, lost, experience anxiety or depression, struggle with relationship difficulties or diminished self-esteem. However, many of these issues can be effectively addressed with a little help. Student Counseling Services (SCS) helps students cope with difficult emotions and life stressors. Student Counseling Services is staffed by experienced, professional psychologists and counselors, who are attuned to the needs of college students. The services are FREE and completely confidential. Find out more at Counseling.IllinoisState.edu.

Have a great semester, and remember that the staff of SCS is ready and willing to consult with you about the needs of your students! Give us a call at 438-3655 or check out our online resources at www.counseling.illinoisstate.edu."

Ok – enough of that...See next page for semester schedule...
## Tentative Class Schedule for spring 2017:

<table>
<thead>
<tr>
<th>WK</th>
<th>DAY/DATE</th>
<th>Topic</th>
<th>ReggieNet Quiz deadlines (all 9am)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>T 1</td>
<td>17</td>
<td>Introduction – syllabus &amp; first week’s activities</td>
</tr>
<tr>
<td></td>
<td>R 1</td>
<td>19</td>
<td>No class – listen to slides for chapter 1, and chapter 2 slides 1-14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>T 1</td>
<td>24</td>
<td>Answer questions (in class) covering ch. 1 and ch. 2 slides 1-14.</td>
</tr>
<tr>
<td></td>
<td>R 1</td>
<td>26</td>
<td>No class – listen to slides for remainder of ch 2, re-listen to any that require it.</td>
</tr>
<tr>
<td>3</td>
<td>T 1</td>
<td>31</td>
<td>Ch 2 questions 7 – end.</td>
</tr>
<tr>
<td></td>
<td>R 2</td>
<td>2</td>
<td>No class – Listen to ch. 3</td>
</tr>
<tr>
<td>4</td>
<td>T 2</td>
<td>7</td>
<td>Ch. 3 general discussion</td>
</tr>
<tr>
<td></td>
<td>R 2</td>
<td>9</td>
<td>Answer chapter 3 questions</td>
</tr>
<tr>
<td>5</td>
<td>T 2</td>
<td>14</td>
<td>Review for Exam 1</td>
</tr>
<tr>
<td></td>
<td>R 2</td>
<td>16</td>
<td><strong>Exam 1</strong></td>
</tr>
<tr>
<td>6</td>
<td>T 2</td>
<td>21</td>
<td>Review Exam one; Intro to Ch. 5</td>
</tr>
<tr>
<td></td>
<td>R 2</td>
<td>23</td>
<td>No class – Listen to 5.1; play online games</td>
</tr>
<tr>
<td>7</td>
<td>T 2</td>
<td>28</td>
<td>5.1 questions and discussion</td>
</tr>
<tr>
<td></td>
<td>R 3</td>
<td>2</td>
<td>No class – Listen to 5.2, 5.3</td>
</tr>
<tr>
<td>8</td>
<td>T 3</td>
<td>7</td>
<td>Discuss 5.2, 5.3</td>
</tr>
<tr>
<td></td>
<td>R 3</td>
<td>9</td>
<td>No class – Listen to 5.4, 5.5</td>
</tr>
<tr>
<td>9</td>
<td>T 3</td>
<td>14</td>
<td><strong>No Class – Spring Break</strong></td>
</tr>
<tr>
<td></td>
<td>R 3</td>
<td>16</td>
<td><strong>No Class – Spring Break</strong></td>
</tr>
<tr>
<td>10</td>
<td>T 3</td>
<td>21</td>
<td>Discuss/Answer 5.4, 5.5 questions</td>
</tr>
<tr>
<td></td>
<td>R 3</td>
<td>23</td>
<td>Continue 5.4/5.5 questions; Extra stuff in slides 5.5</td>
</tr>
<tr>
<td>11</td>
<td>T 3</td>
<td>28</td>
<td>Review for Exam 2</td>
</tr>
<tr>
<td></td>
<td>R 3</td>
<td>30</td>
<td><strong>Exam 2</strong></td>
</tr>
<tr>
<td>11</td>
<td>T 4</td>
<td>4</td>
<td>Exam 2 review – intro to chapters 11-13</td>
</tr>
<tr>
<td></td>
<td>R 4</td>
<td>6</td>
<td>No class – listen to chapters 11-13</td>
</tr>
<tr>
<td>12</td>
<td>T 4</td>
<td>11</td>
<td>Ch. 11-13 questions and review</td>
</tr>
<tr>
<td></td>
<td>R 4</td>
<td>13</td>
<td>No Class – listen to ch. 14, complete Wilson quiz several times!</td>
</tr>
<tr>
<td>13</td>
<td>T 4</td>
<td>18</td>
<td>Wilson &amp; Knoblich review, ch 14 review</td>
</tr>
<tr>
<td></td>
<td>R 4</td>
<td>20</td>
<td>No class – listen to chapter 15</td>
</tr>
<tr>
<td>14</td>
<td>T 4</td>
<td>25</td>
<td>Ch. 15 – review</td>
</tr>
<tr>
<td></td>
<td>R 4</td>
<td>27</td>
<td>Overall review of ch. 11-15</td>
</tr>
<tr>
<td>15</td>
<td>T 5</td>
<td>2</td>
<td>Overall review part 2</td>
</tr>
<tr>
<td></td>
<td>R 5</td>
<td>4</td>
<td>Overall review part 3/study session for final.</td>
</tr>
<tr>
<td>17</td>
<td>M 5</td>
<td>??</td>
<td>??: <strong>FINAL</strong> (See MyIllinois State for the final time and day announcement some time in February – I’ll post it when “they” do.)</td>
</tr>
</tbody>
</table>